Introduction

After its establishment in 1983 and until the present day, Holtek Semiconductor has released an unceasing stream of competitive semiconductor devices onto the global market. While continuing to concentrate its design efforts in the 8-bit and 32-bit microcontroller development area, the extensive and increasing range of peripheral semiconductor products should also not be ignored. At the foundation of these successful product developments exists many years of semiconductor design experience accumulated by the company's professional engineering design teams. The results of these extensive efforts have led to Holtek customers being provided with a huge range of high quality industrial grade semiconductor devices. Among Holtek's many customers are included a wide array of popular global brand consumer appliances and industrial products, which shows the global confidence in the company's devices. With this background, Holtek remains fully committed to a continuous expansion of its high quality and superior price-performance semiconductor devices well into the future.

Product Device Range

Holtek's product development focus will remain firmly in the microcontroller area for both 8-bit and Arm® core based 32-bit microcontrollers. These highly functionally integrated microcontrollers includes digital and analog features such as A/D converters, comparators, LCD drivers, PWM generators, high current LED drivers, touch switches, SPI, I^2C, UART and USB interfaces, voice functions, RF functions etc. All of the company's 32- bit and 8-bit microcontroller devices meet with full industry specifications in having a wide voltage and temperature operating range. In addition to its microcontrollers there exists a wide range of peripheral devices such as stand-alone touch switch ICs, LCD drivers, power management devices, video processors, sensors etc. The company will also be expanding its range of functional modules such as PIR modules, infrared modules, temperature/humidity modules etc, further increasing the Holtek product diversity and opening up applications into a wider market area.

Product Development Strategy

In following market trends and customer requirements, Holtek's commitment to new product development and innovation can be seen through its continuously expanding device functionality. As the world of IOT continues to extend its reach into demands for an increasingly connected lifestyle, Holtek's multi-function product range stands in a strong position to have a strong presence in this rapidly expanding market area. The integration of features such as RF functions, voice, touch key and power management functions into its microcontroller range demonstrates this commitment to IOT product trends. Holtek's range of standard microcontroller products will continue to expand but alongside it will be the design of application specific products such as those for motor control, personal health care, home appliances and many others. With its long history of working alongside its customers to assist in the design their custom microcontrollers, Holtek welcomes product manufacturers to contact them to discuss new custom microcontroller design possibilities. Additionally, and as no functionally rich microcontroller is useful without an appropriate development platform, all of Holtek's products are fully supported by a comprehensive range of hardware and software development tools to simplify the designer product development process. Holtek′s obligation to ISO compliance and its string of innovation awards and intellectual properties provide further evidence of the company′s commitment to product development excellence.

Marketing Service Network

Holtek's range of semiconductor products is fully complemented by its extensive global marketing network with a sales presence in most parts of the world. Having established a large number of worldwide sales offices and agents, Holtek′s global marketing structure is well placed to take advantage of any new market opportunities and trends as they arise.

Selecting Your Holtek Device

As the range of 8-bit and 32-bit microcontroller devices covers such a vast range of types and functions, Holtek recommends that customers consult its on-line ″Product Selector″ to assist them in their selection of the most suitable microcontroller for their specific application. With Holtek continually releasing new products onto the market, it should be noted that the website version, rather than the printed version of the selection guide, will contain the most up to date product information.

To use our MCU Product Selector, please visit: www.holtek.com.

32-Bit Flash MCU

Cortex-M0+ 32-Bit MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timers*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	Interface	Others	I/O	Package
HT32F52220	40MHz	2.0V ~ 3.6V	16KB	4KB	—	1 Msps 12-bit ×8	BFTM×1 SCTM×2 GPTM×1	6	—	—	USART×1 UART×1 SPI×1 I²C×1	—	19	24SSOP
HT32F52230			32KB	4KB									23	28SSOP 33QFN
HT32F52231	40MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×12	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×1 UART×2 SPI×2 I²C×2	CRC	19	24SSOP
HT32F52241			64KB	8KB									23 26 40	28SSOP 33QFN 48LQFP
HT32F52243	40MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×2 UART×4 SPI×2 I²C×3	CRC DIV	26	33QFN
HT32F52253			128KB	16KB									38 40 52	46QFN 48LQFP 64LQFP

Cortex-M0+ 32-Bit USB MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timers*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	SCI*4	USB*5	EBI*6	I²S	Inter-face	Others	I/O	Package
HT32F52331	48MHz	2.0V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×12	—	—	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	1	√	—	—	USART×1 UART×2 SPI×2 I²C×2	CRC	24	33QFN
HT32F52341			64KB	8KB															38	48LQFP
HT32F52342	48MHz	2.0V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	2	—	BFTM×2 SCTM×2 GPTM×2 MCTM×1	14	3	√	2	√	√	√	USART×2 UART×2 SPI×2 I²C×2	CRC	26	33QFN
HT32F52352			128KB	16KB															39 51	48LQFP 64LQFP
HT32F52344	60MHz	1.65V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×12	2	—	BFTM×2 SCTM×2 GPTM×1 MCTM×1	10	3	√	—	√	√	—	UART×2 SPI×2 I²C×1	CRC DIV	26	33QFN
HT32F52354			128KB	8KB															38 40 54	46QFN 48LQFP 64LQFP
HT32F52357	60MHz	1.65V ~ 3.6V	128KB	16KB	6CH	1 Msps 12-bit ×12	2	500Ksps 12-bit×2	BFTM×2 SCTM×2 PWM×2 GPTM×1 MCTM×1	18	3	√	2	√	√	√	USART×2 UART×4 SPI×2 I²C×2 QSPI×1	AES CRC DIV	37	46QFN
HT32F52367			256KB	32KB															39 53 67	48LQFP 64LQFP 80LQFP

Cortex-M0+ 32-Bit LCD MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	DAC	Timers*1	Cap.*2 or PWM	RTC	SCI*4	USB*5	I²S	LCD	Inter-face	Others	I/O	Package
HT32F57331	60MHz	1.65V ~ 3.6V	32KB	4KB	—	1 Msps 12-bit ×10	—	—	BFTM×2 PWM×2 GPTM×1	12	√	1	√	—	29x4 ~ 25x8	USART×1 UART×2 SPI×2 I²C×2	CRC DIV	37	46QFN
HT32F57341			64KB	8KB														39 53	48LQFP 64LQFP
HT32F57342	60MHz	1.65V ~ 3.6V	64KB	8KB	6CH	1 Msps 12-bit ×10	2	500Ksps 12-bit×2	BFTM×2 SCTM×2 PWM×2 GPTM×1	14	√	2	√	√	37x4 ~ 33x8	USART×1 UART×2 SPI×2 I²C×2	AES CRC DIV	37	46QFN
HT32F57352			128KB	16KB														39 53 67	48LQFP 64LQFP 80LQFP

Cortex-M0+ 32-Bit 5V MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC	Timers*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	Interface	Others	I/O	Package
HT32F50220	20MHz	2.5V ~ 5.5V	16KB	4KB	1 Msps 12-bit×12	BFTM×1 PWM×2 GPTM×1	12	—	√	UART×2 SPI×2 I²C×1	DIV	18	24QFN
HT32F50230			32KB	4KB								19 23	24SSOP 28SSOP
HT32F50231			32KB	4KB		BFTM×2 PWM×2 GPTM×1 MCTM×1	16	3		USART×1 UART×2 SPI×2 I²C×2	CRC DIV	22 26 38	28SOP 33QFN 46QFN
HT32F50241			64KB	8KB								36 40	44LQFP 48LQFP

Cortex-M0+ 32-Bit 5V USB MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	Timers*1	Cap.*2 or PWM*3	RTC	USB*5	Interface	Others	I/O	Package
HT32F50343	60MHz	2.5V ~ 5.5V	64KB	12KB	6CH	1 Msps 12-bit×12	BFTM×2 SCTM×2 8-PWM×3 GPTM×1	30	√	√	UART×2 SPI×2 I²C×2 SLED×8*7	CRC DIV	23 35 37 51	32QFN 46QFN 48LQFP 64LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, 8-PWM: 8 Output channel PWM Timer, GPTM: General-Purpose Timers, MCTM: Motor Control Timer.
2. Cap.: Input Capture.
3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.
4. SCI: ISO7816-3 Smart Card Interface.
5. USB 2.0 Full Speed device.
6. EBI: External Bus Interface for NOR Flash / SRAM / LCD.
7. SLED: Strip LED Controller.

32-Bit Flash MCU

Cortex-M0+ 32-Bit Music Synthesizer MCU

Part No.	Max. Freq.	VDD	Flash	Ext. Flash	SRAM	PDMA	Audio D/A	ADC	Timers*1	I²S	RTC	USB*5	MIDI Engine*6	Voice	Sound Effect	Interface	I/O	Package
HT32F0006	48MHz	2.0V~ 3.6V	128KB	SPI	16KB	6CH	16-bit ×2	1Msps 12-bit×16	BFTM×2 SCTM×4 GPTM×1	√	√	√	√	SB Coding	Echo	USART×1 UART×1 SPI×1 QSPI×1 I²C×1	52	48/64LQFP

Cortex-M0+ 32-Bit Data Bridge MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	Timers*1	Cap.*2 or PWM	RTC	USB*5	Interface	Others	I/O	Package
HT32F0008	60MHz	1.65V~3.6V	64KB	16KB	6CH	BFTM×2 PWM×2 GPTM×1	12	√	√	USART×1 UART×1 SPI×1 I²C×1	AES CRC DIV	19 28 40 42	24QFN 33QFN 46QFN 48LQFP

Cortex-M0+ 32-Bit BLDC MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	OPA	Timer*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	Interface	Others	I/O	Package
HT32F65230	60MHz	2.5V~ 5.5V	32KB	4KB	6CH	1 Msps×2 12-bit×10	3	2	BFTM×2 SCTM×4 GPTM×1 MCTM×1	12	3	√	USART×1 UART×1 SPI×1 I²C×1	CRC DIV	40	48LQFP
HT32F65240			64KB	8KB												

24-Bit A/D Cortex-M0+ 32-Bit MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timers*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	Interface	Others	I/O	Package
HT32F59041	20MHz	2.5V~ 5.5V	64KB	8KB	SAR ADC 1Msps 12-bit×12	Delta Sigma ADC 24-bit×4	BFTM×2 PWM×2 GPTM×1 MCTM×1	16	3	√	USART×1 UART×2 SPI×1 I²C×1	CRC DIV	30	48LQFP

24-Bit A/D Cortex-M0+ 32-Bit LCD MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	ADC		Timers*1	Cap.*2 or PWM	RTC	SCI*4	USB*5	LCD	Inter-face	Others	I/O	Package
HT32F59741	60MHz	1.65V~ 3.6V	64KB	8KB	SAR ADC 1Msps 12-bit×10	Delta Sigma ADC 24-bit×4	BFTM×2 PWM×2 GPTM×1	12	√	1	√	19×4 ~ 15×8	USART×1 UART×2 SPI×1 I²C×1	CRC DIV	43	64LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, 8-PWM: 8 Output channel PWM Timer, GPTM: General-Purpose Timers, MCTM: Motor Control Timer.
2. Cap.: Input Capture.
3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.
4. SCI: ISO7816-3 Smart Card Interface.
5. USB 2.0 Full Speed device.
6. 32-CH Music Synthesis Engine.

32-Bit Flash MCU

Cortex-M3 32-Bit MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	SCI*4	USB*5	EBI*6	I²S	Inter-face	Others	I/O	Package
HT32F1653	72MHz	2.7V ~ 3.6V	32KB	8KB	8CH	1 Msps 12-bit ×12	2	BFTM×2 GPTM×2 MCTM×2	16	6	√	1	√	√	√	USART×2 UART×2 SPI×2 I²C×2	CRC	37	48LQFP
HT32F1654			64KB	16KB														51	64LQFP
HT32F12345	96MHz	2.0V ~ 3.6V	64KB	16KB	12CH	1 Msps 12-bit ×12	2	BFTM×2 GPTM×2 MCTM×2	16	6	√	—	√	√	√	SDIO×1 USART×2 UART×2 SPI×2 I²C×2	CRC	37 37 51	46QFN 48LQFP 64LQFP
HT32F12365	96MHz	2.0V ~ 3.6V	256KB	64KB	12CH	1 Msps 12-bit ×16	2	BFTM×2 GPTM×2 MCTM×2	16	6	√	2	√	√	√	SDIO×1 USART×2 UART×2 SPI×2 I²C×2	AES CRC	37 37 51 80	46QFN 48LQFP 64LQFP 100LQFP
HT32F12366			256KB	128KB															
HT32F12364	72MHz	1.65V ~ 3.6V	256KB	128KB	6CH	1 Msps 12-bit ×8	—	BFTM×2 SCTM×2 PWM×1 GPTM×1	10	—	√	1	√	√	—	USART×1 UART×2 SPI×2 I²C×2	AES CRC	32 38 52	40QFN 48LQFP 64LQFP

Cortex-M3 32-Bit Fingerprint MCU

Part No.	Max. Freq.	VDD	Flash	SRAM	PDMA	ADC	CMP	Timers*1	Cap.*2 or PWM	Cpm. PWM*3	RTC	SCI*4	USB*5	EBI*6	CSIF *7	Inter-face	Others	I/O	Package
HT32F22366	96MHz	2.0V ~ 3.6V	256KB	128KB	12CH	1 Msps 12-bit ×16	2	BFTM×2 GPTM×2 MCTM×2	16	6	√	2	√	√	√	SDIO×1 USART×2 UART×2 SPI×2 I²C×2 I²S×1	AES CRC	37 37 51 80	46QFN 48LQFP 64LQFP 100LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, GPTM: General-Purpose Timers, MCTM: Motor Control Timer.
2. Cap.: Input Capture.
3. Cpm. PWM: Complementary PWM for 3-phase motor control or inverter application.
4. SCI: ISO7816-3 Smart Card Interface.
5. USB 2.0 Full Speed device.
6. EBI: External Bus Interface for NOR Flash / SRAM / LCD.
7. CSIF: CMOS Sensor Interface.

8-Bit Flash MCU

Small Package Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	PWM	Comp-arator	Stack	Package
HT68F0017	8MHz	1.8V~5.5V	8MHz or 32kHz	0.5K×12	16×8	—	8	—	8-bit×1	—	—	2	8/10SOP
HT66F302	4MHz 8MHz	1.8V~5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	8	12-bit×4	10-bit STM×1 10-bit PTM×1	—	—	2	8/10SOP
HT68F002	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	8	—	10-bit STM×1	—	—	2	8SOP, 10MSOP
HT66F0021		1.8V~5.5V				32×14#	6	10-bit×4	8-bit×1	8-bit×1			8SOP
HT66F002		2.2V~5.5V				32×8	8	12-bit×4	10-bit STM×1	—			8SOP, 10MSOP
HT68F0025				2K×14				—				4	8/10SOP
HT66F0025								12-bit×4					
HT66F007	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	2K×16	160×8	512×8	8	12-bit×5	10-bit CTM×2 16-bit STM×1	—	1	8	8DIP/SOP 10MSOP
HT66F008	4MHz 8MHz 12MHz	2.2V~5.5V	400kHz~20MHz or 32kHz	4K×16	256×8	1024×8	8	12-bit×5	10-bit CTM×2 16-bit STM×1	—	1	8	8DIP/SOP 10MSOP

Note: # Emulated EEPROM.

Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	PWM	SCOM	Stack	Package
HT68F003	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	14	—	10-bit STM×1 10-bit PTM×1	—	—	2	16NSOP
HT66F0031		1.8V~5.5V				32×14#	14	10-bit×4	8-bit×1	8-bit×1			
HT66F003		2.2V~5.5V				32×8	14	12-bit×4	10-bit STM×1 10-bit PTM×1	—			
HT66F004	8MHz	2.2V~5.5V	8MHz or 32kHz	2K×15	96×8	32×8	18	12-bit×8	10-bit PTM×2	—	4	4	16NSOP 20DIP/SOP/SSOP/NSOP
HT66F0041		1.8V~5.5V		2K×14	64×8	32×14#		10-bit×4	8-bit×1	8-bit×1	—		16/20NSOP, 20SSOP

Note: # Emulated EEPROM.

Flash MCU with High Current Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	High Current I/O	Timer	PWM	Stack	Package
HT68F0036	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14#	13	7	8-bit×1	8-bit×1	2	16NSOP

Note: # Emulated EEPROM.

8-Bit Flash MCU

A/D Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer	Comp-arator	SCOM/ SSEG	High Current LED Driver	Inter-face	Stack	Package
HT66F017	8MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	2K×16	128×8	64×8	14	—	12-bit ×4	16-bit CTM×1 16-bit STM×1	1	—	—	—	8	16NSOP
HT66F0172	8MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	2K×16	128×8	—	18	—	12-bit ×8	10-bit PTM×2	—	—	—	—	8	20SOP/SSOP
HT66F0174						64×8		√								
HT66F0175	8MHz 12MHz 16MHz						22					SCOM×6 SSEG×14	22	SPI/I²C×1		20SOP/SSOP 24SOP/SSOP
HT66F0176														SPI/I²C×1 UART×1		16/20NSOP 24SOP/SSOP
HT66F0181	8MHz	1.8V~ 5.5V	8MHz or 32kHz	4K×15	128×8	32×15#	18	—	10-bit ×8	10-bit PTM×1 10-bit STM×1	—	—	18	—	6	16/20NSOP 20SOP/SSOP
HT66F018	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	4K×16	192×8	64×8	18	√	12-bit ×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	1		—		8	16/20NSOP 20SOP/SSOP 20QFN
HT66F0184	8MHz		8MHz	4K×15		32×15#	26	—	10-bit ×4	10-bit STM×1 10-bit CTM×2	—	SCOM×6 SSEG×18			6	24/28SOP/SSOP
HT66F0185	8MHz 12MHz 16MHz		400kHz~ 20MHz or 32kHz	4K×16	256×8	128×8	26	√	12-bit ×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	1	SCOM×6 SSEG×18	26	SPI/I²C×1 UART×1	8	24SOP/SSOP 28SOP/SSOP
HT66F0186				4K×16	1024×8	4096×8	26	√								20NSOP 24/28SOP/SSOP
HT66F019	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	18	√	12-bit ×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	1	—	18	SPI/I²C×1 UART×1	8	20NSOP
HT66F0195					512×8	128×8	26		12-bit ×12			SCOM×6 SSEG×18	26			24/28SOP/SSOP
HT66F3185	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	128×8	26	√	12-bit ×12	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	1	(SCOM/ SSEG)×22 SSEG×4	26	SPI/I²C×1 UART×1	8	20SOP 24/28SOP/SSOP 24/28QFN
HT66F3195				8K×16	512×8											
HT66F489	8MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	384×8	64×8	26	√	12-bit ×8	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	—	SCOM×6 SSEG×20	26	SPI/I²C×1 UART×1	8	28SOP/SSOP

Note: # Emulated EEPROM.
SCOM/SSEG: Software Control LCD Common/Segment.

A/D Flash MCU with High Accuracy / Low Current LIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	Stack	Package
HT66F2630	2/4/8MHz	1.8V~ 5.5V	400kHz~8MHz or 32kHz	2K×16	128×8	64×8	18	12-bit ×4	16-bit PTM×1	8	8SOP, 10MSOP 16SSOP, 16/20NSOP

Advanced A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	SCOM	RTC	A/D	Timer	Comp-arator	CRC	Interface	Stack	Package
HT66F2350	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	768×8	256×8	44	4	√	12-bit ×12	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×2	16	48LQFP
HT66F2360	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1536×8	256×8	58	4	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×2	16	48/64LQFP
HT66F2362		1.8V~ 5.5V			2048×8	1024×8	44									28SOP, 32QFN 44/48LQFP
HT66F2370	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	3072×8	512×8	58	4	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×3	16	48/64LQFP
HT66F2390	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	64K×16	4096×8	1024×8	58	4	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×3	16	48/64LQFP

Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

High Supply Voltage Flash MCU

12V High Current Driver A/D Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	HVIO	Timer	A/D	LDO Output Voltage	OVP	Inter-face	Stack	Package
HT66F2730	8/12/16MHz	7.5V~ 12V	4.5V~ 5.5V	32kHz~ 16MHz	2K×16	128×8	64×8	10	10	10-bit STM×1 10-bit PTM×1	12-bit ×4	5.0V	—	SPI/I²C/ UART×1	4	16NSOP-EP 20NSOP 24SOP/SSOP-EP
HT66F2740					4K×16	256×8	128×8	14		10-bit STM×1 10-bit PTM×1 10-bit CTM×1	12-bit ×8		1		8	16NSOP-EP 24SSOP-EP 24/28SOP

8-Bit LCD Display Flash MCU

A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	RTC	A/D	IAP	Comp-arator	Inter-face	Stack	Package
HT67F30	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	2K×15	128×8	64×8	32	20×4 21×3	10-bit CTM×1 10-bit ETM×1	√	12-bit ×8	—	2	SPI/I²C×1 SPIA×1	4	48LQFP
HT67F40	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×15	256×8	128×8	44	32×4 33×3	10-bit CTM×1 10-bit ETM×1 16-bit STM×1	√	12-bit ×8	—	2	SPI/I²C×1 SPIA×1	8	48/64LQFP
HT67F50	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	384×8	256×8	52	40×4 41×3	10-bit CTM×2 10-bit ETM×1 16-bit STM×1	√	12-bit ×8	—	2	SPI/I²C×1 SPIA×1	8	48/64/80 LQFP
HT67F60A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	128×8	47	56×4	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	√	12-bit ×12	√	2	SPI/I²C×1 SPIA×1	16	48/64/80 LQFP
HT67F70A	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	2048×8	128×8	47	56×4	10-bit CTM×2 10-bit ETM×1 16-bit STM×3	√	12-bit ×12	√	2	SPI/I²C×1 SPIA×1	16	48/64/80 LQFP
HT67F86A	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	48K×16	2304×8	128×8	20	64×16	10-bit PTM×3 16-bit STM×1	√	12-bit ×12	√	—	SPI/I²C×1 SPIA×1 UART×1	16	Dice

A/D Flash MCU with LCD Driver & High Accuracy HIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Timer	Interface	Stack	Package
HT67F2432	4MHz	1.8V~ 5.5V	4MHz or 32kHz	2K×16	128×8	32×16#	26	20×4	√	10-bit ×5	9-bit Timer×1 10-bit CTM×1	UART×1	6	24/28SOP/SSOP

Note: # Emulated EEPROM.

Advanced A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Timer	Comp-arator	CRC	Inter-face	Stack	Package
HT67F2350	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	768×8	256×8	57	46×4 44×6 42×8	√	12-bit ×12	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×2	16	48/64LQFP
HT67F2360	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1536×8	256×8	71	56×4 54×6 52×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×2	16	64/80LQFP
HT67F2362		1.8V~ 5.5V			2048×8	1024×8	57	46×4 44×6 42×8								48/64LQFP
HT67F2370	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	3072×8	512×8	71	56×4 54×6 52×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×3	16	64/80LQFP
HT67F2390	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	64K×16	4096×8	1024×8	71	56×4 54×6 52×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	√	SPI/I²C×1 SPIA×1 UART×3	16	64/80LQFP

Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

8-Bit LCD / LED Flash MCU

A/D Flash MCU with six Timer & High Current LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer	SCOM	High Current LED Driver	Inter-face	Stack	Package
HT66F0042	8MHz 12MHz 16MHz	2.2V~ 5.5V	32kHz~ 16MHz	2K×15	96×8	32×8	22	√	12-bit ×8	10-bit PTM×4 10-bit CTM×2	4	22	SPI/I²C×1	6	20SOP/SSOP 24SOP/SSOP
HT66F0082				4K×16	128×8	64×8	26					26			24SOP/SSOP 28SOP/SSOP

Note: The HT66F0042/0082 devices include 6 Timer Modules and are suitable for use in products requiring multiple PWM functions such as RGB lighting.

RGB LED Controller Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer	Multiple RGB LED	Constant Current	Interface	Stack	Package
HT45F0060	8MHz	2.2V~5.5V	8MHz	1K×14	64×8	8	10-bit CTM×3	—	3	Cascading Transceiver	2	8SOP/DFN 10SOP
HT45F0062	8MHz	2.2V~5.5V	8MHz	2K×16	128×8	14	10-bit CTM×1	√	12	I²C×1, Cascading Transceiver	4	16NSOP-EP 16QFN
HT45F0063	8MHz	2.2V~5.5V	8MHz	4K×16	256×8	20	10-bit CTM×1	√	15	I²C×1, Cascading Transceiver	4	24SSOP-EP 24QFN

A/D Flash MCU with LCD & High Current LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	High Current LED Driver	Timer	RTC	A/D	Inter-face	Stack	Package
HT67F489	8MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	42	20×8 20×4	8	10-bit CTM×3 10-bit PTM×1	√	12-bit ×10	UART×1	8	44LQFP
HT67F4892					384×8		50	32×4/32×8 28×4/28×8					SPI/I²C×1 UART×1		48/52LQFP

1.8V~5.5V Flash MCU

1.8V~5.5V I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer	Stack	Package
HT68F0017	8MHz	1.8V~5.5V	8MHz or 32kHz	0.5K×12	16×8	8	8-bit×1	2	8/10SOP

1.8V~5.5V Advanced A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer	SCOM/ SSEG	Comp-arator	High Current LED Driver	Inter-face	Stack	Package
HT66F317	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	2K×16	128×8	64×8	22	√	12-bit ×8	10-bit PTM×2	SCOM×4	—	22	—	8	16NSOP 20/24SOP/SSOP
HT66F318	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	192×8	64×8	26	√	12-bit ×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	SCOM×4	1	26	I²C×1 UART×1	8	20/24/28SOP/SSOP
HT66F319	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	26	√	12-bit ×8	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	SCOM×4	1	26	I²C×1 UART×1	8	16NSOP 20/24/28SOP/SSOP
HT66F3185	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	128×8	26	√	12-bit ×12	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	(SCOM/ SSEG)×22 SSEG×4	1	26	SPI/I²C×1 UART×1	8	20SOP 24SOP/SSOP/QFN 28SOP/SSOP/QFN
HT66F3195				8K×16	512×8											

Note: SCOM/SSEG: Software Control LCD Common/Segment.

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	SCOM	RTC	A/D	Timer	Comp-arator	Interface	CRC	Stack	Package
HT66F2362	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	1024×8	44	4	√	12-bit ×16	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×2	√	16	28SOP, 32QFN 44/48LQFP

Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

1.8V~5.5V A/D Flash MCU with EEPROM

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	PWM	High Current LED Driver	Stack	Package
HT66F302	4/8MHz	1.8V~5.5V	4MHz, 8MHz or 32kHz	1K×14	64×8	32×8	8	12-bit×4	10-bit STM×1 10-bit PTM×1	—	—	2	8/10SOP
HT66F303							14						16NSOP
HT66F0181	8MHz	1.8V~5.5V	8MHz or 32kHz	4K×15	128×8	32×15#	18	10-bit×8	10-bit PTM×1 10-bit STM×1	—	18	6	16/20NSOP 20SSOP/SOP
HT66F0021	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14#	6	10-bit×4	8-bit×1	8-bit×1	—	2	8SOP
HT66F0031	8MHz	1.8V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14#	14	10-bit×4	8-bit×1	8-bit×1	—	2	16NSOP
HT66F0041	8MHz	1.8V~5.5V	8MHz or 32kHz	2K×14	64×8	32×14#	18	10-bit×4	8-bit×1	8-bit×1	—	4	16/20NSOP 20SSOP

Note: # Emulated EEPROM.

1.8V~5.5V Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	RTC	A/D	IAP	Power Switch	Inter-face	Stack	Package
HT69F340	4/8/12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	64×8	39	24×4 25×3	10-bit PTM×1 10-bit CTM×1	√	—	√	—	SPI/I²C×1	8	48LQFP
HT69F3742	2/4/8MHz	1.8V~ 5.5V	400kHz~ 8MHz or 32kHz	4K×16	128×8	128×8	9	23×4 24×3	10-bit STM×1	—	—	—	√	—	4	46QFN
HT69F350	4/8/12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	512×8	64×8	55	36×4 37×3	10-bit PTM×1 10-bit CTM×1 16-bit STM×1	√	—	√	—	SPI/I²C×1	8	48/64LQFP
HT69F360	4/8/12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	128×8	63	48×4 49×3	10-bit PTM×2 10-bit CTM×1 16-bit STM×1	√	—	√	—	SPI/I²C×1 UART×1	8	64/80LQFP
HT67F370	4/8/12MHz	1.8V~ 5.5V	400kHz~ 20MHz or 32kHz	32K×16	2048×8	256×8	63	48×4 49×3	10-bit PTM×2 10-bit CTM×1 16-bit STM×1	√	12-bit ×12	√	—	SPI/I²C×1 UART×1	8	64/80LQFP

1.8V~5.5V Advanced A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Timer	Comp-arator	Inter-face	CRC	Stack	Package
HT67F2362	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	1024×8	57	46×4 44×6 42×8	√	12-bit ×16	10-bit PTM×6 16-bit PTM×2 16-bit STM×3	2	SPI/I²C×1 SPIA×1 UART×2	√	16	48/64LQFP

Note: These devices are European standard IEC 60730 and U.S. standard UL 60730 certified.

1.8V~5.5V A/D Flash MCU with LCD Driver & High Accuracy HIRC

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Timer	Interface	Stack	Package
HT67F2432	4MHz	1.8V~ 5.5V	4MHz or 32kHz	2K×16	128×8	32×16#	26	20×4	√	10-bit ×5	9-bit Timer×1 10-bit CTM×1	UART×1	6	24/28SOP/SSOP

Note: # Emulated EEPROM.

1.8V~5.5V Flash MCU

1.8V~5.5V Ultra-Low Power Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU#	I/O	LCD	RTC	A/D	Timer	Interface	Stack	Package
HT66F2560	1/2/4/8/12MHz	1.8V~5.5V	400kHz~16MHz or 32kHz	16K×16	2048×8	256×8	16-bit	42	SCOM ×4	√	12-bit ×8	16-bit PTM×2 16-bit STM×3	SPI/I²C×1 SPIA×1 UART×2	16	48LQFP
HT69F2562	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	—	19	32×4	√	—	10-bit CTM×2 16-bit STM×1	SPI×1 SPI/I²C/UART×1	16	64LQFP

Note: # MDU: Multiplier Divider Unit.
The power consumption of the RTC on standby current is less than 200nA at 3V.

1.8V~5.5V Ultra-Low Power Flash MCU with EPD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	EPD#	RTC	A/D	Timer	Interface	Stack	Package
HT67F2567	4/8/12MHz	1.8V~5.5V	400kHz~12MHz or 32kHz	16K×16	2304×8	128×8	19	SEG×64 COM×1 BG×1	√	12-bit ×8	10-bit CTM×2 16-bit STM×1	SPI×1 SPI/I²C/UART×1	16	100LQFP
HT67F2567G														Gold Bump

Note: # EPD: Electronic Paper Displays.
The power consumption of the RTC on standby current is less than 200nA at 3V.

USB Interface Flash MCU

I/O Flash USB MCU (USB 2.0 Low Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer	End-points	LDO Driving Current	PWM	Interface	Stack	Package
HT68FB240	12MHz	2.2V~5.5V	32kHz~16MHz	4K×16	160×8	34	10-bit CTM×2	3	20mA	3	SPI/I²C×1	8	48LQFP

I/O Flash USB MCU (USB 2.0 Full Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer	End-points	LDO Driving Current	I/O VDD Option	Interface	Stack	Package
HT68FB550	12MHz	2.2V~5.5V	32kHz~16MHz	8K×16	512×8	25	10-bit CTM×2 10-bit STM×1 16-bit STM×1	6	70mA	√	SPI/I²C×1 SPIA×1	8	24/28SSOP 48LQFP
HT68FB560	12MHz	2.2V~5.5V	32kHz~16MHz	16K×16	768×8	37	10-bit CTM×2 10-bit STM×1 16-bit STM×1	8	70mA	√	SPI/I²C×1 SPIA×1	12	24/28SSOP 48LQFP

A/D Flash USB MCU (USB 2.0 Full Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	A/D	Timer	MDU#	End-points	LDO Driving Current	I/O VDD Option	Comp-arator	Inter-face	Stack	Package
HT66FB540	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	4K×16	512×8	—	25	√	12-bit ×8	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	4	70mA	√	2	SPI/I²C×1 SPIA×1	8	28SSOP 48LQFP
HT66FB542	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	—	17	—	12-bit ×4	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	4	70mA	√	1	SPI/I²C×1 SPIA×1	8	24SSOP
HT66FB550	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	768×8	—	37	√	12-bit ×16	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	6	70mA	√	2	SPI/I²C×1 SPIA×1	8	28SSOP 48LQFP
HT66FB560	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	1024×8	—	45	√	12-bit ×16	10-bit CTM×2 10-bit STM×1 16-bit STM×1	—	8	70mA	√	2	SPI/I²C×1 SPIA×1	12	48/64LQFP
HT66FB570	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	1024×8	256×8	55	√	12-bit ×24	10-bit PTM×5 16-bit STM×1	—	8	70mA	√	2	SPI/I²C×1 SPIA×1 UART×1	12	48/64LQFP
HT66FB582	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	48K×16	1024×8	16K×8	41	√	12-bit ×16	10-bit PTM×5 16-bit STM×1	16-bit	8	70mA	√	2	SPI/I²C×1 SPIA×1 UART×1	12	46QFN 48LQFP

Note: # MDU: Multiplier Divider Unit.

USB Flash RGB LED MCU (USB 2.0 Full Speed)

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	End-points	LDO Driving Current	I/O VDD Option	Inter-face	RGB LED Driver	LED PWM	Const. Current	Stack	Package
HT68FB541	12MHz	3.0V~5.5V	400kHz~16MHz or 32kHz	4K×16	256×8	64×8	18	—	16-bit×2	4	70mA	√	SPI×1	8	3×8	—	8	24SSOP
HT68FB571	12MHz	3.0V~5.5V	400kHz~16MHz or 32kHz	8K×16	512×8	64×8	41	—	16-bit×2	4	70mA	√	SPI×1	42	16×8	—	8	28SSOP 48LQFP
HT66FB572	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	8K×16	1024×8	256×8	34	12-bit ×8	10-bit PTM×3 16-bit STM×1	8	70mA	√	SPI/I²C×1 SPIA×1 UART×1	40	15×8	15	12	48/64LQFP
HT66FB574	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	16K×16	1024×8	256×8	38	12-bit ×12	10-bit PTM×3 16-bit STM×1	8	70mA	√	SPI/I²C×1 SPIA×1 UART×1	64	24×8	24	12	48/64/80 LQFP
HT66FB576	12MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	1024×8	256×8	52	12-bit ×16	10-bit PTM×3 16-bit STM×1	8	70mA	√	SPI/I²C×1 SPIA×1 UART×1	128	48×8	48	12	80LQFP 128LQFP-EP

DC Motor Flash MCU

Power Tool Controller Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	OCP	Inter-face	Level Shift	Stack	Package
HT45F3630	8MHz 32kHz	12V	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×16	64×8	32×8	12	10-bit PTM×2	12-bit×8	1	I²C×1	1	6	16SSOP

Servo Motor Flash MCU with H-Bridge Driver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	H-Bridge Driver	IAP	LDO	Stack	Package
HT45F4830	8MHz	3.5V~ 10V	3.0V	32kHz~ 8MHz	2K×16	128×8	32×8	4	10-bit PTM×1 16-bit PTM×1	12-bit ×4	600mA Min.	—	3.0V	4	8SOP-EP
HT45F4840	16MHz	6.0V~ 12V	3.3V or 5.0V	32kHz~ 16MHz	4K×16	256×8	—	8	10-bit PTM×1 16-bit STM×1 16-bit CTM×1	12-bit ×4	—	√	3.3V or 5.0V	6	10SOP 16NSOP/QFN
HT45F4842								6			√				10SOP-EP 24QFN

BLDC Motor Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	OCP	PWM	Comp-arator	OPA	Inter-face	Stack	Package
HT66FM5230	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	2K×16	256×8	32×8	18	10-bit CTM×1 10-bit STM×1 16-bit CAPTM×1 16-bit CTM×1	10-bit ×6	1	10-bit ×3	3	—	I²C×1	6	16NSOP 20SSOP
HT66FM5240	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	64×8	26	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×8	1	10-bit ×3	3	—	I²C×1 UART×1	8	20/28SSOP 24QFN
HT66FM5242	20MHz	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	—	18	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×7	1	10-bit ×3	—	—	—	8	16NSOP 20SSOP
HT66FM5440	16MHz	4.5V~ 5.5V	32kHz~ 16MHz	4K×16	384×8	—	26	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×9	1	10-bit ×3	3	2	I²C×1 UART×1	8	28SSOP

Note: HT66FM5440 is a new HT8-1T architecture MCU which takes one clock cycle to execute one instruction. It improves 4 times the CPU performance of the original HT8-4T architecture MCU which takes four clock cycles to execute one instruction.

BLDC Motor Flash MCU with Gate-Driver / Driver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	I/O	Timer	A/D	OCP	PWM	Comp-arator	Gate-Driver	LDO	Stack	Package
HT66FM5340	20MHz	6V~ 15V	4.5V~ 5.5V	32kHz~ 20MHz	4K×16	256×8	19	10-bit PTM×2 16-bit PTM×2 16-bit CAPTM×1	12-bit ×8	1	10-bit ×3	3	√	5V	8	24SSOP

Motor Driver Peripheral

H-Bridge Driver

Part No.	Supply Voltage	Max. Motor Voltage	Typ. Motor Peak Current (A)	Typ. Motor RMS Current (A)	Max. Sleep Current (μA)	Max. PWM Frequency (Hz)	# of H-Bridge	Protections	Package
HT7K1201	1.8V~6.0V	6V	1.3	0.8	0.1	200K	1	UVLO, OCP OTP, OSP	SOT23-6
HT7K1211		7.5V	2.1	1.5					8SOP-EP
HT7K1311	2.5V~5.5V	15V	3.0	2.4	1.0	200K	1	UVLO, OCP OTP, OSP	8SOP-EP
HT7K1312									8DFN
HT7K1401	2.5V~5.5V	24V	2.0	1.8	1.0	200K	1	UVLO, OCP OTP, OSP	8SOP-EP
HT7K1411			3.2	2.5					

OPA Flash MCU

Flash MCU with OPA

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	A/D	D/A	PWM	PFD	OPA	Comp-arator	Inter-face	Stack	Package
HT45F23A	910kHz 2MHz 4MHz 8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	2K×15	128×8	64×8	22	8-bit×1 16-bit×1	√	12-bit×6	12-bit ×1	8-bit ×2	√	2	2	SPI/I²C ×1	6	16NSOP 20/24SSOP
HT45F24A	910kHz 2MHz 4MHz 8MHz	2.2V~ 5.5V	400kHz~ 8MHz or 32kHz	4K×16	192×8	64×8	26	8-bit×1 16-bit×1	√	12-bit×8	12-bit ×1	8-bit ×2	√	2	2	SPI/I²C ×1	6	20/24/28SSOP

Advanced Flash MCU with OPA

Part No.	Internal Clock	Input Voltage	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	Timer	A/D	D/A	Voice D/A	Comp-arator	OPA	Inter-face	Stack	Package
HT66F4530	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	2K×16	128×8	32×8	18	√	10-bit STM×1 10-bit PTM×1	12-bit ×5	8-bit ×3	—	2	2	SPI/I²C×1	6	16NSOP 20SSOP
HT66F4540	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	4K×16	256×8	64×8	26	√	10-bit STM×1 10-bit PTM×2	12-bit ×8	8-bit ×3	—	2	2	SPI/I²C×1 UART×1	8	24/28SSOP
HT66F4550	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	8K×16	384×8	64×8	26	√	10-bit STM×2 10-bit PTM×2	12-bit ×8	8-bit ×3	16-bit ×1	2	2	SPI/I²C×1 UART×1	8	24/28SSOP
HT66F4560	2MHz 4MHz 8MHz	2.2V~ 5.5V	32kHz~ 12MHz	16K×16	512×8	128×8	46	√	10-bit STM×2 10-bit PTM×2	12-bit ×8	8-bit ×3	16-bit ×1	2	2	SPI/I²C×1 UART×1	16	28SSOP 48LQFP

Note: The MCUs internal OPA gain bandwidth are software programmable.

24-Bit A/D MCU

24-Bit A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	MDU#	RTC	IAP	OPA	Interface	Stack	Package
BH66F5232	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	2K×16	128×8	32×8	4	10-bit CTM×1	24-bit ×2	—	—	—	—	SPI/I²C×1 UART×1	4	10SOP
BH66F5233	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	2K×16	96×8	32×8	14	10-bit CTM×1	24-bit ×2	—	—	—	—	SPI/I²C×1	4	10SOP 16/20NSOP
BH66F5242	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	4K×16	256×8	64×8	14	10-bit CTM×1 16-bit PTM×1	24-bit ×12	—	—	—	1	SPI/I²C/UART×1	6	16NSOP/SSOP 20NSOP/QFN
BH66F5250	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	512×8	128×8	37	16-bit STM×1 10-bit PTM×3	24-bit ×16	16-bit	√	√	1	SPI/I²C/UART×1 SPI×1	8	48LQFP
BH66F5252	8MHz	2.2V~ 5.5V	8MHz or 32kHz	8K×16	256×8	32×8	23	10-bit CTM×1 16-bit PTM×1	24-bit ×4	—	—	—	—	SPI/I²C/UART×1	8	24/28SSOP

Note: # MDU: Multiplier Divider Unit.

Enhanced 24-Bit A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	ENOB	SCOM	Comp-arators	CRC	Interface	Stack	Package
BH66F5362	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	1024×8	32	10-bit PTM×2 16-bit PTM×2 16-bit STM×1	12-bit×9 24-bit×4	19.4 @5V	4	2	√	SPI/I²C×1 SPI×1 UART×2	16	48LQFP

BLE Beacon 24-Bit A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Frequency	Data Rate	Output Power	Stack	Package
BH66F71252	8MHz	2.2V~ 3.6V	8MHz or 32kHz	8K×16	256×8	32×8	25	10-bit CTM×1 16-bit PTM×1	24-bit ×4	2402/2426/2480 MHz	1Mbps	-10~+8 dBm	8	46QFN

24-Bit A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	A/D	RTC	IAP	MDU##	Touch Key	Interface	Stack	Package
BH67F5235	8MHz	2.2V~ 5.5V	8MHz or 32kHz	3K×16	192×8	32×16#	5	16×4	10-bit CTM×1	24-bit ×2	—	—	—	2	—	4	24/28SSOP 32QFN
BH67F5245	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	4K×16	256×8	32×8	21	17×4	10-bit CTM×1	24-bit ×4	—	—	—	4	UART×1	6	24/28SSOP
BH67F5250	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	512×8	128×8	46	28×4 26×6 24×8	10-bit PTM×3 16-bit STM×1	24-bit ×16	√	√	16-bit	—	SPI/I²C/UART×1 SPI×1	8	64LQFP
BH67F5260	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	256×8	46	42×4 40×6 38×8	10-bit PTM×3 16-bit STM×1	24-bit ×16	√	√	16-bit	—	SPI/I²C/UART×1 SPI×1	8	64/80LQFP
BH67F5270	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	2048×8	512×8	46	42×4 40×6 38×8	10-bit PTM×3 16-bit STM×1	24-bit ×16	√	√	16-bit	—	SPI/I²C/UART×1 SPI×1	16	64/80LQFP

Note: # Emulated EEPROM.
MDU: Multiplier Divider Unit.

Enhanced 24-Bit A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	A/D	ENOB	RTC	CRC	Comp-arators	Interface	Stack	Package
BH67F5362	8MHz 12MHz 16MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	1024×8	45	36×4 34×6 32×8	10-bit PTM×5 16-bit PTM×2 16-bit STM×3	12-bit×14 24-bit×4	19.4 @5V	√	√	2	SPI/I²C×1 SPI×1 UART×2	16	64LQFP

24-Bit A/D Peripheral

Enhanced 24-Bit A/D Peripheral

Part No.	Internal Clock	VDD	A/D	ENOB	Data Rate	PGA	Interface	Package
BH45B1225	4.91MHz	2.4V~5.5V	24-bit×4	19.4@5V	5Hz~1.6kHz	1~128	I²C×1	8SOP, 16NSOP

Health Care Flash MCU

Ear Thermometer Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	LCD	Timer	A/D	OPA	Inter-face	Stack	Package
BH67F2742	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	4K×16	256×8	32×8	21	—	17×4 15×6	10-bit CTM×1	24-bit ×8	1	SPI/I²C/UART×1	6	28SSOP 32QFN
BH67F2752	8MHz	2.2V~ 5.5V	8MHz or 32kHz	8K×16	384×8	128×8	17	—	32×4 30×6	10-bit CTM×2	24-bit ×8	2	SPI×1 UART×1	6	48/64LQFP
BH67F2762	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	16K×16	1024×8	256×8	38	√	39×4 37×6	10-bit CTM×2 16-bit PTM×1	24-bit ×8	2	SPI/I²C/UART×1	8	48/64LQFP
HT67F5652	4.91MHz 9.83MHz 14.74MHz	2.2V~ 5.5V	400kHz~ 20MHz or 32kHz	8K×16	512×8	128×8	32	√	40×4	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	24-bit ×8	1	SPI/I²C×1 UART×1	8	64/80LQFP

Glucose Meter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	MDU#	Timer	RTC	LCD	A/D	Inter-face	OPA	D/A	Audio D/A	Stack	Package
HT45F67	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	512×8	—	59	√	—	10-bit CTM×2 16-bit STM×1 10-bit ETM×1	√	32×4 30×6	12-bit ×8	SPI/I²C×1 SPIA×1 UART×1	2	10-bit ×1	16-bit ×1	12	64/80 LQFP
BH45F68	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	1024×8	64×8	57	√	—	10-bit CTM×2 16-bit STM×1	√	32×4 30×6 28×8	12-bit ×10	SPI/I²C/ UART×1	2	12-bit ×1	—	12	64/80 LQFP
BH66F2470	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	512×8	64×8	39	√	16-bit	10-bit PTM×3 16-bit STM×1	√	—	12-bit ×4	SPI/I²C×1 SPIA×1 UART×2	1	10-bit ×1	—	8	48LQFP
BH67F2470	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	768×8	64×8	34	√	16-bit	10-bit PTM×3 16-bit STM×1	√	48×4 46×6 44×8	12-bit ×4	SPI/I²C×1 SPIA×1 UART×2	1	10-bit ×1	—	8	64/80 LQFP
BH67F2480	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	48K×16	1024×8	64×8	46	√	16-bit	10-bit PTM×3 16-bit STM×1	√	48×4 46×6 44×8	12-bit ×6	SPI/I²C×1 SPIA×1 UART×2	2	12-bit ×1	—	12	64/80 LQFP

Note: # MDU: Multiplier Divider Unit.

AC Impedance and Electrochemical Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	MDU#	Timer	RTC	LCD	A/D	Inter-face	OPA	Phase Detect	D/A	Stack	Package
BH67F2485	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	48K×16	4096×8	128×8	44	√	16-bit	10-bit PTM×3 16-bit STM×1	√	36×4 34×6 32×8	24-bit ×6	SPI/I²C×1 SPIA×1 UART×2	4	√	12-bit ×2	12	64/80LQFP

Note: # MDU: Multiplier Divider Unit.

Body Fat Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	MDU#	Timer	RTC	LCD	A/D	Inter-face	Electrode	Stack	Package
BH66F2632	8MHz	2.2V~ 5.5V	8MHz or 32kHz	3K×16	256×8	32×8	9	—	—	10-bit CTM×1	—	—	24-bit ×2	SPI/I²C/ UART×1	4	6	24QFN
BH66F2650	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	28	√	16-bit	10-bit PTM×3 16-bit STM×1	√	—	24-bit ×4	SPI/I²C×1 UART×1	8	8	48LQFP
BH66F2652	8MHz	2.2V~ 5.5V	8MHz or 32kHz	8K×16	384×8	32×8	17	—	—	10-bit CTM×1	—	—	24-bit ×4	SPI×1 UART×1	4	8	32QFN
BH66F2652-2							14										28SSOP
BH66F2660	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	1024×8	256×8	28	√	16-bit	10-bit PTM×3 16-bit STM×1	√	—	24-bit ×4	SPI/I²C×1 UART×1	8	8	48LQFP
BH66F2662	8MHz	2.2V~ 5.5V	8MHz or 32kHz	16K×16	512×8	64×8	17	—	—	10-bit CTM×1 10-bit STM×1	—	—	24-bit ×4	SPI×1 UART×1	4	8	32QFN
BH66F2662-2							14										28SSOP
BH67F2662	8MHz	2.2V~ 5.5V	8MHz or 32kHz	16K×16	512×8	64×8	12	—	—	10-bit CTM×1 10-bit STM×1	—	16×4 14×6	24-bit ×4	SPI×1 UART×1	4	8	48LQFP

Note: # MDU: Multiplier Divider Unit.

BLE Beacon Body Fat Measurement Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Frequency	Data Rate	Output Power	Stack	Package
BH66F71652	8MHz	2.2V~ 3.6V	8MHz or 32kHz	8K×16	384×8	32×8	17	10-bit CTM×1	24-bit ×4	2402/2426/2480 MHz	1Mbps	-10~+8 dBm	8	46QFN
BH66F71662				16K×16	512×8	64×8		10-bit CTM×1 10-bit STM×1						

Health Care Flash MCU

R-Type Blood Pressure Meter Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	IAP	MDU#	Timer	RTC	LCD	A/D	Inter-face	PGA	Const. Current	Audio PWM	Stack	Package
BH66F2232	4MHz 8MHz 12MHz	2.2V~ 5.5V	4MHz 8MHz 12MHz or 32kHz	2K×16	128×8	32×8	4	√	—	10-bit PTM×1	—	—	12-bit ×6	SPI/I²C×1 UART×1	3	1	—	4	16NSOP 16QFN
BH66F2260	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	512×8	64×8	35	√	16-bit	10-bit PTM×3 16-bit STM×1	√	—	12-bit ×4	SPI/I²C×1 SPIA×1 UART×1	3	1	—	8	48LQFP
BH67F2260	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	512×8	64×8	32	√	16-bit	10-bit PTM×3 16-bit STM×1	√	32×4 30×6 28×8	12-bit ×4	SPI/I²C×1 SPIA×1 UART×1	3	1	—	8	64LQFP
BH67F2261	8MHz	2.2V~ 5.5V	8MHz or 32kHz	12K×16	512×8	32×8	32	√	—	10-bit PTM×1 16-bit STM×1	√	31×4 29×6	12-bit ×4	—	3	1	—	8	64LQFP
BH67F2262	8MHz 12MHz 16MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	512×8	64×8	52	√	16-bit	10-bit PTM×3 16-bit STM×1	√	45×4 43×6 41×8	12-bit ×4	SPI/I²C/ UART×1, SPIA×1	3	1	√	8	64/80LQFP
BH67F2270	4MHz 8MHz 12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	1024×8	64×8	43	√	16-bit	10-bit PTM×3 16-bit STM×1	√	46×4 44×6 42×8	12-bit ×4	SPI/I²C×1 SPIA×1 UART×2	3	1	—	8	64/80LQFP

Note: # MDU: Multiplier Divider Unit.
The BH67F2262 device uses the PWM function together with the external SPI flash to implement the voice playing function.

Measurement Flash MCU

Ultrasonic Distance Measurement Flash MCU

Part No.	VDD	VIN	System Clock	Program Memory	Data Memory	I/O	Timer	A/D	OPA	SCF	IAP	AEP	Interface	Stack	Package
HT45F39	—	8V~16V	16MHz	2K×16	160×8	11	10-bit CTM×2	8-bit×8	2	1	√	1	BCU	4	16NSOP
HT45F391	4.5V~5.5V	—													

Note: 1. The HT45F39 device power, VDD, is internally regulated by an integrated shunt regulator.
2. An external resistor should be serially connected between the external power supply VIN and MCU VDD pins.

Proximity Sensing Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	IR LED Driver	IR Receiver	Battery Voltage Detector	DC Motor Driver	Inter-face	Stack	Package
BS45F3232	8MHz	—	2.2V~ 5.5V	8MHz or 32kHz	2K×14	64×8	32×8	11	10-bit STM×1	12-bit ×8	√	√	—	—	SPI/I²C/ UART×1	4	8SOP 16NSOP 16QFN
BS45F3235														√			24SSOP
HT45F3230	8MHz	3V~ 12V	2.2V~ 5.5V	8MHz	2K×16	128×8	64×8	16	10-bit PTM×1 10-bit CTM×1	12-bit ×8	√	√	√	√	—	8	16NSOP 24SSOP

R to F MCU

Ultra-Low Voltage R to F Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	R to F	LVD	Stack	Package
BH67F2132	1.1V~2.2V	32kHz 64kHz 128kHz	2K×16	128×8	128×8	24	21×3 22×2	10-bit CTM×1	2CH	1.15V	4	48LQFP

R to F Mask MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer	R to F	BZ/$\overline{BZ}$	Stack	Package
HT47C07L	1.2V~2.2V	32kHz~128kHz	1K×16	48×8	18	20×2, 19×3	16-bit×1	1CH	1	4	48LQFP
HT47C08L	1.2V~2.2V	32kHz~128kHz	2K×16	96×8	21	21×3	16-bit×1	2CH	1	4	48LQFP

Note: R to F: Resistance to Frequency.
These devices are only available in mask versions.

Security & Safety MCU

Shock Detector Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	D/A	Comp-arator	PGA/Gain	Stack	Package
HT45F56	8MHz	2.2V~5.5V	8MHz or 32kHz	1K×14	32×8	32×8	6	10-bit CTM×1	6-bit×1	1	1~1000	2	8SOP

PIR & Microwave Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	OPA	Interface	Stack	Package
BA45F6622	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14#	6	10-bit STM×1	10-bit×2	2	—	4	16NSOP/QFN
BA45F6630	2.2V~5.5V	2/4/8MHz or 32kHz	2K×16	256×8	32×8	15	10-bit STM×2	12-bit×4	2	SPI/I²C/UART×1	6	24SSOP/QFN

Note: # Emulated EEPROM.

Smoke Detector Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Audio D/A	Timer	AFE	IR Driver	Interface	Stack	Package
BA45F5220	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×14#	4	10-bit ×3	—	10-bit PTM×1	√	2	—	4	8/10SOP
BA45F5240	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	13	12-bit ×4	—	10-bit PTM×1 10-bit STM×1	√	2	SPI/I²C/UART×1	8	16NSOP, 20SSOP
BA45F5240-2						11								16NSOP
BA45F5250	2.2V~5.5V	2/4/8MHz or 32kHz	8K×16	1024×8	128×8	22	12-bit ×8	16-bit ×1	10-bit PTM×1 10-bit STM×2	√	2	SPI/I²C×1 UART×1	8	16NSOP 20/24/28SSOP
BA45F5260*	2.2V~5.5V	2/4/8MHz or 32kHz	16K×16	2048×8	256×8	26	12-bit ×12	16-bit ×1	10-bit PTM×3 10-bit STM×2	√	2	SPI/I²C×1 UART×2	8	24/28SSOP 48LQFP

* Under development, available in 2Q, 2020.
Note: # Emulated EEPROM.

Smoke Detector Flash MCU with Power Line Transceiver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	AFE	IR Driver	Power Line Transceiver	Interface	Stack	Package
HT45FH23A	910kHz 2/4/8MHz	7V~42V	2.2V~5.5V	400kHz~8MHz or 32kHz	2K×15	128×8	64×8	13	12-bit ×3	8-bit×1 16-bit×1	√	—	√	—	6	20SOP
HT45FH24A					4K×16	192×8										
BA45F5542	2/4/8MHz	5.3V~42V	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	9	12-bit ×4	10-bit PTM×1 10-bit STM×1	√	2	√	SPI/I²C/UART×1	8	16NSOP 20SSOP
BA45F5542-2								7	12-bit ×3							16NSOP
BA45F5552	2/4/8MHz	5.3V~42V	2.2V~5.5V	2/4/8MHz or 32kHz	8K×16	1024×8	128×8	13	12-bit ×8	10-bit PTM×1 10-bit STM×2	√	2	√	SPI/I²C×1 UART×1	8	16NSOP 20/24SOP

Sub-1GHz RF Transceiver Smoke Detector Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	AFE	IR Driver	Band	Data Rate	Max. Output Power	Rx Current Consumption	Sensit-ivity	Stack	Package
BA45F5640	2.2V~3.6V	2/4/8MHz or 32kHz	4K×16	256×8	64×8	13	12-bit ×4	10-bit PTM×1 10-bit STM×1	√	2	315/433/470/868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	-119dBm @2Kbps	8	46QFN
BA45F5650			8K×16	1024×8	128×8	17	12-bit ×5	10-bit PTM×1 10-bit STM×2									

Fire Protection Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	LVR/LVD	Stack	Package
BA45F0082	2/4MHz	2.2V~5.5V	2/4MHz or 32kHz	2K×15	128×8	64×8	14	12-bit×8	16-bit STM×1 10-bit STM×1	√	6	16NSOP

Fire Protection Flash MCU with Power Line Transceiver

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	Power Line Transceiver	LDO	Stack	Package
BA45FH0082	2/4MHz	7V~42V	2.2V~5.5V	2/4MHz or 32kHz	2K×15	128×8	64×8	13	12-bit×8	16-bit STM×1 10-bit STM×1	√	√	6	16NSOP 20SSOP

Security & Safety MCU

CO/GAS Detector Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	CO/GAS Detector AFE	LCD Driver	Temp. Sensor	LVD	Interface	Stack	Package
BA45F0096	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	14	12-bit ×4	10-bit PTM×1 10-bit STM×1	—	—	—	—	—	2	16NSOP
BA45F6720*	2.2V~5.5V	8MHz or 32kHz	1K×14	64×8	32×8	4	10-bit ×4	10-bit PTM×1	√	—	√	—	—	4	8/10SOP
BA45F6730	2.2V~5.5V	2/4/8MHz or 32kHz	2K×16	128×8	32×8	14	12-bit ×5	10-bit PTM×1	√	—	—	√	SPI/I²C/UART×1	6	10SOP 16NSOP 20SSOP
BA45F6740*	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	128×8	22	12-bit ×8	10-bit PTM×1 10-bit STM×1	√	—	√	√	SPI/I²C/UART×1	8	16NSOP 20/24/28 SSOP
BA45F6746*	2.2V~5.5V	2/4/8MHz or 32kHz	4K×16	256×8	128×8	31	12-bit ×8	10-bit PTM×1 10-bit STM×1	√	12SEG ×4COM	√	√	SPI/I²C/UART×1	8	28SSOP 32QFN 48LQFP

* Under development, available in 2Q, 2020.

Security & Safety IC

PIR Controller

Part No.	VDD	Standby Current	ZC Off/On for Override	Flash on Mode Auto-change	Comparator Window	Effective Trigger Width	CDS Debounce Time	Triac Drive	Relay Drive	LED	Buzzer	LVD	Package
HT7610A	5V~12V	100μA	2 Times	Flash	1/16 (V_{DD}-V_{EE})	>24ms	5s	—	√	—	—	—	16DIP
HT7612B	2.7V~5.5V	19μA	2 Times	Flash	Vref×(1/2±1/6)	>24ms	<3s	√	√	√	√	√	16DIP/NSOP

Note: Operating and standby current values are typical values.

Touch Flash MCU

Touch I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	Touch Key	High Current LED Driver	Inter-face	LVR	Stack	Package
BS83A02A-4	8MHz	2.2V~5.5V	8MHz	1K×16	96×8	—	4	8-bit×1	2	—	—	2.10V	4	6DFN SOT23-6, 8SOP
BS83A04A-3	8MHz	2.7V~5.5V	8MHz	1K×16	96×8	—	8	8-bit×1	4	—	—	2.55V	4	8SOP, 10MSOP
BS83A04A-4		2.2V~5.5V										2.10V		
BS83B04A-4	8MHz	2.2V~5.5V	8MHz	2K×16	128×8	32×8	8	8-bit×1	4	—	I²C×1	2.10V	4	8SOP 10MSOP/DFN
BS83B08A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~ 16MHz	2K×16	160×8	64×8	14	8-bit×1	8	—	SPI/I²C×1	2.55V	4	16NSOP/SSOP
BS83B08A-4		2.2V~5.5V										2.10V		
BS83B12A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~ 16MHz	2K×16	288×8	64×8	18	8-bit×1	12	18	SPI/I²C×1	2.55V	4	20SOP/SSOP
BS83B12A-4		2.2V~5.5V										2.10V		
BS83B16A-3	8MHz 12MHz 16MHz	2.7V~5.5V	8MHz~ 16MHz	2K×16	288×8	64×8	22	8-bit×1	16	22	SPI/I²C×1	2.55V	4	24SOP/SSOP
BS83B16A-4		2.2V~5.5V										2.10V		

Note: "-4" V_{DD}: 2.2V~5.5V. Internal clock is 8/12/16MHz. For V_{DD}<3V internal clock is 8/12MHz.

Enhanced Touch I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	Touch Key	High Current LED Driver	Inter-face	LVR	RTC	Stack	Package
BS83A01C	8MHz	1.8V~5.5V	8MHz	512×14	32×8	—	4	—	1	—	—	1.7V	—	2	6DFN, 8SOP SOT23-6
BS83A02C	8MHz	2.2V~5.5V	8MHz	1K×16	96×8	—	4	8-bit×1	2	4	—	2.10V 2.55V 3.15V 3.80V	—	4	6DFN, 8SOP SOT23-6
BS83A04C	8MHz	1.8V~5.5V	8MHz	1K×16	128×8	32×16#	8	10-bit CTM×1	4	8	I²C×1	1.7V	—	4	8SOP, 10DFN 10MSOP
BS83B04C	2MHz 4MHz 8MHz	1.8V~5.5V	2MHz~ 8MHz	2K×16	128×8	32×8	8	10-bit CTM×1	4	8	I²C×1	1.7V 1.9V 2.55V 3.15V 3.80V	—	4	8SOP 10MSOP/DFN
BS83B08C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	2K×16	288×8	64×8	14	10-bit PTM×1	8	14	SPI/I²C×1	2.10V 2.55V 3.15V 3.80V	—	6	16NSOP/SSOP 16QFN
BS83B12C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	2K×16	512×8	64×8	18	10-bit PTM×1	12	18	SPI/I²C×1	2.10V 2.55V 3.15V 3.80V	—	6	20SOP/SSOP 20QFN
BS83B16C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	2K×16	512×8	64×8	22	10-bit PTM×1	16	22	SPI/I²C×1	2.10V 2.55V 3.15V 3.80V	—	6	24SOP/SSOP 24QFN
BS83B24C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	3K×16	512×8	128×8	26	10-bit PTM×1	24	26	SPI/I²C×1 UARTx1	2.10V 2.55V 3.15V 3.80V	√	6	28SOP/SSOP
BS83C40C	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~ 16MHz	4K×16	768×8	128×8	42	10-bit CTM×1 10-bit PTM×1	40	42	SPI/I²C×1 UARTx1	2.10V 2.55V 3.15V 3.80V	√	6	44LQFP

Note: # Emulated EEPROM.
V_{DD}: 2.2V~5.5V. Internal clock is 8/12/16MHz. For V_{DD} < 3V internal clock is 8/12MHz.

Touch Flash MCU

Touch A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Touch Key	High Current LED Driver	Inter-face	LVR	Stack	Package
BS84B06A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	3K×16	288×8	64×8	18	8-bit×1	12-bit ×4	6	18	SPI/I²C×1	2.55V	6	16NSOP, 20SOP
BS84B08A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	3K×16	288×8	64×8	22	8-bit×1	12-bit ×8	8	22	SPI/I²C×1	2.55V	6	16NSOP 20SOP/NSOP/SSOP 24SOP
BS84C12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	384×8	128×8	26	8-bit×1	12-bit ×8	12	26	SPI/I²C×1	2.55V	6	20/24/28SOP/SSOP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	A/D	Touch Key	High Current LED Driver	Inter-face	LVR/ LVD	IAP	Stack	Package
BS66F340	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	26	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	12	26	SPI/I²C×1 UART×1	√	√	8	28SSOP
BS66F350	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	40	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	20	40	SPI/I²C×1 UART×1	√	√	8	44/48LQFP
BS66F360	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	128×8	46	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	28	46	SPI/I²C×1 UART×1	√	√	12	44/48LQFP
BS66F370	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	32K×16	1536×8	128×8	60	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	36	60	SPI/I²C×1 UART×1	√	√	16	44/48/64 LQFP

Enhanced Touch A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Touch Key	High Current LED Driver	Inter-face	LVR	Stack	Package
BS84B08C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	3K×16	288×8	64×8	22	10-bit PTM×1	12-bit ×8	8	22	SPI/I²C×1	2.10V 2.55V 3.15V 3.80V	6	16NSOP/SSOP 20/24SOP/SSOP 20NSOP
BS84C12C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	26	SPI/I²C×1	2.10V 2.55V 3.15V 3.80V	6	20/24/28SOP/SSOP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	A/D	Touch Key	High Current LED Driver	Inter-face	LVR/ LVD	IAP	Stack	Package
BS66F340C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	26	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	12	26	SPI/I²C×1 UART×1	√	√	8	28SSOP
BS66F350C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	40	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	20	40	SPI/I²C×1 UART×1	√	√	8	44/48LQFP
BS66F360C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	128×8	46	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	28	46	SPI/I²C×1 UART×1	√	√	12	44/48LQFP

Touch I/O Flash MCU with LED / LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	Touch Key	High Current LED Driver	Inter-face	LVR	RTC	Stack	Package
BS82B12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	2K×16	384×8	64×8	22	16×4	10-bit CTM×1 10-bit PTM×1	12	22	I²C×1 UART×1	2.55V	—	6	20/24SOP 24QFN
BS82C16A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	64×8	26	20×4	10-bit CTM×1 10-bit PTM×1	16	26	I²C×1 UART×1	2.55V	√	6	24/28SOP 32QFN
BS82D20A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	26	20×4	10-bit CTM×1 10-bit PTM×1	20	26	I²C×1 UART×1	2.55V	√	8	28SOP 28SSOP

Touch Flash MCU

Touch A/D Flash MCU with LED / LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	A/D	Touch Key	High Current LED Driver	Inter-face	LVR	RTC	Stack	Package
BS86B12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	2K×16	384×8	64×8	22	16×4	10-bit CTM×1 10-bit PTM×2	12-bit ×8	12	22	SPI/I²C×1 UART×1	2.55V	—	6	20/24SOP
BS86C16A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	64×8	26	20×4	10-bit CTM×1 10-bit PTM×2	12-bit ×8	16	26	SPI/I²C×1 UART×1	2.55V	√	6	24/28SOP
BS86D20A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	26	20×4	10-bit CTM×1 10-bit PTM×2	12-bit ×8	20	26	SPI/I²C×1 UART×1	2.55V	√	8	24/28SOP

Enhanced Touch A/D Flash MCU with LED Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Touch Key	High Current LED Driver	Inter-face	LVR/ LVD	RTC	Stack	Package
BS86C08C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	384×8	32×8	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	8	26	I²C×1 UART×1	√	—	8	24/28SOP 24/28SSOP
BS86D12C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	512×8	64×8	26	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	26	I²C×1 UART×1	√	—	8	24/28SOP 24/28SSOP
BS86D20C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	26	10-bit CTM×1 10-bit PTM×2	12-bit ×8	20	26	I²C×1 SPI×1 UART×1	√	√	8	24/28SOP
BS86E16C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	768×8	64×8	42	10-bit CTM×1 10-bit PTM×2	12-bit ×8	16	42	I²C×1 UART×2	√	√	8	28SOP 28SSOP 44LQFP

Touch A/D Flash MCU with OPA / Comparator

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	LCD	Timer	A/D	Touch Key	OPA/ Comp-arator	High Current LED Driver	Inter-face	LVR	Stack	Package
BS87B12A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	3K×16	384×8	64×8	22	—	16×4	10-bit CTM×1 10-bit PTM×1	12-bit ×8	12	√	22	SPI/I²C×1 UART×1	2.55V	6	20NSOP 24SOP
BS87C16A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	64×8	30	√	20×4	10-bit CTM×1 10-bit PTM×2	12-bit ×8	16	√	30	SPI/I²C×1 UART×1	2.55V	6	24/28SOP 44LQFP
BS87D20A-3	8MHz 12MHz 16MHz	2.7V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	64×8	42	√	36×4	10-bit CTM×2 10-bit PTM×2	12-bit ×8	20	√	42	SPI/I²C×1 UART×1	2.55V	8	28SOP 44LQFP

Touch A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	RTC	A/D	Touch Key	IAP	LVR/ LVD	Inter-face	Stack	Package
BS67F340	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	31	24×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	16	√	√	SPI/I²C×1 UART×1	8	48LQFP
BS67F350	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	39	32×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	20	√	√	SPI/I²C×1 UART×1	8	48/64LQFP
BS67F360	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	128×8	43	40×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	28	√	√	SPI/I²C×1 UART×1	12	48/64LQFP
BS67F370	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	32K×16	1536×8	128×8	59	48×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	36	√	√	SPI/I²C×1 UART×1	16	48/64/80 LQFP

Enhanced Touch A/D Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	RTC	A/D	Touch Key	IAP	LVR/ LVD	Inter-face	Stack	Package
BS67F350C	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	43	32×4	10-bit CTM×2 16-bit STM×1 10-bit PTM×1	√	12-bit ×8	24	√	√	SPI/I²C×1 UART×1	8	48/64LQFP

Touch Flash MCU

Touch Voice A/D Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	SCOM/ SSEG	Timer	RTC	A/D	Audio D/A	Power Amp.	Touch Key	IAP	Inter-face	Stack	Package
BS66FV340	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	4K×16	512×8	128×8	39	SCOM×6 SSEG×33	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	16-bit ×1	1.5W	20	√	SPI/I²C×1 SPIA×1 UART×1	8	44/48LQFP
BS66FV350	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	8K×16	768×8	128×8	39	SCOM×6 SSEG×33	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	16-bit ×1	1.5W	24	√	SPI/I²C×1 SPIA×1 UART×1	8	44/48LQFP
BS66FV360	8MHz 12MHz 16MHz	2.2V~ 5.5V	8MHz~ 16MHz	16K×16	1024×8	256×8	39	SCOM×6 SSEG×33	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	16-bit ×1	1.5W	28	√	SPI/I²C×1 SPIA×1 UART×1	12	44/48 LQFP

Wearable Peripheral Integrated Flash MCU with Touch

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Touch Key	High Current LED Driver	Inter-face	LDO	Linear Charger CV	Linear Charger CC	DC Motor Driver	Stack	Package
BS45F5830	4MHz 8MHz 12MHz	2.2V~ 5.5V	2K×16	128×8	32×8	16	10-bit CTM×1 10-bit STM×1	12-bit ×6	4	—	I²C×1	3.3V	4.20V	40mA~ 400mA	150mA	4	24QFN
BS45F5831												3.3V	4.35V				
BS45F5832												3.0V	4.20V				
BS45F5833												3.0V	4.35V				
BS45F5840	8MHz	2.2V~ 5.5V	4K×16	256×8	64×8	18	10-bit CTM×5 10-bit STM×1	12-bit ×6	4	4	SPI/I²C×1 UART×1	3.3V	—	40mA~ 400mA	150mA	8	24QFN
BS45F5842												3.0V					

Ultrasonic Atomiser Flash MCU with Touch

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	Atomiser Processor	Touch Key	Stack	Package
BS45F3832	12MHz	2.7V~ 5.5V	12MHz or 32kHz	2K×16	64×8	32×8	8	12-bit ×2	10-bit CTM×1 10-bit PTM×1	√	2	4	8/10SOP
BS45F3833	4MHz 8MHz 12MHz	2.2V~ 5.5V	4/8/12MHz or 32kHz	2K×16	128×8	32×8	18	12-bit ×4	10-bit CTM×3 10-bit STM×1 10-bit PTM×1	√	4	4	16/20NSOP

Ultra-Low Power Touch Flash MCU

Ultra-Low Power Touch I/O Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	Touch Key	Interface	Stack	Package
BS83A02L	8MHz	1.8V~5.5V	8MHz	1K×14	64×8	—	4	8-bit×1	2	—	2	6DFN, 8SOP SOT23-6
BS83B04L	2MHz 4MHz 8MHz	1.8V~5.5V	8MHz	2K×16	128×8	32×8	8	10-bit CTM×1	4	I²C×1	4	8SOP 10DFN/MSOP

Note: The standby current is less than 150nA at 3.0V (1 Key).

Ultra-Low Power Flash MCU with LCD Driver & Touch Key

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Touch Key	Timer	Interface	Stack	Package
BS67F2563	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 12MHz or 32kHz	16K×16	2304×8	128×8	31	32×4	√	12-bit ×7	20	10-bit CTM×2 16-bit STM×1	SPI×1 SPI/I²C/UART×1	16	64LQFP

Note: The power consumption of the RTC on standby current is less than 200nA at 3V.

High Supply Voltage Touch Flash MCU

9V Touch A/D Flash MCU with HVIO

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	RTC	Timer	A/D	Touch Key	HVIO	Interface	LVR/ LVD	Stack	Package
BS86DH12C	8MHz 12MHz 16MHz	7V~ 10V	5.0V	8MHz~ 16MHz	8K×16	512×8	64×8	22	√	10-bit CTM×2 10-bit PTM×1	12-bit ×8	12	6	I²C×1 UART×1	√	8	20/28SOP 44LQFP

Touch Key IC

Touch Key

Part No.	Touch Key	VDD	Standby Current at 3V		Key Output Type	Package	Serial Interface
			One-key Wake-up	Any-key Wake-up			
BS812A-1	2-Key	2.2V~5.5V	—	2.0μA	Active Low	SOT23-6	—
BS813A-1	3-Key	2.2V~5.5V	—	4.5μA	Active Low	8SOP	—
BS814A-1	4-Key	2.2V~5.5V	—	5.0μA	Active Low	10MSOP	—
BS814A-2	4-Key	2.2V~5.5V	—	5.0μA	—	8SOP	√
BS816A-1	6-Key	2.2V~5.5V	—	12μA/6.0μA*	Active Low/Active High*	16NSOP	—
BS818A-2	8-Key	2.2V~5.5V	—	12μA/6.0μA*	Binary*	16NSOP	√
BS8112A-3	12-Key	2.2V~5.5V	6.0μA/3.0μA**	13μA/6.5μA**	I²C	16NSOP	√
BS8116A-3	16-Key	2.2V~5.5V	7.0μA/3.5μA**	17μA/9.0μA**	I²C	20SSOP	√

Note: 1. The BS81x series devices have enhanced noise rejection performance.
2. * pin selected option.
3. ** option by I²C communication.

Enhanced Touch Key

Part No.	Touch Key	VDD	Standby Current at 3V		Key Output Type	Package	Serial Interface
			One-key Wake-up	Any-key Wake-up			
BS811C-1	1-Key	2.2V~5.5V	—	2.0μA	Active Low	SOT23-6	—
BS812C-1	2-Key	2.2V~5.5V	—	2.0μA	Active Low	SOT23-6	—
BS813C-1*	3-Key	2.2V~5.5V	—	4.5μA	Active Low	8SOP	—
BS814C-1*	4-Key	2.2V~5.5V	—	5.0μA	Active Low	10MSOP	—
BS814C-2*	4-Key	2.2V~5.5V	—	5.0μA	—	8SOP	√
BS816C-1	6-Key	2.2V~5.5V	—	12.0μA/6.0μA*	Active Low/Active High*	16NSOP	—
BS818C-2	8-Key	2.2V~5.5V	—	12.0μA/6.0μA*	Binary*	16NSOP	√
BS818C-3	8-Key	2.2V~5.5V	6.0μA/3.0μA**	12.0μA/6.0μA**	I²C	16NSOP	√
BS8112C-3	12-Key	2.2V~5.5V	6.0μA/3.0μA**	13.0μA/6.5μA**	I²C	16NSOP, 20SSOP	√
BS8116C-3	16-Key	2.2V~5.5V	7.0μA/3.5μA**	17.0μA/9.0μA**	I²C	20/24SSOP	√

* Under development, available in 2Q, 2020.
Note: 1. The BS81x series devices have enhanced noise rejection performance.
2. * pin selected option.
3. ** option by I²C communication.

Cortex-M0+ 32-Bit Voice / Music MCU

Cortex-M0+ 32-Bit Music Synthesizer MCU

Part No.	Max. Freq.	VDD	Flash	Ext. Flash	SRAM	PDMA	Audio D/A	ADC	Timers*1	I²S	RTC	USB*2	MIDI Engine*3	Voice	Sound Effect	Interface	I/O	Package
HT32F0006	48MHz	2.0V~3.6V	128KB	SPI	16KB	6CH	16-bit ×2	1Msps 12-bit×16	BFTM×2 SCTM×4 GPTM×1	√	√	√	√	SB Coding	Echo	USART×1 UART×1 SPI×1 QSPI×1 I²C×1 I²S×1	52	48/64LQFP

Note: 1. BFTM: Basic Function Timer, SCTM: Single-Channel Timers, GPTM: General-Purpose Timers.
2. USB 2.0 Full Speed device.
3. 32-CH Music Synthesis Engine.

Voice & Music Flash MCU

Voice Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	A/D	IAP	LVR/ LVD	Audio D/A	Power Amp.	Inter-face	Stack	Package
HT66FV130	8MHz 12MHz 16MHz	2.2V~5.5V	2K×16	128×8	32×8	15	10-bit CTM×1 10-bit PTM×1	—	12-bit ×4	√	√	16-bit ×1	1.5W	SPIA×1	4	20/24SOP
HT66FV140	8MHz 12MHz 16MHz	2.2V~5.5V	4K×16	256×8	64×8	19	10-bit CTM×1 10-bit PTM×2	√	12-bit ×8	√	√	16-bit ×1	1.5W	SPI/I²C×1 SPIA×1	8	24SOP/SSOP 28SOP
HT66FV150	8MHz 12MHz 16MHz	2.2V~5.5V	8K×16	512×8	128×8	27	10-bit CTM×2 10-bit PTM×2	√	12-bit ×8	√	√	16-bit ×1	1.5W	SPI/I²C×1 SPIA×1 UART×1	8	28SOP 44LQFP
HT66FV160	8MHz 12MHz 16MHz	2.2V~5.5V	16K×16	1024×8	256×8	35	10-bit CTM×2 10-bit PTM×2 16-bit STM×1	√	12-bit ×8	√	√	16-bit ×1	1.5W	SPI/I²C×1 SPIA×1 UART×1	8	44LQFP

Touch Voice A/D Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	SCOM/ SSEG	Timer	RTC	A/D	Audio D/A	Power Amp.	Touch Key	IAP	Inter-face	Stack	Package
BS66FV340	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	4K×16	512×8	128×8	39	SCOM×6 SSEG×33	10-bit CTM×1 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	16-bit ×1	1.5W	20	√	SPI/I²C×1 SPIA×1 UART×1	8	44/48 LQFP
BS66FV350	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	8K×16	768×8	128×8	39	SCOM×6 SSEG×33	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	16-bit ×1	1.5W	24	√	SPI/I²C×1 SPIA×1 UART×1	8	44/48 LQFP
BS66FV360	8MHz 12MHz 16MHz	2.2V~5.5V	8MHz~16MHz	16K×16	1024×8	256×8	39	SCOM×6 SSEG×33	10-bit CTM×2 16-bit STM×1 10-bit PTM×2	√	12-bit ×8	16-bit ×1	1.5W	28	√	SPI/I²C×1 SPIA×1 UART×1	12	44/48 LQFP

Voice Record / Playback Flash MCU

Voice Record / Playback Flash MCU with Power Amplifier

Part No.	Internal Clock	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	LVR/ LVD	A/D	IAP	G.711 Voice Codec	16-bit PCM ADC	Audio D/A	Power Amp.	Inter-face	Stack	Package
HT66FV240	16MHz	2.2V~5.5V	4K×16	384×8	128×8	28	16-bit CTM×1 16-bit STM×1 16-bit PTM×1	√	√	12-bit ×8	√	√	√	16-bit ×1	1.5W	SPI/I²C×1	8	48LQFP

Sound Effect Flash MCU

Waveform Generator Flash MCU

Part No.	VCC (HV)	VDD	Internal Clock	System Clock	Program Memory	Data Memory	I/O	Waveform Output	Timer	Stack	Package
HT45F2020	8V~16V	5.0V	8MHz	8MHz or 32kHz	1K×14	32×8	4	2	10-bit PTM×1	2	SOT23-6 8SOP
HT45F2022	—	2.2V~5.5V									

BLE

BLE Transparent Transmission

Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes
BCM-7602-G01	2.2V~3.6V	8K×8	1Mbps	+3dBm	-90dBm	UART/SPI	8×2 (P=1.27mm)

BLE Beacon Transmitter

Part No.	VDD	Frequency	Beacon Packet Handler	Output Power	Crystal	BQB 5.0	Interface	Package
BC7161	2.0V~3.6V	2402/2426/2480MHz	√	-10~+8dBm	32MHz	√	I²C×1	8SOP-EP 10MSOP-EP

BLE Beacon 24-Bit A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Frequency	Beacon Packet Handler	Output Power	Crystal	Stack	Package
BH66F71252	2.2V~ 3.6V	8MHz or 32kHz	8K×16	256×8	32×8	25	10-bit CTM×1 16-bit PTM×1	24-bit ×4	2402/2426/2480 MHz	√	-10~+8 dBm	32MHz	8	46QFN

BLE Beacon Body Fat Measurement A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Frequency	Beacon Packet Handler	Output Power	Crystal	Stack	Package
BH66F71652	2.2V~ 3.6V	8MHz or 32kHz	8K×16	384×8	32×8	17	10-bit CTM×1	24-bit ×4	2402/2426/2480 MHz	√	-10~+8 dBm	32MHz	8	46QFN
BH66F71662			16K×16	512×8	64×8		10-bit CTM×1 10-bit STM×1							

2.4GHz RF

2.4GHz RF Transceiver A/D Flash MCU

Part No.	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	LVR/ LVD	A/D	Built-in 2.4GHz RF Block	Comp- arator	Interface	Stack	Package
BC66F840	2.2V~3.6V	4K×16	256×8	128×8	21	16-bit CTM×1 16-bit STM×1 16-bit ETM×1	√	√	12-bit×8	√	1	SPI/I²C×1	8	32QFN

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	Frequency	Data Rate	Output Power	Sensitivity	Interface	Stack	Package
BC66F5652	2.0V~ 3.6V	2/4/8MHz or 32kHz	8K×16	512×8	128×8	22	12-bit ×12	10-bit CTM×1 10-bit STM×1 10-bit PTM×1	2402~2480 MHz	125/250/ 500Kbps	-10~+6 dBm	-96dBm @ 250Kbps	SPI/I²C×1 UART×1	8	46QFN
BC66F5662			16K×16	2048×8	1024×8	24	12-bit ×4	10-bit PTM×1 16-bit STM×1 16-bit PTM×1						16	

2.4GHz RF Transceiver

Part No.	VDD	Frequency	Modulation	Data Rate	Output Power	Sensitivity	Crystal	Interface	Package
BC9824	1.9V~3.6V	2400~2483MHz	GFSK	250K~2Mbps	-40~+3dBm	-96dBm@250Kbps	16MHz	SPI	20QFN
BC5602	1.9V~3.6V	2402~2480MHz	GFSK	125/250/500Kbps	-10~+6dBm	-97dBm@250Kbps	16MHz	SPI	16QFN

2.4GHz RF Transmitter with Encoder A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	Frequency	Modulation	Data Rate	Output Power	Stack	Package
BC66F5132*	2.0V~3.6V	8MHz or 32kHz	2K×14	64×8	32×14#	12	10-bit×4	8-bit×1	2402~2480MHz	GFSK	125/250/500 Kbps	-10~+6dBm	4	24SSOP-EP

* Under development, available in 2Q, 2020.
Note: # Emulated EEPROM.

2.4GHz RF Transmitter with Encoder

Part No.	VDD	Frequency	Modulation	Data Rate	Output Power	Crystal	Key Mode	Interface	Package
BC5161*	2.0V~3.6V	2402~2480MHz	GFSK	125/250/500Kbps	-10~+6dBm	32MHz	√	—	8SOP-EP, 16QFN
BC5162*							—	I²C	8SOP-EP

* Under development, available in 2Q, 2020.

Sub-1GHz RF

Sub-1GHz RF Transceiver A/D Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	Timer	Band	Data Rate	Max. Output Power	Rx Current Consumption	Stack	Package
BC66F3652	1.9V~3.6V	2/4/8MHz or 32kHz	8K×16	512×8	128×8	22	12-bit×12	10-bit CTM×1 10-bit STM×1 10-bit PTM×1	315/433/470/868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	8	46QFN
BC66F3662	1.9V~3.6V	2/4/8MHz or 32kHz	16K×16	2048×8	1024×8	22	12-bit×4	10-bit PTM×1 16-bit STM×1 16-bit PTM×1	315/433/470/868/915MHz	2~250 Kbps	13dBm	4.2mA@433MHz 5.5mA@868MHz	16	46QFN

Sub-1GHz RF Transceiver

Part No.	VDD	Band	FSK/GFSK	Low Current	External Inductor	Data Rate	Max. Output Power	Sensitivity	Package
BC3601	2.0V~3.6V	315/433/470/868/915MHz	√	—	—	2~250Kbps	17dBm	-121dBm@2kbps	24QFN
BC3602	1.9V~3.6V	315/433/470/868/915MHz	√	√	√	2~250Kbps	13dBm	-120dBm@2kbps	24QFN

Sub-1GHz RF Transmitter Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	IAP	I/O	Timer	LVR/LVD	Band	OOK/FSK	Symbol Rate	Output Power	Stack	Package
BC68F2123	2.2V~3.6V	8MHz	1K×14	64×8	32×8	—	9	10-bit STM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/5/10/13dBm	2	16NSOP-EP
BC68F2130	2.0V~3.6V	16MHz	2K×16	256×8	—	√	8	10-bit CTM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/10/13dBm	8	16NSOP-EP 16QFN
BC68F2140	2.0V~3.6V	16MHz	4K×16	256×8	—	√	14	10-bit CTM×1 10-bit PTM×1	√	315/433/868/915MHz	√	0.5~25Ksps (OOK)	0/10/13dBm	8	24SSOP-EP 24QFN

Sub-1GHz RF Transmitter OTP MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer Module	RF				Stack	Package
							Band	OOK/FSK	Symbol Rate	Output Power		
BC48R2021	2.2V~3.6V	8MHz	1K×14	64×8	8	8-bit Timer×1	315/433/868/915MHz	√	0.5~25Ksps	0/5/10/13dBm	2	16NSOP-EP

Sub-1GHz RF Transmitter

Part No.	VDD	Band	OOK/FSK	Symbol Rate	Output Power	Package
BC2102	2.2V~3.6V	315/433/868/915MHz	√	0.5~25Ksps	0/5/10/13dBm	8SOP-EP

Sub-1GHz RF Transmitter with Encoder

Part No.	VDD	Band	OOK	Symbol Rate	Output Power	Encoding Format	Package
BC2161	2.2V~3.6V	315/433/868/915MHz	√	1.5~24Ksps	0/5/10/13dBm	1527, 2262 and HT compatible	8SOP-EP 16NSOP-EP/QFN

Sub-1GHz Super Regeneration Rx Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	SCOM	Band	Demod.	Symbol Rate	Sensitivity	Stack	Package
BC66F2430	4.5V~5.5V	16MHz	2K×16	128×8	64×8	17	10-bit PTM×1 10-bit STM×1 16-bit STM×1	12-bit ×4	4	315/433MHz	OOK	0.5~15 Ksps	-97dBm	6	16NSOP-EP 24SSOP-EP

Sub-1GHz OOK Rx Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	Band	Demod.	Max. Symbol Rate	Current Consumption	Sensitivity	Stack	Package
BC68F2332	2.5V~5.5V	8MHz or 32kHz	2K×14	64×8	32×8	8	10-bit STM×1	315/433/868/915MHz	OOK	20Ksps	3.2mA@433MHz 4.0mA@868MHz	-112dBm @10Ksps	4	16NSOP-EP
BC66F2342			4K×15	128×8	32×15#	13	10-bit STM×1 10-bit PTM×1						6	24SSOP-EP

Note : # Emulated EEPROM.

Sub-1GHz OOK Rx HVIO A/D Flash MCU

Part No.	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	HV I/O	A/D	LDO Output Voltage	Band	Max. Symbol Rate	Current Consumption	Sensitivity	Stack	Package
BC45F7930	7.5V~12V	4.5V~5.5V	32kHz~16MHz	2K×16	128×8	64×8	9	10	12-bit ×4	5.0V	315/433/868/915MHz	20Ksps	3.2mA@433MHz 4.0mA@868MHz	-112dBm @10ksps	4	46QFN 48LQFP-EP
BC45F7940				4K×16	256×8	128×8	13		12-bit ×7						8	

Sub-1GHz OOK Rx

Part No.	VDD	Band	OOK	Max. Symbol Rate	Current Consumption	Sensitivity	Package
BC2302A	2.5V~5.5V	315/433MHz	√	20Ksps	3.2mA@433MHz	-112dBm@10Ksps	8SOP-EP
BC2302B		315/433/868/915MHz			4.0mA@868MHz		

NFC

A/D NFC TAG Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	SCOM	Comp-arator	High Current LED Driver	NFC Standards	Interface	Stack	Package
HT45F4050	4MHz 8MHz 12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	8K×16	256×8	64×8	41	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×13	4	1	41	ISO14443A	SPI/I²C×1 UART×1 NFC×1	8	48LQFP

NFC Reader

Part No.	VDD	System Clock	RF Frequency	NFC Standards	ISO14443A/B RF Data Rate	RF Output Power	NFC FIFO-buffer	CRC	Receiver AGC	I/O VDD Option	Interface	Package
BC45B4523	2.7V~5.5V	27.12MHz	13.56MHz	ISO14443A/B ISO15693	106/212/424/848Kbps	250mA	64×8	√	√	√	SPI×1	24QFN

FRS

Two Way Radio Flash MCU

Part No.	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	RTC	A/D	D/A	FRS AFE	Audio Processor	Audio Power Amp.	Interface	Stack	Package
BC98FR066*	3.3V~ 5.5V	32kHz~ 16MHz	8K×16	512×8	128×8	16	8-bit×2 16-bit×1	√	10-bit ×8	8-bit ×3	√	√	1.5W	UART	8	48LQFP-EP

* Under development, available in 2Q, 2020.
Note: FRS: Family Radio Service.
The Audio Processor function includes the CTCSS, DCS, DTMF, Pre-emphasis, De-emphasis, Scramble, Compander and VOX functions.

RF Module

BLE Transparent Transmission

Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes
BCM-7602-G01	2.2V~3.6V	8K×8	1Mbps	+3dBm	-90dBm	UART/SPI	8×2 (P=1.27mm)

Sub-1GHz Receiver

Part No.	VDD	Band	Symbol Rate (Max.)	Current Consumption	Sensitivity	Interface	Dimension
BM2302-33-1	3.0V~5.5V	315MHz	20Ksps	3.2mA@315MHz	-112dBm@10ksps	I²C	43×10.5×5.2 (mm)
BM2302-34-1		433MHz		3.2mA@433MHz	-112dBm@10ksps		
BM2302-38-1		868MHz		4.0mA@868MHz	-111dBm@10ksps		
BM2302-39-1		915MHz		4.0mA@915MHz	-110dBm@10ksps		
BM2302-63-1	3.0V~5.5V	315MHz	20Ksps	3.2mA@315MHz	-112dBm@10ksps	I²C	16×15×2.6 (mm)
BM2302-64-1		433MHz		3.2mA@433MHz	-112dBm@10ksps		
BM2302-68-1		868MHz		4.0mA@868MHz	-111dBm@10ksps		
BM2302-69-1		915MHz		4.0mA@915MHz	-110dBm@10ksps		

Sub-1GHz Transceiver

Part No.	VDD	Band	Data Rate	Output Power (Max.)	Rx Current Consumption	Sensitivity	Interface	Dimension
BM3601-03-1	2.0V~3.6V	315MHz	2~250Kbps	17dBm	13.5mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3601-04-1		433MHz			13.0mA@433MHz			
BM3601-08-1		868MHz			13.5mA@868MHz	-119dBm@2Kbps		
BM3601-09-1		915MHz			13.5mA@915MHz			
BM3602-03-1	2.0V~3.6V	315MHz	2~250Kbps	13dBm	4.1mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3602-04-1		433MHz			4.2mA@433MHz			
BM3602-08-1		868MHz			5.5mA@868MHz	-119dBm@2Kbps		
BM3602-09-1		915MHz			6.0mA@915MHz			

2.4GHz Transceiver

Part No.	VDD	Band	Data Rate	Output Power (Max.)	Sensitivity	Interface	Dimension
BM5602-60-1	1.9V~3.6V	2402~2480MHz	125/250/500Kbps	7dBm	-98dBm@125Kbps	SPI	17×16×2 (mm)

Interface Bridge

Bridge

Part No.	Description	VDD	Internal Clock	Interface	USB	Virtual COM	HID	FIFO/Buffer	Interface Data Rate	I/O VDD	Package
HT42B532-1	USB to I²C Bridge	3.3V~5.5V	12MHz	USB×1 I²C×1	Full Speed	√	—	TX: 62 bytes RX: 62 bytes	Up to 400kHz	√	8SOP 10MSOP
HT42B533-1	USB to SPI Bridge	3.3V~5.5V	12MHz	USB×1 SPI×1	Full Speed	√	—	TX: 128 bytes RX: 128 bytes	Up to 8MHz	√	10MSOP 16NSOP
HT42B534-2	USB to UART Bridge	3.3V~5.5V	12MHz	USB×1 UART×1	Full Speed	√	—	TX: 128 bytes RX: 128 bytes	Up to 3Mbps Baud	√	8/10SOP 10MSOP 16NSOP
HT42B564-1	USB to UART Bridge	3.3V~5.5V	12MHz	USB×1 UART×1	Full Speed	—	√	TX: 32 bytes RX: 32 bytes	Up to 115.2kbps Baud	√	10SOP

CAN Bus Controller

Part No.	Description	VDD	System Clock	Protocol	Message Objects	Message Memory	Interface	Package
HT45B3305H	CAN Controller	3.0V~5.5V	8MHz~ 24MHz	CAN 2.0A/B ISO11898-1	32	32×139-bit	CAN×1 SPI×1, I²C×1	16NSOP/QFN

Note: Operating temperture rage -40°C~+125°C.
Based on BOSCH CAN IP module C_CAN.

Telecom IC

Telecom Peripheral

Part No.	Description	VDD	OSC Frequency	Package
HT9200A	DTMF generator	2.5V~5.5V	3.58MHz	8DIP/SOP
HT9200B				14SOP
HT9170B	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP
HT9170D				18SOP
HT9172	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP/SOP

Note: The HT9172 has enhanced performance over the HT9170B/HT9170D devices.

Battery Management

Power Bank Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	OVP/OCP/ OUVP	LDO	Level Shift	VREF	Q.C 2.0	Stack	Package
HT45F4MA	30MHz	—	2.55V~ 5.5V	470kHz~ 15MHz or 32kHz	2K×16	128×8	64×8	16	10-bit PTM×1 16-bit STM×1	12-bit ×8	1/1/0	—	—	—	—	4	16NSOP 20SSOP
HT45FH4MA-1		3V~ 28V						13				5V	2				20SSOP
BP45F4MB	30MHz	—	2.5V~ 5.5V	470kHz~ 15MHz or 32kHz	2K×16	128×8	—	18	10-bit PTM×1 16-bit STM×1	12-bit ×7	1/1/0	—	—	2.4V ±1%	—	4	16NSOP 20SSOP
HT45F4N	30MHz	—	2.55V~ 5.5V	470kHz~ 15MHz or 32kHz	4K×16	192×8	64×8	26	10-bit PTM×3 16-bit STM×1	12-bit ×13	0/2/1	—	—	—	—	8	28SSOP
HT45FH4N		3V~ 28V						21				5V	2	—	√		

Advanced Power Bank Flash MCU

Part No.	Internal Clock	VCC (HV)	VDD	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	Auto-adjust H.R. PWM	OCP/ OUVP	LDO	Level Shift	VREF	Q.C 2.0	Stack	Package
HT45F5N	8MHz	—	2.55V~ 5.5V	4K×16	256×8	64×8	30	10-bit PTM×1 16-bit STM×1	12-bit ×14	2	2/2	—	—	2.4V ±1%	—	8	28SSOP 32QFN
HT45FH5N		3V~ 28V					28					5V	2		√		28SSOP 46QFN
BP45FH6N	8/12/16MHz	3V~ 15V	2.55V~ 5.5V	6K×16	256×8	64×8	28	10-bit PTM×1 16-bit STM×1	12-bit ×14	2	2/2	5V	8	2V/3V/4V ±1%	√	8	46QFN

Note: 1. H.R. PWM: High Resolution and Complementary PWM Outputs with dead-time control, the duty cycle resolution is 7.8ns when the HIRC is 8MHz.
2. BP45FH6N has 4 pin level shift output with 12V/90mA and 4 pin High Voltage MOS Gate Driver with 12V/450mA.

Battery Charger Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Inter-face	Timer	A/D	D/A	OPA	CRC	LVR	Stack	Package
HT45F5Q-1	8MHz	2.2V~ 5.5V	8MHz	1K×14	32×8	32×14#	9	—	—	10-bit ×5	8-bit×1 12-bit×1	2	—	2.1V	4	16NSOP
HT45F5Q-2	8MHz 32kHz	2.2V~ 5.5V	125kHz~8MHz or 32kHz	2K×16	128×8	32×8	15	UART×1	10-bit CTM×1	12-bit ×7	8-bit×1 12-bit×1	3	—	2.1V	6	20NSOP
HT45F5Q-3	8MHz 32kHz	2.2V~ 5.5V	125kHz~8MHz or 32kHz	4K×15	256×8	32×15#	23	SPI/I²C/ UART×1	10-bit CTM×1 10-bit STM×1	12-bit ×11	14-bit×1 12-bit×1	3	√	2.1V	6	24/28SSOP

Note: # Emulated EEPROM.

Wireless Charger Tx Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	OCP	Demo-dulation	PLL	Inter-face	Clock Gen.	FSK	Stack	Package
HT66FW2230	20MHz	4.0V~ 5.5V	312kHz~ 20MHz	4K×16	128×8	64×8	21	10-bit CTM×1 10-bit STM×1	12-bit ×8	1	1	0	I²C×1	1	—	8	28SSOP 28QFN
HT66FW2350	8MHz	4.0V~ 5.5V	125kHz~ 20MHz	8K×16	256×8	64×8	27	10-bit CTM×1 10-bit STM×1 16-bit PTM×1	12-bit ×7	1	2	32MHz	I²C×1	1	√	8	32QFN

Wireless Charger Tx Power Stage IC

Part No.	VIN	VDD	OCP	OTP	$R_{DS(ON)}$	Package
HT45B0016	4.5V~25V	4.5V~5.5V	√	√	12mΩ/30mΩ	23QFN

Wireless Charger Rx IC

Part No.	VIN	VDD	SFBR	$R_{DS(ON)}$	OVP	OTP	LDO	LDO Enable Pin	Linear Charge	V_{BAT} Detect	Modulation	Rec Power	Package
BP45B0085*	0V~7V	0V~7V	√	0.3Ω	7.5V	150°C	30mA@5V	√	40~400mA	√	√	3W	24QFN

* Under development, available in 2Q, 2020.
Note: SFBR:Synchronous Full Bridge Rectifier.

Handheld Product Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Emulated EEPROM	I/O	Timer	PWM	A/D	High Current LED Driver	Linear Charger	H-Bridge Driver	H-Bridge Current	Stack	Package
BP45F1130	8MHz	1.8V~ 5.5V	8MHz or 32kHz	2K×14	64×8	32×14	19	8-bit×1	8-bit ×1	10-bit ×4	19	40~400mA	—	—	4	16/20NSOP 24SSOP
BP45F0102	8MHz	1.8V~ 5.5V	8MHz or 32kHz	2K×14	64×8	32×14	13	8-bit×1	8-bit ×1	10-bit ×4	13	—	√	2.1A	4	20SSOP
BP45F1330							14				14	40~400mA				24SSOP
BP45F0106	8MHz	1.8V~ 5.5V	8MHz or 32kHz	4K×15	128×8	32×15	16	10-bit PTM×1 10-bit STM×1	—	10-bit ×8	16	—	√	2.1A	6	24SSOP

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	I/O	Timer	PWM	High Current LED Driver	Demo-dulation	HV-MOSFET	Stack	Package
BP45F0044	16MHz	3.3V~ 5.5V	16MHz or 32kHz	512×13	32×8	4	8-bit×1	8-bit×1	4	1	1	2	8SOP

Li Battery & Power Management

Li Battery Protection Flash MCU

Part No.	Internal Clock	VIN	VDD	V_{MON} Accuracy	LDO	System Clock	Program Memory	Data memory	Data EEPROM	I/O	Timer	A/D	Interface	CRC	IAP	Stack	Package
HT45F8550	8MHz 12MHz 16MHz	7.5V~ 36V	1.8V~ 5.5V	1/n±0.5% (Ratio)	5V±1% 30mA	400kHz~ 16MHz or 32kHz	8K×16	512×8	128×8	16	10-bit PTM×1 16-bit CTM×1 16-bit STM×1	12-bit ×5	UART×1 SPI/I²C×1	—	√	8	28SSOP
HT45F8560							16K×16	2048×8	1024×8	33	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×8	UART×2 SPI/I²C×1 SPIA×1	√		16	48LQFP

Li Battery Protection Analog Front End

Part No.	Cell #	Input Voltage	Control I/F	V_{MON} Voltage Monitor Type	V_{MON} Accuracy	LDO	Package
HT7Q1520	3~8	7.5V~36V	I/O	Accumulative	1/n±0.5% (Ratio)	5V±1%, 30mA	16NSOP

AC Power Management Flash MCU

AVR Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	D/A	LVD/ LVR	OPA	Comp-arator	Stack	Package
HT45F6530	8MHz	2.2V~ 5.5V	8MHz or 32kHz	2K×15	128×8	32×8	22	10-bit CTM×2	12-bit ×6	12-bit ×2	√	2	2	4	20NSOP 24SOP/SSOP

Note: AVR: Automatic Voltage Regulator.

Inverter Flash MCU

Portable Device Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	SPWM	OCP	OVP	AC Detector	LVD/ LVR	Inter-face	Stack	Package
HT45F5V	16MHz	4.0V~ 5.5V	250kHz~ 20MHz or 32kHz	4K×16	256×8	64×8	24	10-bit CTM×2 16-bit STM×1	12-bit ×10	12-bit ×1	2	1	√	√	UART×1	6	20/24/28 SOP/SSOP

LDO & Detector

TinyPower™ LDO

Part No.	Maximum Input Voltage	Output Voltage, V_{OUT}	Max. Output Current (mA)	Typical Current Consumption (μA)	Chip Enable Function	Tolerance	Protections	Package
HT1015-1	12V	1.5V	18	2.2	—	±3%	—	SOT23-5, SOT89
HT71xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30	2.5	—	±3%	Soft-Start	TO92, SOT23-5 SOT89
HT71xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30	2.5	—	±1%	Soft-Start	SOT23-5, SOT89
HT71xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.4V/5.0V	30	1.0	—	±2%	Soft-Start	SOT23-5, SOT89
HT75xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	2.5	—	±3%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT75xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	2.5	—	±1%	Soft-Start	TO92, SOT23-5 SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT75xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	1.0	—	±2%	Soft-Start	SOT23-5, SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT75xx-7	30V	2.1V/2.3V/2.5V/2.7V/3.0V/3.3V/3.6V/4.0V/4.4V	100	2.5	√	±2%	Soft-Start, OCP, OTP	SOT23-5, SOT89
		5.0V/6.0V/7.0V/8.0V/9.0V/10.0V/12.0V	150					
HT73xx	12V	1.8V	150	3.5	—	±3%	—	SOT89
		2.5V	180					
		2.7V	200					
		3.0V/3.3V/3.5V/4.15V/5.0V	250					
HT73xx-1	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	—	±3%	Soft-Start	SOT89, 8SOP-EP
HT73xx-2	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	—	±1%	Soft-Start	SOT89, 8SOP-EP
HT73xx-3	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	1.0	—	±2%	Soft-Start	SOT89, 8SOP-EP
HT73xx-7	30V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	√	±2%	Soft-Start, OCP, OTP	SOT89, 8SOP-EP
HT72xx	8V	1.8V/2.5V/2.7V/3.0V/3.3V/4.5V/5.0V	300	4.0	√	±2%	OCP, OTP	SOT23, SOT23-5 SOT89
HT78xx	8V	1.8V/2.5V/2.7V/3.0V/3.3V/5.0V	500	4.0	√	±2%	OCP, OTP	SOT23-5, SOT89
HT73Lxx	6V	0.9V/1.05V/1.2V/1.5V/1.8V/ 2.5V/2.7V/3.0V/3.3V/3.6V	250	1.0	√	±2%	Soft-Start, OCP, OTP	4DFN, SOT89, SOT23-5
HT75Hxx	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	150	2.5	√	±1.5%	Soft-Start, OCP, OTP	SOT89, SOT23-5 8SOP-EP
HT73Hxx*	40V	2.1V/2.3V/2.5V/2.7V/3.0V/ 3.3V/3.6V/4.0V/4.4V/5.0V	250	2.5	√	±1.5%	Soft-Start, OCP, OTP	SOT89, SOT23-5 8SOP-EP

* Under development, available in 2Q, 2020.
Note: The xx in the part number is the LDO output voltage.

TinyPower™ Voltage Detector

Part No.	Maximum Input Voltage	Detector Voltage, V_{DET}	Hysteresis Width (V)	Typical Current Consumption (μA)	Tolerance	Package
HT70xxA-1	30V	2.2V/2.4V/2.7V/3.3V/3.9V/4.4V/5.0V/8.2V	0.05 × V_{DET}	3.0	±3%	TO92, SOT23, SOT23-5, SOT89
HT70xxA-2	30V	2.2V/2.4V/2.7V/3.3V/3.9V/4.4V/5.0V/8.2V	0.05 × V_{DET}	3.0	±1%	SOT23-5, SOT89
HT70xxA-3	30V	2.2V/2.4V/2.7V/3.3V/3.9V/4.4V/5.0V/8.2V	0.05 × V_{DET}	1.0	±2%	SOT23-5, SOT89

Note: The xx in the part number is the detect voltage.

DC to DC Converter

Asynchronous Step-Down DC to DC Converter

Part No.	Max. Input Voltage	Output Voltage	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (μA)	Operation Current, I_Q (mA)	Efficiency	Mode	Package
HT7463A	52V	1.00V~36V	0.6	1250	1.0	0.8V±2.0%	1.0	0.7	95%	PWM	SOT23-6
HT7463B				550							

Synchronous Step-Down DC to DC Converter

Part No.	Max. Input Voltage	Output Voltage, V_{OUT}	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (μA)	Operation Current, I_Q (mA)	Efficiency	Mode	Package
HT74153A*	6V	0.6V~5V	1.8	1200	3.2	0.6V±1.5%	0.5	0.05	95%	PWM/ PFM	8SOP-EP SOT23-5
HT74153B*				400							
HT74173A*			3.0	1200	5.0						
HT74173B*				400							

* Under development, available in 2Q, 2020.

Asynchronous Step-Up DC to DC Converter

Part No.	Input Voltage	Output Voltage, V_{OUT}	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (μA)	Operation Current, I_Q (μA)	Efficiency	Mode	Package
HT77xxB	0.7V~6.0V	1.8V/2.2V	0.1	115	—	V_{OUT}±2.5%	1.0	4	80%	PFM	SOT23, SOT23-5 SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT77xxBA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2	200	0.8	V_{OUT}±2.5%	1.0	5	85%	PFM	SOT23, SOT23-5 SOT89
HT77xxC	0.7V~6.0V	1.8V/2.2V	— (External)	115	—	V_{OUT}±2.5%	1.0	4	80%	PFM	SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT7991	2.6V~5.5V	3.0V~12.0V	1.0	1000	2.5	0.6V±2.0%	1.0	210	85%	PWM	SOT23-6

Note: The xx in the part number is the output voltage.

Synchronous Step-Up DC to DC Converter

Part No.	Input Voltage	Output Voltage, V_{OUT}	Output Current (A)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (μA)	Operation Current, I_Q (μA)	Efficiency	Mode	Package
HT77xxS	0.7V~6.0V	1.8V/2.2V	0.1	500	—	V_{OUT}±2.5%	1.0	4	80%	PFM	SOT23, SOT23-5, SOT89
		2.7V/3.0V/3.3V/3.7V/5.0V							85%		
HT77xxSA	0.7V~6.0V	2.7V/3.0V/3.3V/3.7V/5.0V	0.2	500	0.8	V_{OUT}±2.5%	1.0	4	90%	PFM	SOT23, SOT23-5, SOT89
HT79171	2.2V~5.0V	2.6V~5.2V	2.0	500	5.0	0.6V±1.5%	1.0	65	95%	PWM/ PSM	8SOP-EP, 10QFN
HT79181	2.2V~5.0V	2.6V~5.2V	3.0	500	6.0	0.6V±1.5%	1.0	65	95%	PWM/ PSM	10QFN

Note: The xx in the part number is the output voltage.

Charge Pump DC to DC Converter

Part No.	Input Voltage	Output Voltage, V_{OUT}	Output Current (mA)	Switching Frequency (kHz)	Current Limit (A)	Accuracy	Shutdown Current, I_{OFF} (μA)	Operation Current, I_Q (mA)	Efficiency	Package
HT7660	3V~12V	$-V_{DD}$~V_{DD}	20	10	—	V_{OUT}±4.0%	—	0.08	98%	8DIP/SOP

AC to DC Converter

AC to DC Converter

Part No.	Topology	PF	Power MOS (BV)	Input Voltage	$R_{DS(ON)}$	Operation Current	Typical Power Capability	Frequency	Protections	Package
HT7A6312	Flyback (SSR), Buck, Buck-Boost	—	730V	9V~38V	19Ω	0.7mA	8W/13W#	60kHz	UVLO, OTP, OVP, OCP	8DIP/SOP
HT7A6322					12Ω		12W/20W#			
HT7L5820	Flyback (PFC+QR PWM)	> 0.97	Ext.	9V~28V	—	3mA	200W	—	Brown In/Out, UVLO, OCP, open/short, OVP (Auto Recovery), OTP (Auto Recovery)	16NSOP
HT7L5821									Brown In/Out, UVLO, OCP, open/short, OVP (Latched), OTP (Latched)	

Note: All of ICs operate from $85V_{AC}$ to $265V_{AC}$.
Max. output power from $85V_{AC}$ to $265V_{AC}$/$176V_{AC}$ to $265V_{AC}$.

LCD Controller & Driver

RAM Mapping LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Gray Scale	Serial Data	Built-in OSC.	Ext. Crystal	Package
HT1620	2.4V~3.3V	32×4, 32×3, 32×2	$3/2V_{DD}$	1/2, 1/3	—	1	—	√	64LQFP
HT1621	2.4V~5.2V	32×4, 32×3, 32×2	≤ V_{DD}	1/2, 1/3	—	1	√	√	44LQFP, 48SSOP/LQFP
HT1621S	2.4V~5.5V								
HT1621G	2.4V~5.2V								Gold Bump
HT1621SG	2.4V~5.5V								
HT1622	2.7V~5.2V	32×8	≤ V_{DD}	1/4	—	1	√	—	44/52/64LQFP
HT1622G									Gold Bump
HT16220	2.7V~5.2V	32×8	≤ V_{DD}	1/4	—	1	—	√	64LQFP
HT1623	2.7V~5.2V	48×8	≤ V_{DD}	1/4	—	1	√	√	100LQFP
HT1625	2.7V~5.2V	64×8	≤ V_{DD}	1/4	—	1	√	√	100LQFP
HT1626	2.7V~5.2V	48×16	≤ V_{DD}	1/5	—	1	√	√	100LQFP
HT1629G	2.4V~5.5V	240×2, 240×1	2.4V~5.5V	1/1, 1/2	—	1	√	√	Gold Bump
HT1647	2.7V~5.2V	64×16	≤ V_{DD}	1/4, 1/5	4	4	√	√	100LQFP

High Noise Immunity LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Power Saving Mode	Interface	Keyscan	Package
HT16C21	2.4V~5.5V	20×4, 16×8	≤ V_{DD}	1/3, 1/4	—	I^2C	—	16NSOP 20/24/28SOP
HT16C22	2.4V~5.5V	44×4	≤ V_{DD}	1/2, 1/3	—	I^2C	—	48/52LQFP
HT16C22G								Gold Bump
HT16C23	2.4V~5.5V	56×4, 52×8	2.4V~5.5V	1/3, 1/4	—	I^2C	—	48/64LQFP
HT16C23G								Gold Bump
HT16C24	2.4V~5.5V	72×4, 68×8, 60×16	2.4V~5.5V	1/3, 1/4, 1/5	—	I^2C	—	64/80LQFP
HT16C24G								Gold Bump
HT16K23	2.4V~5.5V	20×4	= V_{DD}	1/3	—	I^2C	20×1	28SOP
		16×8		1/4			16×1	
HT9B92	2.4V~5.5V	36×4	≤ V_{DD}	1/2, 1/3	√	I^2C	—	48LQFP/TSSOP
HT9B95A	2.4V~5.5V	35×8	2.4V~5.5V	1/4	√	I^2C	—	48TSSOP, 52LQFP
HT9B95B		43×4		1/3				52LQFP
		39×8		1/4				

Low Voltage LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Power Saving Mode	Interface	LED	Keyscan	Package
HT16L21	1.8V~5.5V	32×4	2.4V~6.0V	1/2, 1/3	—	I^2C, SPI 3-Wire	8	—	44LQFP
HT16L23	1.8V~5.5V	52×4, 48×8	2.4V~6.0V	1/3, 1/4	—	I^2C, SPI 3-Wire	8	—	64LQFP

High Operating Voltage LCD Controller & Driver

Part No.	VDD	Max. Resolution Segment × Common	LCD Voltage	Bias	Duty	Interface	Charge Pump	Contrast Adjustment	GPO	Package
HT16H25	2.4V~5.5V	60×16	2.5~12V	1/1~1/5	Static, 1/2~1/16	I^2C, SPI 3-Wire	×2, ×3, ×4, ×5	4-bit	4CH	80/100LQFP

LED Controller & Driver

RAM Mapping LED Controller & Driver

Part No.	VDD	Max. Resolution Row×Common	Row Source Current (Min.)	Row Sink Current (Min.)	Com Source Current (Min.)	Com Sink Current (Min.)	Inter-face	PWM Gray Scale	Key-scan	Package
HT1632C	4.5V~5.5V	32×8, 24×16	50mA	12mA	45mA	250mA	4-Wire	16Level for Global	—	52LQFP
		24×8								48LQFP
HT1635A	4.5V~5.5V	44×8	50mA	10mA	45mA	250mA	4-Wire	16Level for Global	—	64LQFP
HT1635B							I²C			
HT16K33	4.5V~5.5V	16×8	20mA±5%	6mA	20mA	160mA	I²C	16Level for Global	13×3	28SOP
		12×8							10×3	24SOP
		8×8							8×3	20SOP

Advanced LED Controller & Driver

Part No.	VDD	LED_VDD	Max. Resolution Row×Common	Com Source Current (Min.)	Com Sink Current (Min.)	Inter-face	PWM Gray Scale	Constant Current	Fade	Auto Scrolling	Over Temp. Detection	Open/Short Detection	Package
HT16D31A	2.7V~5.5V	4.5V~5.5V	8×9	270mA	—	3-Wire SPI	256Level for each dot	33mA±3% Max. 48mA	√	√	√	√	16NSOP-EP 16QFN
HT16D31B						I²C							
HT16D33A	2.7V~5.5V	4.5V~5.5V	9×10 + 9×10 12×12 16×16	315mA	—	3-Wire SPI	256Level for each dot	33mA±3% Max. 48mA	√	√	√	√	24SSOP-EP 28SSOP 32QFN
HT16D33B						I²C							
HT16D35A	2.7V~5.5V	4.5V~5.5V	28×8	250mA	45mA	3-Wire SPI	64Level for each dot	30mA±3% Max. 45mA	√	√	√	—	48LQFP-EP
HT16D35B						I²C							

White LED Backlight Driver

White LED Backlight Driver

Part No.	Input Voltage	Output Current (mA)	Switching Frequency (kHz)	Efficiency	Typical OVP (V)	Accuracy	Max. LED#	PWM Dimming Frequency	Power Element	Backlight Type	Protections	Package
HT7938A-3	2.6V~5.5V	200	1200	90%	39	300mV±5%	10	100Hz~200kHz	Internal	Parallel/Series	UVLO, OVP, OCP, OTP	SOT23-6
HT7939A	2.6V~5.5V	260	1200	90%	17.6/32.0	200mV±5%	39	100Hz~200kHz	Internal	Parallel/Series	UVLO, OVP, OCP, OTP	SOT23-6
HT7963	9.0V~30V	1200	200	90%	Adjustable	300mV±3%	—	100Hz~1kHz	External	Parallel/Series	UVLO, OVP, OCP, OTP, Soft-Start, LED open, LED short, OSP	8SOP

AC / DC LED Lighting Driver

AC / DC LED Lighting

Part No.	Topology	PF	Power MOS	HV Start-up	Maximum Output Power	Current Accuracy	Protections	Package
HT7L5600	Flyback (PSR)	>0.9	Ext.	—	60W	±3%	UVLO, OVP, OTP, OCP, LED open/short	SOT23-6
HT7L5820	Flyback (PFC+QR PWM)	>0.97	Ext.	650V	200W	±2%	Brown In/Out, UVLO, OCP, open/short, OVP (Auto Recovery), OTP (Auto Recovery)	16NSOP
HT7L5821							Brown In/Out, UVLO, OCP, open/short, OVP (Latched), OTP (Latched)	

Note: All of LED Lighting Drivers operate from 85V_{AC} to 265V_{AC}.
Max. output power from 85V_{AC} to 265V_{AC}/176V_{AC} to 265V_{AC}.

VFD Controller & Driver

VFD Controller & Driver

Part No.	VDD	Segment	Digit	Output Voltage	Key Matrix	General Input	LED Output	Dimming Step	Package
HT16511	3.0V~5.5V	12~20	16~8	V_{DD}~35V	12×4	4	5	8	52LQFP
HT16512	3.0V~5.5V	11~16	11~6	V_{DD}~35V	6×4	4	4	8	44LQFP
HT16515	3.0V~5.5V	16~24	12~4	V_{DD}~35V	16×2	—	4	8	44LQFP

Dot Character VFD Controller & Driver

Part No.	VDD	Segment	Digit	Output Voltage	Display RAM	CGROM	CGRAM	Package
HT16528-001 HT16528-002 HT16528-003	2.7V~5.5V	80	24	80V	80×8 bits	240×5×8 bits	8×5×8 bits	144LQFP

Note: 1. The AD suffix in the Segment column represents additional data segment outputs.
2. The 001, 002 and 003 part number suffix represents different language and symbol character ROM code types.

Segment VFD Driver

Part No.	VDD	Output Voltage	Output Driver	Output Current	Cascade	Package
HT16506	3.0V~5.5V	20V~80V	64	20mA	√	80LQFP

EPD Controller & Driver

Segment EPD Controller & Driver

Part No.	VDD	Segment	Driving High Voltage (VDH)		Data Comparison	Cascade	Charge Pump	Temperature Sensor	Package
			Black/White	Red					
HT16E07	2.4V~3.6V	120 bit	12V	4~8V	√	√	√	√	Gold Bump

Note: EPD: E-Paper Display.

Bank & Commercial MCU

Smart Card Reader Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	A/D	RTC	Timer	Comp-arator	USB	LDO	EMV ISO 7816-3	IAP/ ISP	Inter-face	Stack	Package
HT66F4360	12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	3072×8	—	36	12-bit ×8	√	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	2	√	1.8V 3.0V 5.0V	Class A/B/C	√	UART×2 SPI×2 I²C×1	12	48/64 LQFP
HT66F4370	12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	32K×16	3072×8	—	36	12-bit ×8	√	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	2	√	1.8V 3.0V 5.0V	Class A/B/C	√	UART×2 SPI×2 I²C×1	12	48/64 LQFP
HT66F4390	12MHz	2.2V~ 5.5V	400kHz~ 16MHz or 32kHz	64K×16	3072×8	256×8	36	12-bit ×8	√	10-bit CTM×2 10-bit PTM×1 16-bit STM×1	2	√	1.8V 3.0V 5.0V	Class A/B/C	√	UART×2 SPI×2 I²C×1	16	48/64 LQFP

Ultra-Low Power Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	MDU#	I/O	LCD	RTC	A/D	Timer	Interface	Stack	Package
HT66F2560	1/2/4/8/12MHz	1.8V~ 5.5V	400kHz~ 16MHz or 32kHz	16K×16	2048×8	256×8	16-bit	42	SCOM ×4	√	12-bit ×8	16-bit PTM×2 16-bit STM×3	SPI/I²C×1 SPIA×1 UART×2	16	48LQFP
HT69F2562	4/8/12MHz	1.8V~ 5.5V	400kHz~ 12MHz or 32kHz	16K×16	2304×8	128×8	—	19	32×4	√	—	10-bit CTM×2 16-bit STM×1	SPI×1 SPI/I²C/UART×1	16	64LQFP

Note: # MDU: Multiplier Divider Unit.
The power consumption of the RTC on standby current is less than 200nA at 3V.

Ultra-Low Power Flash MCU with LCD Driver & Touch Key

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	RTC	A/D	Touch Key	Timer	Interface	Stack	Package
BS67F2563	4/8/12MHz	1.8V~ 5.5V	400kHz~ 12MHz or 32kHz	16K×16	2304×8	128×8	31	32×4	√	12-bit ×7	20	10-bit CTM×2 16-bit STM×1	SPI×1 SPI/I²C/UART×1	16	64LQFP

Note: The power consumption of the RTC on standby current is less than 200nA at 3V.

Ultra-Low Power Flash MCU with EPD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	EPD#	RTC	A/D	Timer	Interface	Stack	Package
HT67F2567	4/8/12MHz	1.8V~ 5.5V	400kHz~ 12MHz or 32kHz	16K×16	2304×8	128×8	19	SEG×64 COM×1 BG×1	√	12-bit ×8	10-bit CTM×2 16-bit STM×1	SPI×1 SPI/I²C/UART×1	16	100LQFP
HT67F2567G														Gold Bump

Note: # EPD: Electronic Paper Displays.
The power consumption of the RTC on standby current is less than 200nA at 3V.

Special Purpose MCU

Waveform Generator Flash MCU

Part No.	VCC (HV)	VDD	Internal Clock	System Clock	Program Memory	Data Memory	I/O	Waveform Output	Timer	Stack	Package
HT45F2020	8V~16V	5.0V	8MHz	8MHz or 32kHz	1K×14	32×8	4	2	10-bit PTM×1	2	SOT23-6 8SOP
HT45F2022	—	2.2V~5.5V									

Induction Cooker Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	PWM	PPG	Comp-arator	OVP	OPA	Inter-face	Stack	Package
HT45F0004	8MHz	2.2V~5.5V	400kHz~8MHz	4K×16	208×8	32×8	17	8-bit ×3	12-bit ×12	8-bit ×1	9-bit ×1	4	—	1	I²C×1	8	16DIP/NSOP 20DIP/SOP
HT45F0057	8MHz	2.2V~5.5V	8MHz	4K×16	208×8	—	13	8-bit ×3	12-bit ×9	—	9-bit ×1	4	—	1	—	6	16DIP/NSOP
HT45F0058	16MHz	3.3V~5.5V	32kHz~16MHz	4K×16	256×8	32×8	13	8-bit ×3	12-bit ×10	—	9-bit ×1	4	1	1	—	8	16NSOP

Half-bridge Induction Cooker Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	PWM	OPA	OVP	CRC	MDU#	Inter-face	Stack	Package
HT45F0074	16MHz	4.5V~5.5V	32kHz~16MHz	8K×16	512×8	128×8	20	10-bit CTM×3 10-bit PTM×1	12-bit ×8	12-bit ×1	1	7	√	16-bit	SPI/I²C/UART×1	8	20NSOP 24SOP

Note: # MDU: Multiplier Divider Unit.

Low Power Flash MCU

Ultra-Low Voltage Flash MCU with LCD Driver

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	LCD	Timer	Power Switch	Stack	Package
HT69F3742L	2/4/8MHz	1.2V~5.5V	400kHz~8MHz or 32kHz	4K×16	128×8	128×8	9	23×4 24×3	10-bit STM×1	√	4	46QFN

CAN Bus Flash MCU

CAN Bus A/D Flash MCU

Part No.	Internal Clock	VDD	System Clock	Program Memory	Data Memory	Data EEPROM	I/O	Timer	A/D	SCOM	CAN Protocol	Message Objects	Message Memory	Inter-face	Stack	Package
HT66F3370H	8MHz 12MHz 16MHz	2.2V~5.5V	400kHz~16MHz or 32kHz	32K×16	3K×8	1K×8	58	10-bit PTM×2 16-bit PTM×2 16-bit STM×3	12-bit ×16	4	CAN 2.0A/B ISO11898-1	32	32×139-bit	CAN×1 SPI/I²C×1 SPIA×1 UART×3	16	48/64LQFP

Note: Operating temperture rage -40°C~+125°C.
Based on BOSCH CAN IP module C_CAN.

RF Module

BLE Transparent Transmission

Part No.	VDD	Data EEPROM	Data Rate	Output Power	Sensitivity	Interface	Stamp Holes
BCM-7602-G01	2.2V~3.6V	8K×8	1Mbps	+3dBm	-90dBm	UART/SPI	8×2 (P=1.27mm)

Sub-1GHz Receiver

Part No.	VDD	Band	Symbol Rate (Max.)	Current Consumption	Sensitivity	Interface	Dimension
BM2302-33-1	3.0V~5.5V	315MHz	20Ksps	3.2mA@315MHz	-112dBm@10ksps	I²C	43×10.5×5.2 (mm)
BM2302-34-1		433MHz		3.2mA@433MHz	-112dBm@10ksps		
BM2302-38-1		868MHz		4.0mA@868MHz	-111dBm@10ksps		
BM2302-39-1		915MHz		4.0mA@915MHz	-110dBm@10ksps		
BM2302-63-1	3.0V~5.5V	315MHz	20Ksps	3.2mA@315MHz	-112dBm@10ksps	I²C	16×15×2.6 (mm)
BM2302-64-1		433MHz		3.2mA@433MHz	-112dBm@10ksps		
BM2302-68-1		868MHz		4.0mA@868MHz	-111dBm@10ksps		
BM2302-69-1		915MHz		4.0mA@915MHz	-110dBm@10ksps		

Sub-1GHz Transceiver

Part No.	VDD	Band	Data Rate	Output Power (Max.)	Rx Current Consumption	Sensitivity	Interface	Dimension
BM3601-03-1	2.0V~3.6V	315MHz	2~250Kbps	17dBm	13.5mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3601-04-1		433MHz			13.0mA@433MHz			
BM3601-08-1		868MHz			13.5mA@868MHz	-119dBm@2Kbps		
BM3601-09-1		915MHz			13.5mA@915MHz			
BM3602-03-1	2.0V~3.6V	315MHz	2~250Kbps	13dBm	4.1mA@315MHz	-120dBm@2Kbps	SPI	15×18.5×2.5 (mm)
BM3602-04-1		433MHz			4.2mA@433MHz			
BM3602-08-1		868MHz			5.5mA@868MHz	-119dBm@2Kbps		
BM3602-09-1		915MHz			6.0mA@915MHz			

2.4GHz Transceiver

Part No.	VDD	Band	Data Rate	Output Power (Max.)	Sensitivity	Interface	Dimension
BM5602-60-1	1.9V~3.6V	2402~2480MHz	125/250/500Kbps	7dBm	-98dBm@125Kbps	SPI	17×16×2 (mm)

Digital Sensor & Module

PIR Module

Part No.	VDD	Detection Range (Typ.) Meter	FOV H, V	Lens Color	Interface	Power Consumption
HT7M2126	2.7V~5.5V	3.5~6	121°, 77°	Nature	I²C or I/O	< 50μA
HT7M2127		2.8~5	121°, 77°	Black		
HT7M2136		5.5~8	91°, 10°	Nature		
HT7M2156		8~12	20°, 10°	Nature		
HT7M2176		5~7.5	86°, 75°	Nature		

PIR Sensor

Part No.	Supply Voltage	Responsibility	Noise	Operating Current (5V/3V)	Serial Interface	Pins	Window Size	Viewing Angle H/V	Package
BM22S4021-1	2.7V~5.5V	4.3kV/W (To=100ºC, 1Hz, @25ºC)	33μVp-p (0.3~3Hz, @25ºC)	2.5mA/2.0mA	I²C/UART	4	5×5mm	136º/123º	TO-5

Air Pressure Sensor

Part No.	Supply Voltage	Operating Current (5V)	Accuracy (25ºC)	Pressure Range	Bridge Impedance	Linearity	Thermal Error	Response	Over Pressure	Operating Temperature
BM62S2201-1	2.7V~5.5V	3.5mA	1.0%FS	1psi	5.5kΩ	0.3%FS	0.015%FS/ºC	1ms	3×FS	0~50ºC

Temperature and Humidity Sensor

Part No.	Supply Voltage	Power Consumption(5V)	Relative Humidity Resolution	Relative Humidity Rang	Relative Humidity Precision	Relative Humidity Drift	Temperature Resolution	Temperature Range	Temperature Precision	Temperature Drift
BM25S2021-1	2.7V~5.5V	1.5mA	0.1%RH	10~95 %RH	±3%RH 25ºC	±1.5%RH/yr	0.1ºC	-20~+85 ºC	±0.5ºC	0.3ºC/yr

Smoke Detector Sensor

Part No.	Supply Voltage	Detection Consumption	Power Consumption	Detection Sensitivity	Interface	Dimension
BM22S2021-1	3V~5V	<10μA	< 2mA	0.05dB/m-0.4dB/m	AX/TX/IO	36×36×27 (mm)

GAS Detector Sensor

Part No.	Supply Voltage	Power Consumption	Detection Range	Interface	Dimension
BM22S3021-1	5V	<250mA	300ppm~10000ppm	AX/TX/IO	24×20×22 (mm)

Proximity Sensing Module

Part No.	Supply Voltage	Detection Consumption (3.3V/Typ.)	Power Consumption (3.3V/Typ.)	Detection Range (Typ./25°C/A4 Paper)	Interface	Dimension
BM32S2021-1	3.3V/5V	1.5mA	10μA	1~100cm	UART or IO	17×10×7 (mm)

3-Wire EEPROM

3-wire EEPROM

Part No.	Capacity	VDD	Clock Rate (MHz)	Write Speed @2.4V (ms)	Operating Current @5V (mA)	Standby Current @5V (μA)	Package
HT93LC46	64×16/128×8	1.8V~5.5V	2	5	5	2	8DIP/SOP

Note: Operating temperature range −40°C ~ +85°C.

I²C EEPROM

I²C EEPROM

Part No.	Capacity	VDD	Clock Rate (kHz)	Write Speed @2.4V (ms)	Operating Current @5V (mA)	Standby Current @5V (μA)	Package
HT24LC02	256×8	1.8V~5.5V	400	5	5	3	8DIP/SOP
HT24LC02A	256×8	1.8V~5.5V	400	5	5	2	8SOP, SOT23-5
HT24LC04	512×8	1.8V~5.5V	400	5	5	3	8DIP/SOP
HT24LC08	1024×8	1.8V~5.5V	400	5	5	3	8DIP/SOP
HT24LC16	2048×8	1.8V~5.5V	400	5	5	3	8DIP/SOP
HT24LC32	4096×8	1.8V~5.5V	400	5	5	3	8DIP/SOP
HT24LC64	8192×8	1.8V~5.5V	400	5	5	3	8DIP/SOP

Note: Operating temperature range −40°C ~ +85°C.

General OP Amplifier

General Purpose OP Amplifier

Part No.	Description	OP No.	VDD	BW(Hz)	Current(μA)/OP	Package
HT9231	220μA, 2.3MHz Single OP amplifier	1	2.0V~5.5V	2.3M	220	SOT23-5
HT9232	220μA, 2.3MHz Dual OP amplifier	2	2.0V~5.5V	2.3M	220	8DIP/SOP
HT9234	220μA, 2.3MHz Quad OP amplifier	4	2.0V~5.5V	2.3M	220	14DIP/SOP
HT9251	50μA, 550kHz Single OP amplifier	1	1.8V~5.5V	550K	50	SOT23-5
HT9252	50μA, 550kHz Dual OP amplifier	2	1.8V~5.5V	550K	50	8DIP/SOP
HT9254	50μA, 550kHz Quad OP amplifier	4	1.8V~5.5V	550K	50	14DIP/SOP
HT9274	Quad micropower OP amplifier	4	1.6V~5.5V	100K	3	14SOP
HT9291	TinyPower™ Single OP amplifier	1	1.4V~5.5V	11K	0.6	SOT23-5
HT9292	TinyPower™ Dual OP amplifier	2	1.4V~5.5V	11K	0.6	8SOP
HT9294	TinyPower™ Quad OP amplifier	4	1.4V~5.5V	11K	0.6	14SOP
HT92232	16μA, 300kHz, Rail to Rail, Dual OP amplifier	2	2.1V~5.5V	300K	16	8SOP/MSOP
HT92252	40μA, 1MHz, Rail to Rail, Dual OP amplifier	2	2.1V~5.5V	1M	40	8SOP/MSOP

Precision OP Amplifier

Part No.	Description	OP No.	VDD	BW(Hz)	Current(μA)/OP	Package
HT92632	30μA, 300kHz, Rail to Rail, Dual OP amplifier	2	2.0V~5.5V	300K	30	8SOP/MSOP
HT92652	500μA, 1.5MHz, Rail to Rail, Dual OP amplifier	2	2.0V~5.5V	1.5M	500	8SOP/MSOP

Low Power OP Amplifier

Part No.	Description	OP No.	VDD	BW(Hz)	Current(μA)/OP	Package
HT92112	0.6μA, 14kHz, Rail to Rail, Dual OP amplifier	2	1.4V~5.5V	14K	0.6	8SOP/MSOP
HT92122	0.6μA, 100kHz, Rail to Rail, Dual OP amplifier	2	1.4V~5.5V	100K	0.6	8SOP/MSOP

Audio Amplifier

Class AB Audio Amplifier

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT82V733	Mono audio power amplifier	2.4V~5.5V	400mW into 8Ω	√	8SOP
HT82V735	Stereo audio power amplifier with shutdown	2.4V~6.0V	330mW into 32Ω	√	8SOP
HT82V739	1200mW mono audio power amplifier with shutdown	2.2V~5.5V	1200mW into 8Ω	√	8SOP
HT82V73A	1500mW mono audio power amplifier with shutdown	2.2V~5.5V	1500mW into 8Ω	√	8SOP-EP

Audio PWM Driver

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT82V742	Audio PWM driver	2.0V~5.5V	1.5W into 5V, 8Ω	—	8SOP

Class D Audio Amplifier

Part No.	Description	VDD	Output Power	Mute/Shutdown Function	Package
HT82V7524	3W mono filter-free class-D audio power amplifier	1.8V~6.0V	3W into 5V, 4Ω	—	8SOP-EP
HT82V7534	3W Stereo Filter-free Class-D Audio Power Amplifier	1.8V~6.0V	3W into 5V, 4Ω	√	20TSSOP-EP

24-Bit A/D Peripheral

Enhanced 24-Bit A/D Peripheral

Part No.	Internal Clock	VDD	A/D	ENOB	Data Rate	PGA	Interface	Package
BH45B1225	4.91MHz	2.4V~5.5V	24-bit×4	19.4@5V	5Hz~1.6kHz	1~128	I^2C×1	8SOP/16NSOP

CCD / CIS Analog Signal Processor

CCD / CIS Analog Signal Processor

Part No.	AVDD/VDD	A/D (Bit)	Input CH.	MSPS	Clamp Bias	PGA	Prog. Offset	Full Scale	Power Consumption	Package
HT82V36	3.0V~3.6V	16	1	10 (CCD:6)	2.5V/2.0V	1~5.85V/V (6-bit)	±100mV (9-bit)	1.4V	56mW/1μA	28SSOP
HT82V38	3.15V~3.45V	16	3/2/1	30/30/20	0.45V~2.7V (4-bit)	1~6.25V/V (6-bit)	±250mV (9-bit)	1.6V/2V	300mW/10μA	28SSOP
HT82V42	3.0V~3.6V	16	1	15	0.4V~3.0V (4-bit)	0.7~7.84V/V (8-bit)	±315mV (8-bit)	2V	188mW/300μA	20SSOP
HT82V48	3.0V~3.6V	16×2	3×2	60×2	0.4V~3.0V (4-bit)	0.65~6.0V/V (9-bit)	±290mV (8-bit)	1.2V/2V	925mW/400μA	48LQFP-EP

Image Signal Processor

Image/Neural-network Processor

Part No.	Max. Freq.	VDD (I/O)	DSP				L2 RAM	DDR I/F	DMA	e-Fuse	ADC	CMP	Timers*2	Interface*3	Others*4	I/O	Power	Package
			Core	Cache	L1 RAM	FPU												
HT82V82	250MHz	3.0V~ 3.6V	2	I: 32KB D: 32KB ×2	I: 16KB D: 32KB ×2	1 ×2	256KB	DDR2 DDR3	EDMA: 2CH PDMA: 8CH	128-bit	1Msps 12-bit ×16	1	RTC×1 WDT×1 BFTM×2 GPTM×4	UART×4 SPI×3, I²C×2 CLSIF×2 CASIF×2 HSSPI SDIO EPI 8080 LCD I/F	AES-128 SHA-256 TG, LINFO SHDC JPG ENC HWE	40	750mW	256TFBGA

Note: 1. VDD Core: 0.9V~1.1V; VDD DDR: 1.425V~1.575V.
2. BFTM: Basic Function Timer, GPTM: General-Purpose Timers.
3. CLSIF: CMOS Line Sensor Interface; CASIF: CMOS Area Sensor Interface; HSSPI: 40MHz High Speed SPI; EPI: External Parallel Interface.
4. AES-128: Advanced Encryption Standard; SHA-256: Secure Hash Algorithm; TG: Sensor, LED & AFE Timing Generator; LINFO: Scan Line Information; SHDC: Shading Correction; JPG ENC: JPEG Encoder; HWE: Hardware Matrix & Neural Calculation Engine.

Currency Recognition Processor

CIS Analog Front End Processor

Part No.	AVDD/VDD	A/D (Bit)	Input Channel	MSPS	Clamp Bias	PGA	Prog. Offset	Full Scale	Power Consumption	Package
HT82V48	3.0V~3.6V	16×2	3×2	60×2	0.4~3.0V (4-bit)	0.65~6.0V/V (9-bit)	±290mV (8-bit)	1.2V/2V	925mW/400μA	48LQFP-EP

CIS Digital Front End Processor

Part No.	AVDD/VDD	CIS Moudule				Shading Correction		Line Information	Others	Output	Power Consumption	Package
		Channel	MSPS	Element	LED	Gain	Offset					
HT82V70	3.0V~3.6V	3~6 ×2	120 ×2	1,584	6×2	0x~8x (10-bit)	0~-255 (8-bit)	Index, Left/Right Boundary, Max, Min, Sum, Histogram	COMP, TG I²C, SPI	VPFE, EMIFA	400mW/3mW	100LQFP

CIS Front End Processor

Part No.	AVDD/ VDD	A/D (Bit)	Input Ch.	MSPS	PGA (V/V)	Prog. Offset (mV)	Full Scale	CIS Moudule		Shading Correction		Line Information	Others	Output	Power	Package
								Element	LED	Gain	Offset					
HT82V72	3.0V~3.6V	16×2	3×2	60×2	0.65~6.0 (9-bit)	±290 (8-bit)	1.2V/2V	1,584	6×2	0x~8x (10-bit)	0~-255 (8-bit)	Index, Left/Right Boundary, Max, Min, Sum, Histogram	COMP, TG, I²C, SPI	VPFE, EMIFA	1100mW/ 10μW	64TQFP-EP

Image/Neural-network Processor

Part No.	Max. Freq.	VDD (I/O)	DSP				L2 RAM	DDR I/F	DMA	e-Fuse	ADC	CMP	Timers*2	Interface*3	Others*4	I/O	Power	Package
			Core	Cache	L1 RAM	FPU												
HT82V82	250MHz	3.0V~ 3.6V	2	I: 32KB D: 32KB ×2	I: 16KB D: 32KB ×2	1 ×2	256KB	DDR2 DDR3	EDMA: 2CH PDMA: 8CH	128-bit	1Msps 12-bit ×16	1	RTC×1 WDT×1 BFTM×2 GPTM×4	UART×4 SPI×3, I²C×2 CLSIF×2 CASIF×2 HSSPI SDIO EPI 8080 LCD I/F	AES-128 SHA-256 TG, LINFO SHDC JPG ENC HWE	40	750mW	256TFBGA

Note: 1. VDD Core: 0.9V~1.1V; VDD DDR: 1.425V~1.575V.
2. BFTM: Basic Function Timer, GPTM: General-Purpose Timers.
3. CLSIF: CMOS Line Sensor Interface; CASIF: CMOS Area Sensor Interface; HSSPI: 40MHz High Speed SPI; EPI: External Parallel Interface.
4. AES-128: Advanced Encryption Standard; SHA-256: Secure Hash Algorithm; TG: Sensor, LED & AFE Timing Generator; LINFO: Scan Line Information; SHDC: Shading Correction; JPG ENC: JPEG Encoder; HWE: Hardware Matrix & Neural Calculation Engine.

Miscellaneous

IGBT Driver

Part No.	Description	VIN	LDO	Level Shifter	Voltage Detect Protection	Package
HT45B1S	IGBT Driver with LDO and Voltage Detector	6.0V~24V	5.0V	√	√	8SOP

Timepiece

Part No.	VDD	V_{BAT}	I_{DD} (μA)	I_{BAT} (μA)	I_{STB} (μA)	External X'tal Osc.	Build in Memory (Bytes)	Oscillator Compensation	Package
HT1380A	2.0V~5.5V	—	1.0 at 5V	—	0.1	32.768kHz	—	—	8DIP
HT1381A									8SOP
HT1382	2.7V~5.5V	2.0V~5.5V	15 at 3V	1.2 at 3V	0.1	32.768kHz	4	√	8SOP, 10MSOP

Infrared / Encoder / Decoder

2^{12} Encoder / Decoder

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Data No.	Data Type	Trig.	Check Times	Package	Pair
HT12E	Encoder	2.4V~12V	8	4	0	—	$\overline{TE}$	—	18DIP, 20SOP	HT12D/12F
HT12D	Decoder	2.4V~12V	8	0	4	Latch	—	3	18DIP, 20SOP	HT12E
HT12F	Decoder	2.4V~12V	12	0	0	—	—	3	18DIP, 20SOP	HT12E

3^{9} Encoder

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Trig.	Package
HT6026	Encoder	4V~18V	0	9	$\overline{TE}$	16DIP/NSOP

Learning Encoder

Part No.	VDD	Addr. No.	Data No.	Trig.	Package
HT6P20B	2V~12V	22	2	Data Low	8DIP/SOP
HT6P20D		20	4		16DIP/NSOP

IR Remote Controller

Part No.	VDD	Addr. No.	Data No.	Key No.	Signal Gap Time	38kHz Carrier	Package
HT62104	2.0V~5.0V	2	7	8	4T	√	16DIP/NSOP
HT6220A	2.0V~3.6V	16	8	6	—	√	8SOP
				30			16NSOP
HT6221A	2.0V~3.6V	16	8	32	—	√	20SOP
HT6221B				48			
HT6222A	2.0V~3.6V	16	8	64	—	√	24SOP, Chip, Wafer

32-Bit MCU Programming Tools

Holtek is fully aware that the success of their microcontroller device range also depends upon the availability of high quality development tools. As a result, Holtek has developed a full suite of professional hardware and software tools to provide designers with an excellent set of development resources to ensure their application are designed and debugged as efficiently as possible.

In this section can be found details regarding which set of tools should be used for the HT32 series microcontrollers.

HT32 Series MCU

Device Part No.	Debug Adapter	Development Kit	Writer	e-Socket32
HT32F0006	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F0008	e-Link32 Pro	ESK32-30508, ESK32-20001, ESK32-21001	e-Writer32	ESKT3224QFN3B, ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT32ICPB
HT32F12345	e-Link32 Pro	ESK32-30106, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F12364	e-Link32 Pro	ESK32-30107, ESK32-20001, ESK32-21001	e-Writer32	ESKT3240QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F12365, HT32F12366	e-Link32 Pro	ESK32-30105, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32100LQFPB, ESKT32ICPB
HT32F1653, HT32F1654	e-Link32 Pro	ESK32-360, ESK32-370, ESK32-360SK	e-Writer32	ESKT3264LQFP7B, ESKT3248LQFPB, ESKT32ICPB
HT32F22366	e-Link32 Pro	N/A	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32100LQFPB, ESKT32ICPB
HT32F50220, HT32F50230	e-Link32 Pro	ESK32-30506, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3228SOPC, ESKT3224QFN3B, ESKT3233QFN4B, ESKT3244LQFPB, ESKT3248LQFPB, ESKT32ICPB
HT32F50231, HT32F50241	e-Link32 Pro	ESK32-30507, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3228SOPC, ESKT3224QFN3B, ESKT3233QFN4B, ESKT3244LQFPB, ESKT3248LQFPB, ESKT32ICPB
HT32F50343	e-Link32 Pro	ESK32-30515, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52220, HT32F52230	e-Link32 Pro	ESK32-30504, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT32ICPB
HT32F52231, HT32F52241	e-Link32 Pro	ESK32-30503, ESK32-20001, ESK32-21001	e-Writer32	ESKT3228SSOPB, ESKT3233QFN4B, ESKT3248LQFPB, ESKT32ICPB
HT32F52243, HT32F52253	e-Link32 Pro	ESK32-30505, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52331, HT32F52341	e-Link32 Pro	ESK32-30502, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3248LQFPB, ESKT32ICPB
HT32F52342, HT32F52352	e-Link32 Pro	ESK32-30501, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52344, HT32F52354	e-Link32 Pro	ESK32-30509, ESK32-20001, ESK32-21001	e-Writer32	ESKT3233QFN4B, ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F52357, HT32F52367	e-Link32 Pro	ESK32-30510, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT3280LQFPB, ESKT32ICPB
HT32F57331, HT32F57341	e-Link32 Pro	ESK32-30512, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT32ICPB
HT32F57342, HT32F57352	e-Link32 Pro	ESK32-30511, ESK32-20001, ESK32-21001	e-Writer32	ESKT3246QFNB, ESKT3248LQFPB, ESKT3264LQFP7B, ESKT3280LQFPB, ESKT32ICPB
HT32F59041	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT32ICPB
HT32F59741	e-Link32 Pro	N/A	e-Writer32	ESKT3264LQFPB, ESKT32ICPB
HT32F65230, HT32F65240	e-Link32 Pro	N/A	e-Writer32	ESKT3248LQFPB, ESKT32ICPB

Hardware

ICE

Model	Function	Support Software
e-Link32 Pro	On Chip Debug Support (OCDS) new debug adapter for HT32 series	Keil µVision, IAR EWARM

Programmer

Model	Function	Support Software
e-Writer32	HT32 series MCU Dedicated Writer	HOPE3000 For HT32 series MCU
e-Socket32	Adaptors used together with e-Writer32	HOPE3000 For HT32 series MCU

Development Kit

Model	Function	Note
ESK32-360	HT32F1653/1654 Development Board	HT32F1654 DVB + mini USB cable + 2.8 inches TFT-LCD Module * This board can be used with the e-Link32 Pro providing a complete development kit
ESK32-370	HT32F1653/1654 Development Board	HT32F1654 DVB + mini USB cable * This board can be used with the e-Link32 Pro providing a complete development kit
ESK32-300SK	32-bit Arm® Cortex®-M3 HT32F1656 Starter Kit	This board has a built-in e-Link32 USB debug adapter
ESK32-360SK	32-bit Arm® Cortex®-M3 HT32F1654 Starter Kit	This board has a built-in e-Link32 USB debug adapter
ESK32-30105	32-bit Arm® Cortex®-M3 HT32F12366 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30106	32-bit Arm® Cortex®-M3 HT32F12345 Starter Kit	This board has a built-in e-Link32 Pro USB debug adapter
ESK32-30107	32-bit Arm® Cortex®-M3 HT32F12364 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30501	32-bit Arm® Cortex®-M0+ HT32F52352 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30502	32-bit Arm® Cortex®-M0+ HT32F52341 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30503	32-bit Arm® Cortex®-M0+ HT32F52241 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30504	32-bit Arm® Cortex®-M0+ HT32F52230 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter

Hardware		
Development Kit		
ESK32-30505	32-bit Arm® Cortex®-M0+ HT32F52253 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30506	32-bit Arm® Cortex®-M0+ HT32F50230 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30507	32-bit Arm® Cortex®-M0+ HT32F50241 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30508	32-bit Arm® Cortex®-M0+ HT32F0008 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30509	32-bit Arm® Cortex®-M0+ HT32F52354 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30510	32-bit Arm® Cortex®-M0+ HT32F52367 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30511	32-bit Arm® Cortex®-M0+ HT32F57352Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30512	32-bit Arm® Cortex®-M0+ HT32F57341 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-30515	32-bit Arm® Cortex®-M0+ HT32F50343 Starter Kit	This board has a built-in e-Link32Pro USB debug adapter
ESK32-20001	HT32 Series Expansion Board Basic	Expansion Board for ESK32-30xxx
ESK32-21001	HT32 Series Expansion Board Plus	Expansion Board for ESK32-30xxx
ESK32-A2A31	2.8 inches TFT-LCD Module	2.8 inches SPI / EBI LCD Module * This module can be used with the ESK32-20001 / ESK32-21001 providing a complete development kit.

Software		
Software		
Model	**Function**	**Support Hardware**
HOPE3000 or 32Bits	e-Writer32 programmer software for HT32 series MCUs	e-Writer32
HT32 Flash Programmer	In-System / In-Application programmer software for HT32 series MCUs	All series of HT32 Development Board or Starter Kit. ESK32-xxx, ESK32-xxxSK, ESK32-30xxx
HT32 Keil Support Package	Integrated Keil development environment software for HT32 series MCUs	
HT32 IAR Support Package	Integrated IAR development environment software for HT32 series MCUs	
HT32 Virtual COM Driver	HT32 USB Virtual COM Driver setup program	e-Link32 Pro. All series of HT32 Development Board or Starter Kit with USB Virtual COM example.

e-Link32 Pro Debug Adapter

The e-Link32 Pro is a new generation debug adapter for Holtek's 32-bit microcontrollers allowing users to program and debug their programs on their target boards. By using the e-Link32 Pro together with the Keil µVision IDE or IAR EWARM IDE, users are provided with a suite of development tools for rapid MCU product development.

The e-Link32 Pro package includes the e-Link32 Pro debug adapter, flat cable and USB cable.

8-Bit MCU Programming Tools

Holtek is fully aware that success of their microcontroller device range also depends upon the availability of high quality development tools. As a result Holtek has developed a full suite of professional hardware and software tools to provide designers with an excellent set of development resources to ensure their applications are designed and debugged as efficiently as possible. In this section can be found details regarding which set of tools should be used for each microcontroller device.

Hardware		
ICE		
Model	**Function**	**Support Software**
HT-ICE	LPT Type in-circuit emulator	HT-IDE3000
e-ICE	USB Type in-circuit emulator	HT-IDE3000
e-Link	On Chip Debug Support(OCDS) Type MCU debug adapter	HT-IDE3000
	On Chip Debug Support (OCDS) debug adapter for HT85 series	Keil C51 Development Tools
e-FPCB (e-Link selected item)	OCDS EV Flex Cable Converter	—
Programmer		
Model	**Function**	**Support Software**
e-WriterPro	Universal Writer for OTP/Flash MCU	HOPE3000
e-Socket	Adaptors used together with e-WriterPro	HOPE3000
EIC-300	Slimmed-down ICP programmer for Flash MCU	HOPE3000
Development Kit		
Model	**Function**	**Note**
ESK-66F-A01	HT66F50 Development Board (Starter Kit for HT66F50)	(ESK-200 + ESK-201 + e-Link + M1001D + D1003C + mini USB cable + e-cable1225A)

Development Platform		
Model	**Function**	**Note**
Holtek USB Workshop	Development Platform for USB MCU	This board can be used with the ESK66FB-200 + e-Link.

Software*		
Software		
Model	**Function**	**Support Hardware**
HT-IDE3000	Integrated development Environment software for all series of Holtek MCU	HT-ICE, e-ICE, e-Link
HOPE3000	Integrated software for Holtek e-Writer series Programmers.	e-WriterPro, e-Writer plus
HOPE3000 for e-Link	Engineering programmer for HT8 Flash MCU	e-Link
Holtek USB Workshop	Holtek USB MCU Library Generator	ESK66FB-200 + e-Link
Holtek Touch Key Workshop	Touch Key development platform	e-Link, e-Isolator
I3000	HT8 Flash MCU with Bootloader ISP Programming Tool (Program MCU by Bootloader)	

Note: It is strongly recommended to download the latest version.

HT-IDE3000 Development Environment

The HT-IDE3000 is a fully integrated development system for the Holtek range of microcontrollers. Working in conjunction with the Holtek ICE hardware emulator, the HT-IDE3000 system provides a user friendly workbench to ensure the process of application program development and debug is as efficient and trouble free as possible. By combining all software tools, such as editor, cross assembler, linker, library manager, symbolic debuggers as well as hardware tools, application designers have all the tools required at their disposal to ensure rapid development and debug of their new designs. An HT-IDE3000 User's Guide is available for download from the Holtek website, which provides much more detailed information on the HT-IDE3000 development system.

The HT-IDE3000 development system software is available for free download from the Holtek website. To ensure that users are provided with the latest modifications and enhancements to the system and to support new device releases, Service Packs are regularly provided.

HT-ICE – Holtek In-Circuit Emulator

The HT-ICEs are multi-featured hardware emulators to assist designers with the rapid development of their Holtek MCU applications. Their expansive integrated hardware and software features, provide designers with a full suite of tools for rapid and easy product development. At the heart of the system is the hardware emulator, which can fully emulate Holtek 8-bit MCU devices in real time as well as providing full debug and trace integrated functions. The HT-ICE package includes the hardware mainboard platform, CD, flat cables, power adapter, power cord and printer cable.

HT-ICE USB cable allowing customers to connect the HT-ICE LPT connector to the computer USB port. The part number of this USB cable is CUSBICECABLE4A. Please contact us for purchasing details.

e-ICE

The e-ICE is Holtek's new generation of MCU in-circuit emulators that uses a real chip EV for device emulation. In this way a more accurate emulation of device function and characteristics can be implemented. Together with the HT-IDE3000 software development system the user is provided with a suite of development tools for rapid MCU product development.

Holtek New Universal Writer – e-WriterPro

The e-WriterPro can be used not only as a programming tool for all of Holtek's OTP and Flash devices during the development stage but can also be used for small to medium volume production purposes.

The e-WriterPro must be used together with a corresponding e-Socket according to the package type of the MCU that is to be programmed. Devices with the same package type require only a single e-Socket, thus reducing the problem of changing different adaptors for different IC part numbers.

For all available Holtek devices, the following e-Socket table shows which one should be used with which device package type.

e-Socket			
No.	**Product Name**	**Supported Package**	**Suggested Programming Times**
1	ESKT10MSOPA	8MSOP, 10MSOP	10,000
2	ESKT16NSOPC	8SOP, 14SOP, 16NSOP (Applicable beside the HT48RA0-6 series MCU)	10,000
3	ESKT16NSOPHIRCA	16NSOP (for HT48RA0-6 only)	10,000

e-Socket			
No.	**Product Name**	**Supported Package**	**Suggested Programming Times**
4	ESKT16QFNA	16QFN	5,000
5	ESKT20QFN4A	20QFN (4mm × 4mm)	5,000
6	ESKT20QFN5A	20QFN (5mm × 5mm)	5,000
7	ESKT20TSSOPA	16TSSOP, 20TSSOP	10,000
8	ESKT28SSOPC	16SSOP(150mil), 20SSOP(150mil), 24SSOP(150mil), 28SSOP(150mil) (Applicable beside the HT48RA0-6 series MCU)	10,000
9	ESKT28SSOPHIRCA	20SSOP (for HT48Ra0-6 only)	10,000
10	ESKT28SOPC	16SOP, 18SOP, 20SOP, 24SOP, 28SOP	10,000
11	ESKT28SSOPHIRCA	20SSOP (for HT48RA0-6 only)	10,000
12	ESKT30SSOPA	20SSOP(209mil), 24SSOP(209mil), 28SSOP(209mil)	10,000
13	ESKT32LQFPA	32LQFP	10,000
14	ESKT32QFNA	32QFN	5,000
15	ESKT32TSOPA	32TSOP	5,000
16	ESKT40DIPC	8DIP, 16DIP, 18DIP, 20DIP, 40DIP, 22SKDIP, 24SKDIP, 28SKDIP	25,000
17	ESKT40QFN5A	40QFN (5mm × 5mm)	5,000
18	ESKT40QFN6A	40QFN (6mm × 6mm)	5,000
19	ESKT44QFPA	44QFP, 44LQFP (FP 3.2mm)	10,000
20	ESKT44LQFPC	44LQFP (FP 2.0mm)	10,000
21	ESKT46QFNA	46QFN (6.5mm × 4.5mm)	5,000
22	ESKT48QFNA	48QFN	5,000
23	ESKT48LQFPA	48LQFP (Applicable beside the HT49RA0-6 & HT32Fxx series MCU)	10,000
24	ESKT48LQFPHIRCA	48LQFP(for HT49RA0-6 only)	10,000
25	ESKT52QFPA	52QFP	10,000
26	ESKT52LQFPA	52LQFP	5,000
27	ESKT56SSOPA	48SSOP, 56SSOP	10,000
28	ESKT64LQFP7A	64LQFP (7mm × 7mm) (Applicable beside the HT32Fxx series MCU)	5,000
29	ESKT64LQFP10A	64LQFP (10mm × 10mm) (Applicable beside the HT32Fxx series MCU)	10,000
30	ESKT80LQFPA	80LQFP	10,000
31	ESKT100QFPA	100QFP	5,000
32	ESKT100LQFPA	100LQFP (Applicable beside the HT32Fxx series MCU)	5,000
33	ESKT128QFPA	128QFP	10,000
34	ESKT144LQFPA	144LQFP	5,000

Note: 1. Data in parentheses next to each package type shows the actual width of the IC package.
2. ESKxxxxxC is completely compatible with ESKxxxxxxA.

8-Bit MCU Tools Indexing Table

The following table allows the correct tools to be quickly located against a device part number. In instances where tools are not listed for specific devices, this may infer that such tools are not required. Note that the "HT-ICE(S)" ICE type stands for the HT-ICE set and the corresponding I/O card.

8-Bit MCU Tools					
Device Part No.	**ICE Type**	**Tool Part No.**	**Programming Timing**	**ICP Type / ICPDA / ICPCK**	**OCDSDA / OCDSCK**
BA45F0082	e-Link	e-Link + BA45V0082	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45FH0082		e-Link + BA45VH0082	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5220	e-Link	e-Link + BA45V5220 + (e-FADP08N3 or e-FADP10N3)	Flash Type-23	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BA45F5240		e-Link + BA45V5240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5240-2		e-Link + BA45V5240-2	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5250		e-Link + BA45V5250	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F0096	Demo Board	e-Link + DM20180501-BA45F0096	Flash Type-9	ICP-2C / PA0 / PA2	—
BA45F5542	e-Link	e-Link + BA45V5542	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5542-2		e-Link + BA45V5542-2	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F5640	e-Link	e-Link + BA45V5640	Flash Type-9	ICP-2C / PA0 / PA2	PA0/PA2
BA45F5650		e-Link + BA45V5650	Flash Type-9B	ICP-2C / PA0 / PA2	PA0/PA2
BA45F6630	e-Link	e-Link + BA45V6630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6622		e-Link + BA45V6622	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
BA45F6730	e-Link	e-Link + BA45V6730	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC48R2021	e-ICE	M1001D + D5003A	OTP Type-2B	ICP-1B	
BC66F2342	e-Link	e-Link + BC66V2342	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2

8-Bit MCU Tools					
Device Part No.	**ICE Type**	**Tool Part No.**	**Programming Timing**	**ICP Type / ICPDA / ICPCK**	**OCDSDA / OCDSCK**
BC45F7930	e-Link	e-Link + BC45V7930	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC45F7940		e-Link + BC45V7940	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F3652	e-Link	e-Link + BC66V3652	Flash Type-31	ICP-2C / PA0 / PA2	PA0/PA2
BC66F3662		e-Link + BC66F3662	Flash Type-31	ICP-2C / PA0 / PA2	PA0/PA2
BC66F5652	e-Link	e-Link + BC66V5652	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F5662		e-Link + BC66F5662	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F840	e-Link	e-Link + BC66V840	Flash Type-9	ICP-2C / PB4 / PB2	PB4 / PB2
BC68F2123	e-Link	e-Link + BC68V2123	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2130		e-Link + BC68F2130	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2140		e-Link + BC68F2140	Flash Type-16	ICP-2C / PA0 / PA2	PA0 / PA2
BC66F2430	e-Link	e-Link + BC66V2430	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BC68F2332	e-Link	e-Link + DEV-BC68F2332	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
BH45F68	e-Link	e-Link + BH45V68	Flash Type-9C	ICP-2C / PA0 / RESB	PA0 / RESB
BH66F2232	e-Link	e-Link + BH66V2232	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2260		e-Link + BH66V2260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2260		e-Link + BH67V2260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2261		e-Link + BH67V2261	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2262		e-Link + BH67V2262	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2270		e-Link + BH67V2270	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2470	e-Link	e-Link + BH66V2470	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2470		e-Link + BH67V2470	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2480		e-Link + BH67V2480	Flash Type-9D	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2632	e-Link	e-Link + BH66V2632	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2650		e-Link + BH66V2650	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2652, BH66F2652-2		e-Link + BH66V2652	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2662, BH66F2662-2		e-Link + BH66V2662	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F2660		e-Link + BH66V2660	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2662		e-Link + BH67V2662	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F5232	e-Link	e-Link + BH66V5232-10 + e-FADP10N3	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BH66F5233		e-Link + BH66V5233	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
		e-Link + BH66V5233-10 + e-FADP10N3	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BH66F5242		e-Link + BH66V5242	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5235		e-Link + BH67V5235	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5245		e-Link + BH67V5245	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F5252		e-Link + BH66V5252	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F5250		e-Link + BH66V5250	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5250		e-Link + BH67V5250	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5260		e-Link + BH67V5260	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5270		e-Link + BH67V5270	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F5362	e-Link	e-Link + BH66F5362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F71252	e-Link	e-Link + BH66V71252	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F71652	e-Link	e-Link + BH66V71652	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH66F71662		e-Link + BH66V71662	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2132	e-Link	e-Link + BH67V2132	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2485	e-Link	e-Link + BH67V2485	Flash Type-9D	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2742	e-Link	e-Link + BH67V2742	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2752		e-Link + BH67V2752	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F2762		e-Link + BH67V2762	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BH67F5362	e-Link	e-Link + BH67F5362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F0044	e-Link	e-Link + BP45V0044	Flash Type-21	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F0102	e-Link	e-Link + BP45V0102	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F0106		e-Link + BP45V0106	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F1130		e-Link + BP45V1130	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F1330		e-Link + BP45V1330	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
BP45F4MB	e-Link	e-Link + BP45V4MB	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BP45FH6N	e-Link	e-Link + BP45VH6N	Flash Type-9B	ICP-2C / PA0 / PA7	PA0 / PA7
BS45F3232	e-Link	e-Link + BS45V3232	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS45F3235		e-Link + BS45V3235	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2

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Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCDSDA / OCDSCK
BS45F3832	e-Link	e-Link + BS45V3832-10 + (e-FADP08N3 or e-FADP10N3)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS45F3833		e-Link + BS45V3833	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS45F5830	e-Link	e-Link + BS45V5830	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS45F5831		e-Link + BS45V5831	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS45F5832		e-Link + BS45V5832	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS45F5833		e-Link + BS45V5833	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F340	e-Link	e-Link + BS66V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F350		e-Link + BS66V350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F360		e-Link + BS66V360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F370		e-Link + BS66V370	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F340C	e-Link	e-Link + BS66V340C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F350C		e-Link + BS66V350C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS66F360C		e-Link + BS66V360C	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS66FV340	e-Link	e-Link + BS66VV340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS66FV350		e-Link + BS66VV350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS66FV360		e-Link + BS66VV360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F2563	e-Link	e-Link + BS67V2563	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F340	e-Link	e-Link + BS67V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F350		e-Link + BS67V350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F360		e-Link + BS67V360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F370		e-Link + BS67V370	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS67F350C	e-Link	e-Link + BS67V350C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS82B12A-3	e-Link	e-Link + BS82BV12A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS82C16A-3		e-Link + BS82CV16A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS82D20A-3		e-Link + BS82DV20A-3	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS83A02A-4	e-Link	e-Link + BS83AV02A + (Optional e-FADP06T)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83A04A-3, BS83A04A-4		e-Link + BS83V04A + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83B04A-4		e-Link + BS83BV04A + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83B08A-3, BS83B08A-4		e-Link + 83V08AV15	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83B12A-3, BS83B12A-4		e-Link + BS83V12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83B16A-3, BS83B16A-4		e-Link + BS83V16A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83A01C	e-Link	e-Link + BS83AV01C	Flash Type-23	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83A02C		e-Link + BS83AV02C	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83A04C		e-Link + BS83AV04C	Flash Type-24	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83B04C		e-Link + BS83BV04C + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83B08C		e-Link + BS83BV08C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83B12C		e-Link + BS83BV12C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83B16C		e-Link + BS83BV16C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83B24C		e-Link + BS83BV24C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83C40C		e-Link + BS83CV40C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS83A02L	e-Link	e-Link + BS83AV02L	Flash Type-23	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS83B04L		e-Link + BS83BV04L + (Optional e-FADP08N-BS or e-FADP10M-BS)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
BS84B06A-3	e-Link	e-Link + BS84BV06A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS84B08A-3		e-Link + BS84V08A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS84C12A-3		e-Link + BS84V12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS84B08C	e-Link	e-Link + BS84BV08C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS84C12C		e-Link + BS84CV12C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS86B12A-3	e-Link	e-Link + BS86BV12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS86C16A-3		e-Link + BS86CV16A-3	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS86D20A-3		e-Link + BS86DV20A-3	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS86C08C	e-Link	e-Link + BS86CV08C	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS86D12C		e-Link + BS86DV12C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS86D20C		e-Link + BS86DV20C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
BS86E16C		e-Link + BS86EV16C	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
BS86DH12C	e-Link	e-Link + BS86DHV12C	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2

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Device Part No.	**ICE Type**	**Tool Part No.**	**Programming Timing**	**ICP Type / ICPDA / ICPCK**	**OCDSDA / OCDSCK**
BS87B12A-3	e-Link	e-Link + BS87BV12A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS87C16A-3		e-Link + BS87CV16A	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
BS87D20A-3		e-Link + BS87DV20A	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT37A30, HT37A40, HT37A50, HT37A60	Demo Board	HT-VMS-MB	—	—	
HT37B90			—	—	
HT45F0004	e-Link	e-Link + HT45V0004	Flash Type-9B	ICP-2C / PB0 / PB3	PB0 / PB3
HT45F0057		e-Link + HT45V0057	Flash Type-9	ICP-2C / PB0 / PB3	PB0 / PB3
HT45F0058		e-Link + HT45V0058	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F0060	e-Link	e-Link + HT45V0060 + (optional e-FADP08N3 or e-FADP10N3)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F0062		e-Link + HT45V0062	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F0063		e-Link + HT45V0063	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F0074	e-Link	e-Link + HT45V0074	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F23A	e-ICE	M1001D + D1088A	Flash Type-6	ICP-2B	
HT45F24A		M1001D + D1095A	Flash Type-6	ICP-2B	
HT45F3230	e-Link	e-Link + HT45V3230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F3630	e-Link	e-Link + HT45V3630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F39, HT45F391	e-Link	e-Link + HT45V39	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4050	e-Link	e-Link + HT45V4050	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4630	e-Link	e-Link + HT45V4630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4830	e-Link	e-Link + HT45V4830	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT45F4840		e-Link + HT45V4840	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4842		e-Link + HT45V4842	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F4MA	e-Link	e-Link + HT45V4MA	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4MA		e-Link + HT45VH4MA	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4MA-1		e-Link + HT45VH4MA-1	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45F4N		e-Link + HT45V4N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH4N		e-Link + HT45VH4N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45F5N		e-Link + HT45V5N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45FH5N		e-Link + HT45VH5N	Flash Type-9	ICP-2C / PA6 / PA7	PA6 / PA7
HT45F56	e-Link	e-Link+HT45V56 + (Optional FPCB)	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q-1	e-Link	e-Link + HT45V5Q-1	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q-2		e-Link + HT45V5Q-2	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5Q-3		e-Link + HT45V5Q-3	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F5V	e-Link	e-Link + HT45V5V	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F6530	e-Link	e-Link + HT45V6530	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F67	e-Link	e-Link + HT45V67	Flash Type-9C	ICP-2C / PA0 / RES	PA0 / RES
HT45F8550	e-Link	e-Link + HT45V8550	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45F8560		e-Link + HT45F8560	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT45FH23A	e-ICE	M1001D + D1088A + ESK-B0023-100	Flash Type-6	ICP-2B	
HT45FH24A		M1001D + D1095A + ESK-B0023-100	Flash Type-6	ICP-2B	
HT66F002	e-Link	e-Link + HT66V002 + (Optional e-FADP08N or e-FADP10M2)	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT66F0021		e-Link + HT66V0021 + e-FADP08N	Flash Type-23	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT66F0025		e-Link + HT66V0025 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT66F007		e-Link + HT66V007 + (Optional e-FADP08D or e-FADP08N or e-FADP10M)	Flash Type-9	ICP-2C / PA0 / PA1	OCDSDA / OCDSCK
HT66F008		e-Link + HT66V008 + (Optional e-FADP08D or e-FADP08N or e-FADP10M)	Flash Type-9	ICP-2C / PA0 / PA1	OCDSDA / OCDSCK
HT66F003	e-Link	e-Link + HT66V003	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0031		e-Link + HT66V0031	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F004		e-Link + HT66V004	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0041		e-Link + HT66V0041	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0042	e-Link	e-Link + HT66V0042	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0082		e-Link + HT66V0082		ICP-2C / PA0 / PA2	PA0 / PA2
HT66F017	e-ICE	M1001D + D1070A	Flash Type-6A	ICP-2B	

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Device Part No.	ICE Type	Tool Part No.	Programming Timing	ICP Type / ICPDA / ICPCK	OCDSDA / OCDSCK
HT66F0172, HT66F0174	e-Link	e-Link + HT66V0174	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0175		e-Link + HT66V0175	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0176		e-Link + HT66V0176	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F018		e-Link + HT66V018	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0181		e-Link + HT66V0181	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0184		e-Link + HT66V0184	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0185		e-Link + HT66V0185	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F0186		e-Link + HT66V0186	Flash Type-14	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F019		e-Link + HT66V019	Flash Type-9B	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT66F0195		e-Link + HT66V0195	Flash Type-9B	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT66F3185		e-Link + HT66V3185	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F3195		e-Link + HT66V3195	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2350	e-Link	e-Link + HT66V2350	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2360		e-Link + HT66V2360	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2362		e-Link + HT66F2362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2370		e-Link + HT66V2370	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2390		e-Link + HT66V2390	Flash Type-10D	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2630	e-Link	e-Link + HT66V2630	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2730	e-Link	e-Link + HT66V2730	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2740		e-Link + HT66V2740	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F302	e-Link	e-Link + HT66V302 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT66F303		e-Link + HT66V303	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F317	e-Link	e-Link + HT66V317	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F318		e-Link + HT66V318	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F319		e-Link + HT66V319	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F3370H	e-Link	e-Link + HT66V3370H	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4360	e-Link	e-Link + HT66V4360	Flash Type-7C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4370		e-Link + HT66V4370	Flash Type-7C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4390		e-Link + HT66V4390	Flash Type-15J	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4530	e-Link	e-Link + HT66V4530	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4540		e-Link + HT66V4540	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F4550		e-Link + HT66V4550	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F489	e-Link	e-Link + HT66V489	Flash Type-9B	ICP-2C	
HT66FB540	e-Link	e-Link + HT66VB540	Flash Type-7A	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB542		e-Link + HT66VB542	Flash Type-7A	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB550		e-Link + HT66VB550	Flash Type-7A	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB560		e-Link + HT66VB560	Flash Type-7B	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB570		e-Link + HT66VB570	Flash Type-7E	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB582		e-Link + HT66VB582	Flash Type-15N	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB572	e-Link	e-Link + HT66VB572	Flash Type-15A	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB574		e-Link + HT66VB574	Flash Type-15E	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT66FB576		e-Link + HT66VB576	Flash Type-15E	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT68FB541		e-Link + HT68VB541	Flash Type-22A	ICP-2C / PA0 / PA2	PA0 / PA2
HT68FB571		e-Link + HT68VB571	Flash Type-22A	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5230	e-Link	e-Link + HT66VM5230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5240		e-Link + HT66VM5240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5440		e-Link + HT66VM5440	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FM5340	e-Link	e-Link + HT66VM5340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV130	e-Link	e-Link + HT66VV130	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV140		e-Link + HT66VV140	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV150		e-Link + HT66VV150	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV160		e-Link + HT66VV160	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FV240	e-Link	e-Link + HT66VV240	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FW2230	e-Link	e-Link + HT66VW2230	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT66FW2350		e-Link + HT66VW2350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2

8-Bit MCU Tools					
Device Part No.	**ICE Type**	**Tool Part No.**	**Programming Timing**	**ICP Type / ICPDA / ICPCK**	**OCDSDA / OCDSCK**
HT67F2350	e-Link	e-Link + HT67V2350	Flash Type-10B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2360		e-Link + HT67V2360	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2362		e-Link + HT67F2362	Flash Type-31	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2370		e-Link + HT67V2370	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2390		e-Link + HT67V2390	Flash Type-10D	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2432	e-Link	e-Link + HT67V2432	Flash Type-24	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F2567	e-Link	e-Link + HT67V2567	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F30, HT67F40	e-ICE	M1001D + D2004C	Flash Type-6	ICP-2B	
HT67F50, HT67F60		M1001D + D2004D	Flash Type-6	ICP-2B	
HT67F5652	e-Link	e-Link + HT67V5652	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F60A	e-Link	e-Link + HT67V60A	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F70A		e-Link + HT67V70A	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F86A		e-Link + HT67V86A	Flash Type-9D	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F489	e-Link	e-Link + HT67V489	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT67F4892		e-Link + HT67V4892	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT68F0017	e-Link	e-Link + HT68V0017 (Optional e-FADP08N3 or e-FADP10N3)	Flash Type-20	ICP-2C / PA0 / PA2	OCDSDA / OCDSCK
HT68F002		e-Link + HT68V002 + (Optional e-FADP08N or e-FADP10M2)	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT68F0025		e-Link + HT68V0025 + (Optional e-FADP08N or e-FADP10N2)	Flash Type-9	ICP-2C / PA0 / PA7	OCDSDA / OCDSCK
HT68F003		e-Link + HT68V003	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT68F0036		e-Link + HT68V0036	Flash Type-23	ICP-2C / PA0 / PA2	PA0 / PA2
HT68FB240	e-Link	e-Link + HT68VB240	Flash Type-7A	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT68FB550	e-Link	e-Link + HT68VB550	Flash Type-7A	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT68FB560		e-Link + HT68VB560	Flash Type-7B	ICP-2C / UDN / $\overline{\text{RES}}$	PA0 / $\overline{\text{RES}}$
HT67F370	e-Link	e-Link + HT67V370	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT69F340		e-Link + HT69V340	Flash Type-9	ICP-2C / PA0 / PA2	PA0 / PA2
HT69F350		e-Link + HT69V350	Flash Type-9B	ICP-2C / PA0 / PA2	PA0 / PA2
HT69F360		e-Link + HT69V360	Flash Type-9C	ICP-2C / PA0 / PA2	PA0 / PA2
HT66F2560	e-Link	e-Link + HT66V2560	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT69F2562		e-Link + HT69V2562	Flash Type-10C	ICP-2C / PA0 / PA2	PA0 / PA2
HT86B10, HT86B30, HT86B60	HT-ICE(S)	CICE86B000008A	—	—	

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