Features	CSM32RV003	CSM32RV20	CH32V003	CH32X035	CH32L103	CH32V103
RISC-V core	RV32IMAC	RM32IMAC	RV32EC	RM32IMAC	RM32IMAC	RM32IMAC
Max. frequency	32MHz	32MHz	48MHz	48MHz	96MHz	80MHz
SRAM	4K	4K	2K	20K	20K	20K
Flash	32K	40K	16K	62K	64K	64K
NVM	4.5K	512B	64B	256B	256B	128B
SPI	1	2	1	1	2	2
I2C	1	1	1	1	2	2
UART	2	4	1	4	4	3
USB	-	-	-	FS + PD	FS + PD	FS
ADC bits	13/14/15/16	13/14/15/16	10	12	12	12
ADC channels	10	11	8	14	10	16
Touch keys	-	9	-	14	10	16
Comparators	-	3	1	3	3	3
Advanced timer with compl. outputs	2 x 4 channels	2 x 4 channels	1 x 4 channels	2 x 4 channels	1 x 4 channels	1 x 4 channels
General purpose timer	-	-	1 x 4 channels	1 x 4 channels	2 x 4 channels	3 x 4 channels
SysTick	64-bit	64-bit	32-bit	64-bit	64-bit	64-bit
Wake-up timer	yes	yes	-	-	-	-
Independent watchdog	yes	yes	yes	yes	yes	yes
Window watchdog	-	-	yes	yes	yes	yes
Low voltage detector	yes	yes	-	yes	yes	yes
RTC	yes	yes	-	-	yes	yes
32-bit TRNG	yes	yes	-	-	-	-
Low-power modes	4	4	2	3	3	3
Lowest power consumption	< 0.6µA	< 1µA	9.6µA	56µA	0.37µA	1.6µA
Max. GPIO	18	30	18	60	37	51
External interrupts on GPIO lines	15	16	1	24	16	16
1-wire serial debug interface	-	-	yes	-	-	-
2-wire serial debug interface	-	-	-	yes	yes	yes
cJTAG 2-wire debug interface	yes	yes	-	-	-	-
Serial port ISP	-	yes	-	-	-	-
Wireless ISP	-	with external Si24R1	-	-	-	-
Working voltage range	1.8 ~ 5.5V	1.8 ~ 5.5V	2.7 ~ 5.5V	2 ~ 5.5V	1.8 ~ 3.6V	2.7 ~ 5.5V
Working temperature range	-40 ~ 105°C	-40 ~ 105°C	-40 ~85°C	-40 ~85°C	-40 ~85°C	-40 ~85°C
SOP8	-	-	yes	-	-	-
SOP16	-	-	yes	-	-	-
TSSOP20	yes	yes	yes	yes	yes	-
QSOP28				yes	yes	
QFN20	-	yes	yes	yes	yes	-
QFN28				yes	-	
QFN32	-	yes	-	-	yes	-
QFN48	-	-	-	-	-	yes
LQFP48	-	-	-	yes	yes	yes
LQFP64	-	-	-	yes	-	yes