

Teensy 3.6

MK66FX1M0VMD18

Data sheet: http://cache.nxp.com/files/32bit/doc/data_sheet/K66P144M180SF5V2.pdf

Reference manual: http://cache.nxp.com/files/32bit/doc/ref_manual/K66P144M180SF5RMV2.pdf

Mask Set Errata for Mask 0N65N: http://cache.nxp.com/files/32bit/doc/errata/KINETIS_K_0N65N.pdf?fsrch=1&sr=1&pageNum=1

Summary: http://www.nxp.com/webapp/search/partparamdetail.framework?PART_NUMBER=MK66FN2M0VMD18&lang_cd=en

2.2.1 Voltage and current operating requirements

Table 1. Voltage and current operating requirements

Symbol	Description	Min.	Max.	Unit	Notes
V _{DD}	Supply voltage	1.71	3.6	V	
V _{DDA}	Analog supply voltage	1.71	3.6	V	
V _{DD} – V _{DDA}	V _{DD} -to-V _{DDA} differential voltage	–0.1	0.1	V	
V _{SS} – V _{SSA}	V _{SS} -to-V _{SSA} differential voltage	–0.1	0.1	V	
V _{BAT}	RTC battery supply voltage	1.71	3.6	V	
V _{IH}	Input high voltage <ul style="list-style-type: none">2.7 V ≤ V_{DD} ≤ 3.6 V1.71 V ≤ V_{DD} ≤ 2.7 V	0.7 × V _{DD}	—	V	
		0.75 × V _{DD}	—	V	
V _{IL}	Input low voltage <ul style="list-style-type: none">2.7 V ≤ V_{DD} ≤ 3.6 V1.71 V ≤ V_{DD} ≤ 2.7 V	—	0.35 × V _{DD}	V	
		—	0.3 × V _{DD}	V	
V _{HYS}	Input hysteresis	0.06 × V _{DD}	—	V	
I _{ICDIO}	Digital ¹ input pin negative DC injection current (except RTC_WAKEUP pins) — single pin <ul style="list-style-type: none">V_{IN} < V_{SS}-0.3V	-5	—	mA	
I _{ICAIO}	Analog ¹ input pin DC injection current — single pin <ul style="list-style-type: none">V_{IN} < V_{SS}-0.3V (Negative current injection)	-5	—	mA	
I _{ICcont}	Contiguous pin DC injection current —regional limit, includes sum of negative injection currents of 16 contiguous pin <ul style="list-style-type: none">Negative current injection	-25	—	mA	
V _{ODPU}	Pseudo Open drain pullup voltage level	V _{DD}	V _{DD}	V	
V _{RAM}	V _{DD} voltage required to retain RAM	1.2	—	V	
V _{RFVBAT}	V _{BAT} voltage required to retain the VBAT register file	V _{POR} V _{BAT}	—	V	

Table 3. VBAT power operating requirements

Symbol	Description	Min.	Typ.	Max.	Unit	Notes
V _{POR_VBAT}	Falling VBAT supply POR detect voltage	0.8	1.1	1.5	V	

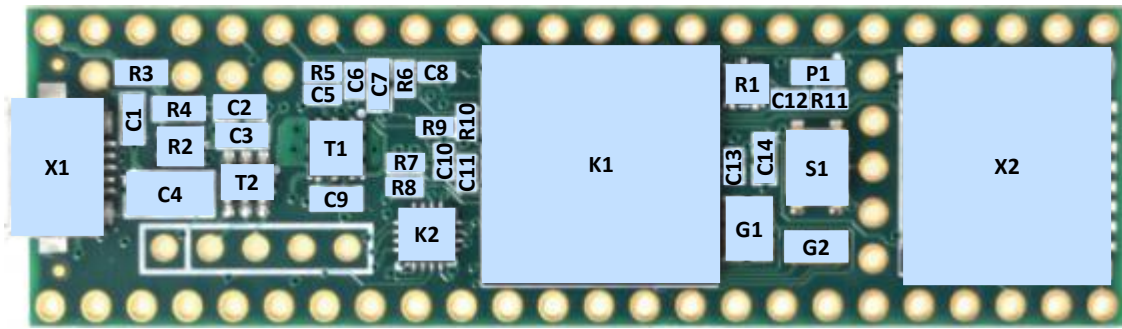
Audio	Prop	Native	Eth	I2S	Touch	I2C	CAN	SPI	Serial	Analog	PWM	Digital											Digital	PWM	Analog	Serial	SPI	CAN	I2C	Touch	I2S	Eth	Native	Prop	Audio								
GND	GND											GND											Vin											5Vpower									
		B16			T			MOSI1	RX1			0																					AudioGND	PotiGND									
		B17			T			miso1	TX1			1																					3Vpower	+3.3V									
	IRQ	D0									P	2											23	P	A9				T	LRCK	C2		LRCLK										
		A12	RXD1	tx0		SCL2	TX0				P	3											22	P	A8				T	TX0	C1		TX										
		A13	RXD0	lrck		SDA2	RX0				P	4											21	P	A7	rx1	CS0, mosi1					D6											
	AMP_EN	D7						miso1	tx1		P	5											20	P	A6		CS0, sck1					D5											
MEM_CS	MEM_CS	D4									P	6											19		A5			SCL0	T		TMR0	B2	SCL	SCL									
MOSI	LED_EN	D2				scl0		mosi0	RX3		P	7											18		A4			SDA0	T		TMR1	B3	SDA	SDA									
		D3				sda0		niso0	TX3		P	8											17	P	A3			sda0	T		MDC	B1											
BCLK		C3		BCK				CS0	RX2		P	9											16	P	A2			scl0	T		MDIO	B0											
SDCS		C4						CS0	TX2		P	10											15		A1		CS0			T	tx1	C0		VOL									
MCLK	MOSI	C6		MCK				MOSIO				11											14	P	A0		sck0					D1		SCLK									
MISO	MISO	C7						MIS00				12											13	(LED)			SCK0				RX0	C5	SCK	RX									
												3.3V																					GND										
		E26	CLK									24																					DAC1	A22									
		A5	RXER	bck								25																					DAC0	A21									
		A14	RXDV	tx1		scl2			tx1			26											39		A20		miso0				mck	TXD01	A17										
		A15	TXEN	rx0				sck0	rx1			27											38	P	A19			SDA1		rx1		C11											
		A16	TXD0	tx1				mosi0				28											37	P	A18			SCL1				C10											
		B18		bck	T		tx0				P	29											36	P	A17							C9											
		B19		lrck	T		rx0				P	30											35	P	A16					mck		C8											
		B10						CS1	RX4	A12		31											34		A15	RX5		RX1	sda0			E25											
		B11						SCK1	TX4	A13		32											33		A14	TX5		TX1	scl0			E24											

23	P	A9				T	LRCK	C2		LRCLK		
22	P	A8				T	TX0	C1		TX		
21	P	A7	rx1	CS0, mosi1				D6				
20	P	A6		CS0, sck1				D5				
19		A5				SCL0	T		TMR0	B2	SCL	SCL
18		A4				SDA0	T		TMR1	B3	SDA	SDA
17	P	A3				sda0	T		MDC	B1		
16	P	A2				scl0	T		MDIO	B0		
15		A1		CS0			T	tx1	C0		VOL	
14	P	A0		sck0				D1		SCLK		
13	(LED)			SCK0				RX0	C5	SCK	RX	
GND												
DAC1		A22										
DAC0		A21										
39		A20		miso0				mck	TXD01	A17		
38	P	A19				SDA1		rx1	C11			
37	P	A18				SCL1			C10			
36	P	A17							C9			
35	P	A16						mck	C8			
34		A15	RX5			RX1	sda0		E25			
33		A14	TX5			TX1	scl0		E24			



Based on a spreadsheet by Ben: <https://forum.pjrc.com/threads/34808-K66-Beta-Test?p=115072&viewfull=1#post115072>

Pin				
70	Temp Sensor			
71	Vref			



	Part	Description	MFG	MPN
?	C1	Capacitor, 2.2 μ F ?		
?	C2	Capacitor, 2.2 μ F ?		
?	C3	Capacitor, 2.2 μ F ?		
?	C4	Capacitor, 150 μ F ?		
?	C5	Capacitor, 0.1 μ F ?		
?	C6	Capacitor, 0.1 μ F ?		
?	C7	Capacitor, 2.2 μ F ?		
?	C8	Capacitor, 0.1 μ F ?		
?	C9	Capacitor, 2.2 μ F ?		
?	C10	Capacitor, 0.1 μ F ?		
?	C11	Capacitor, 0.1 μ F ?		
?	C12	Capacitor, 0.1 μ F ?		
?	C13	Capacitor, 0.1 μ F ?		
?	C14	Capacitor, 2.2 μ F ?		
?	C15	Capacitor, 0.1 μ F ?		
?	G1	Crystal 16Mhz		
?	G2	Crystal 32.768 kHz		
?	P1	LED		
ok	R1	dual Schottky barrier rectifier	NXP	PMEG4010CPA
ok	R2	dual Schottky barrier rectifier	NXP	PMEG4010CPA
?	R3			
?	R4			
?	R5			
?	R6	Ferrite ?		
?	R7	Resistor, 33R		
?	R8	Resistor, 33R		
?	R9	Ferrite ?		
?	R10			
?	R11	Resistor, 470R		
ok	T1	LDO 3.3V	Texas Instruments	LP38691SDX-3.3/NOPB
ok	T2	Current Limit Switch and D+/D- ESD Protection	Texas Instruments	TPD3S014
ok	K1	Microcontroller	NXP	MK66FX1M0VMD18
ok	K2	Microcontroller (with bootloader)	NXP	MKL02Z32VFG4
?	S1	Switch		
ok	X1	Micro USB	Amphenol FCI	10118194-0001LF
ok	X2	Micro SD card connector	Hirose	DM3D-SF