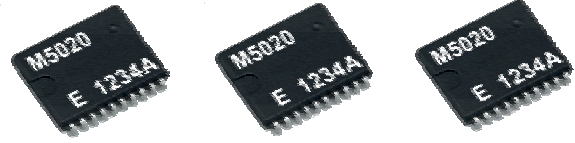




CRYSTAL OSCILLATOR
MULTI-OUTPUT 32.768 kHz and 48 MHz

MG - 5020JE

- Frequency range : 32.768 kHz and 48.00512 MHz
- Supply voltage : 32.768 kHz oscillation circuit 1.8 V to 3.6 V
48 MHz oscillation circuit 2.7 V to 3.6 V.
- Built-in crystal : 32.768 kHz crystal unit
- Thickness : 1.5 mm Max.



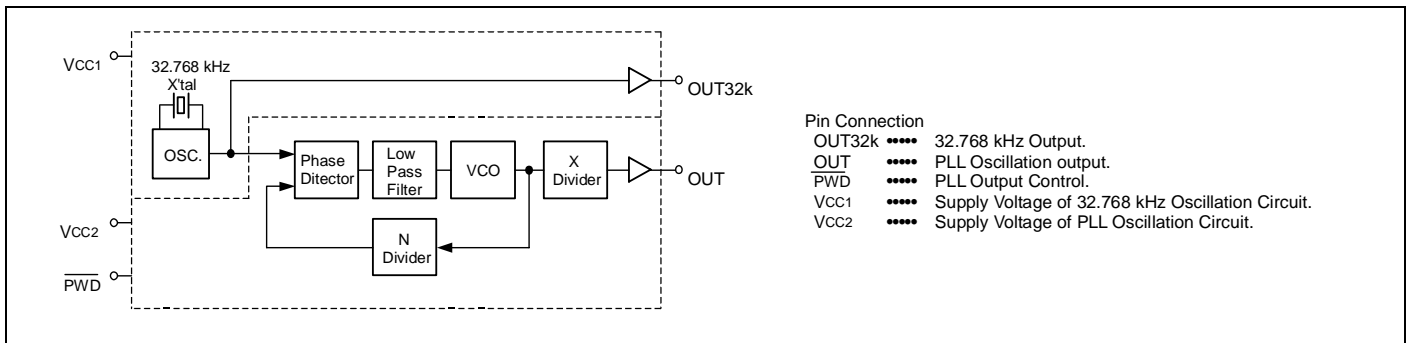
Actual size



Specifications (characteristics)

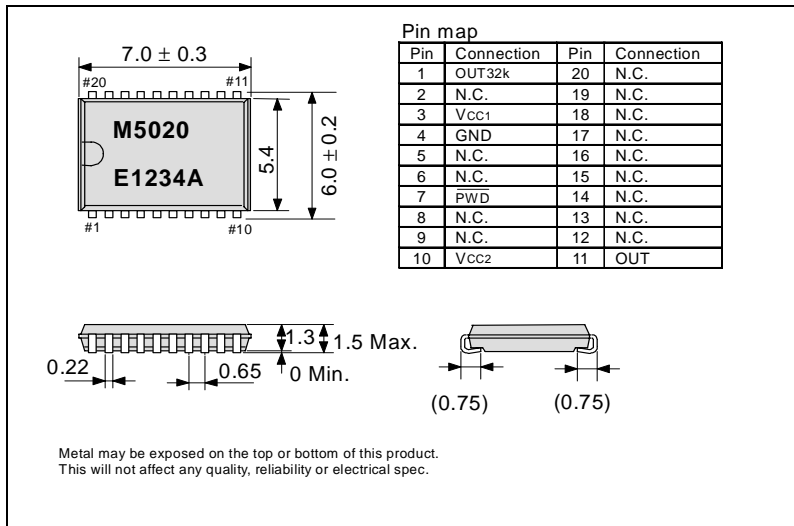
Item	Symbol	Specifications	Remarks
Output frequency range	f ₀	32.768 kHz	OUT32k - pin
		48.005120 MHz	OUT - pin
Supply voltage	V _{CC}	2.7 V to 3.6 V	PLL Output
	V _{BK}	1.8 V to 3.6 V	32.768 kHz Output
Storage temperature	T _{stg}	-55 °C to +125 °C	Store as bare product after unpacking
Operating temperature	T _{use}	-40 °C to +85 °C	
Frequency tolerance	f _{tol(osc)}	5 ±23 × 10 ⁻⁶	+25 °C, V _{CC} =3.0 V
Current consumption 1 (PLL Stopping)	I _{CC1}	3 μA Max.	V _{CC} =1.8 V to 3.6 V PWD =GND OUT32 k=No load condition
Current consumption 2 (PLL Working)	I _{CC2}	15 mA Max.	V _{CC} =2.7 V to 3.6 V PWD =HIGH OUT= No load condition
Symmetry	SYM	40 % to 60 %	50 % V _{CC} level
High output voltage	V _{OH}	V _{CC} -0.4 V Min.	I _{OH} =100 μA(OUT32k), 4.0 mA(OUT)
Low output voltage	V _{OL}	0.4 V Max.	I _{OL} =-100 μA(OUT32k), -4.0 mA(OUT)
Output load condition (CMOS)	L _{CMOS}	15 pF Max.	OUT32k pin, OUT pin
Output enable input voltage	V _{IH}	80 % V _{CC} to V _{CC} +0.2 V	PWD pin
Output disable input voltage	V _{IL}	GND-0.2 V to 0.2 V _{CC}	PWD pin
Output rise time	t _r	5 ns Max.	20 % V _{CC} →80 % V _{CC} level, OUT pin
Output fall time	t _f	5 ns Max.	80 % V _{CC} →20 % V _{CC} level, OUT pin
Jitter	P _J	150 ps Max.	V _{CC} =2.7 V to 3.6 V Period jitter
Oscillation start up time	t _{STAI}	3 s Max.	+25 °C, V _{CC} =0 V→1.8 V to 3.6 V
	t _{STAP}	0.1 s	V _{CC} =0 V → 2.7 V to 3.6 V, PWD=LOW→High
Frequency aging	f _{aging}	±5 × 10 ⁻⁶ / year Max.	+25 °C, V _{CC} = 3.0 V, First year

Block diagram



External dimensions

Unit:mm)



Footprint (Recommended)

Unit:mm)

