

CRYSTAL OSCILLATOR 32.768 kHz

SG-3030 CM



Product Number (please contact us) X1B000211xxxx00





•Built-in 32.768 kHz crystal unit allows adjustment-free efficient operation.
•Use of C-MOS IC enables reduction of current consumption.

•VIO controls swing amplitude.

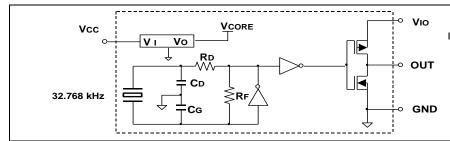
Specifications (characteristics)

Item		Symbol	Specifications	Remarks
Output frequency range		fo	32.768 kHz	
Supply voltage		Vcc	1.5 V to 5.5 V	
Interface power supply voltage		Vio	1.5 V to 5.5 V	
Temperature	Storage temperature	T_stg	-55 °C to +125 °C	Store as bare product after unpacking
range	Operating temperature	T_use	-40 °C to +85 °C	
Frequency tolerance		f_tol	+5 ± 23 × 10 ⁻⁶	+25 °C, Vcc=3.3V
Frequency temperature coefficient		fo-Tc	$+10 \times 10^{-6} / -120 \times 10^{-6}$	-20 °C to +70 °C (+25 °C is reference)
Frequency voltage coefficient		fo-Vcc	±2 x 10 ⁻⁶ / V Max	+25 °C,
Current consumption		Icc	2 μA Max.	3.3V, No load condition
Symmetry		SYM	45 % to 55 %	1/2Vcc(Vio) level
High output voltage		Voн	Vio -0.4V Min.	IOH=-0.4mA
Low output voltage		Vol	0.4V Max.	IoL= 0.4mA
Output load condition (CMOS)		L_CMOS	15 pF Max.	CMOS load
Rise time / Fall time		tr / tf	200 ns Max.	CMOS load:20 % Vcc(Vio) to 80 % Vcc(Vio) level
Start-up time		t_str	1 s Max.	Time at minimum Supply voltage to be 0s +25 °C
Frequency aging		f_aging	±5 × 10 ⁻⁶ / year Max.	+25 °C,Vcc=3.3 V, First year

Actual size

Unless otherwise stated, characteristics (specifications) shown in the above table are based on the rated operating temperature and voltage condition.

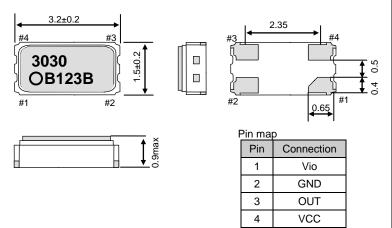
Block diagram



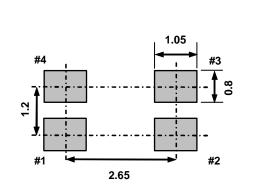
If Vio function is not used, connect #1 to Vcc.

External dimensions





Footprint (Recommended) (Unit:mm)



To maintain stable operation, provide a 0.01uF to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).

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