

CRYSTAL OSCILLATOR ULTRA MINIATURE SIZE LOW PROFILE

SG-3050BC

- Output frequency : 32.768 kHz
- Supply voltage : 3.3 V Typ.
- Current consumption : 2 μ A Max. (3.3 V)
- Output load : CMOS
- Function : Output enable(OE)
- External dimensions : 2.2 x 1.4 x 1.0 t (mm)



Product Number (Please contact us)
X1B000111xxxx00



Actual size



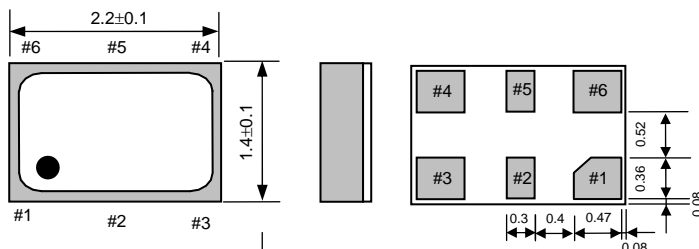
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Specifications (characteristics)

Item	Symbol	Specifications	Remarks	
Output frequency range	f _o	32.768 kHz		
Supply voltage	V _{cc}	1.2 V to 5.5 V		
Temperature range	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}	AA : 5 \pm 5 \times 10 ⁻⁶ B : 5 \pm 23 \times 10 ⁻⁶	+25 °C, V _{cc} =3.3 V	
Frequency temperature coefficient	f _o -T _c	+10 \times 10 ⁻⁶ / -120 \times 10 ⁻⁶	-20 °C to +70 °C (+25 °C is reference)	
Frequency / voltage coefficient	f _o -V _{cc}	\pm 1.0 \times 10 ⁻⁶ / V Typ.	+25 °C, V _{cc} = 1.5 V to 5.5 V	
Current consumption	I _{cc}	2 μ A Max.	3.3 V, No load condition	
Symmetry	SYM	45 % to 55 %	1/2 V _{cc} level	
High output voltage	V _{oH}	V _{cc} -0.4 V Min.	I _{oH} =-0.4 mA	
Low output voltage	V _{oL}	0.4 V Max.	I _{oL} = 0.4 mA	
Output load condition (CMOS)	L _{CMOS}	15 pF Max.	CMOS load	
Rise time / Fall time	t _r / t _f	200 ns Max.	CMOS load:20 % V _{cc} to 80 % V _{cc} level	
Start-up time	t _{str}	1 s Max.	Time at minimum Supply voltage to be 0 s +25 °C, V _{cc} = 3.3 V	
Frequency aging	f _{aging}	\pm 3 \times 10 ⁻⁶ / year Max.	+25 °C, V _{cc} = 3.3 V, First year	

External dimensions

(Unit:mm)



Pin map

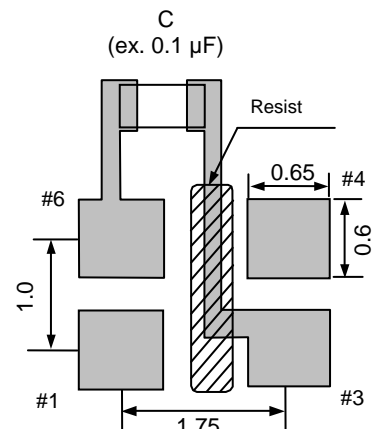
Pin	Connection
1	OE
2	(TEST)
3	GND
4	OUT
5	N.C.
6	V _{cc}

Note.
OE pin = HIGH : Specified frequency output.
OE pin = LOW : Output is high impedance.

TEST pin , N.C. pin : Do not connect externally.
(Recommend the design without the footprint.)

Footprint (Recommended)

(Unit:mm)



To maintain stable operation, provide by-pass capacitor with more than 0.1 μ F at a location as near as possible to the power source terminal of the crystal products (between V_{cc} - GND).