

CRYSTAL OSCILLATOR

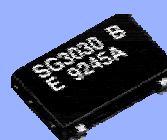
32.768 kHz

SG - 3030LC / JF / JC
SG - 3040LC / JC

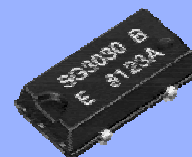
- Built-in 32.768 kHz crystal unit allows adjustment-free efficient operation..
- Use of C-MOS IC enables reduction of current consumption.
- VIO controls swing amplitude.



SG-3030LC
SG-3040LC



SG-3030JF



SG-3030JC
SG-3040JC

Actual size

LC Type.



JF Type.



JC Type.

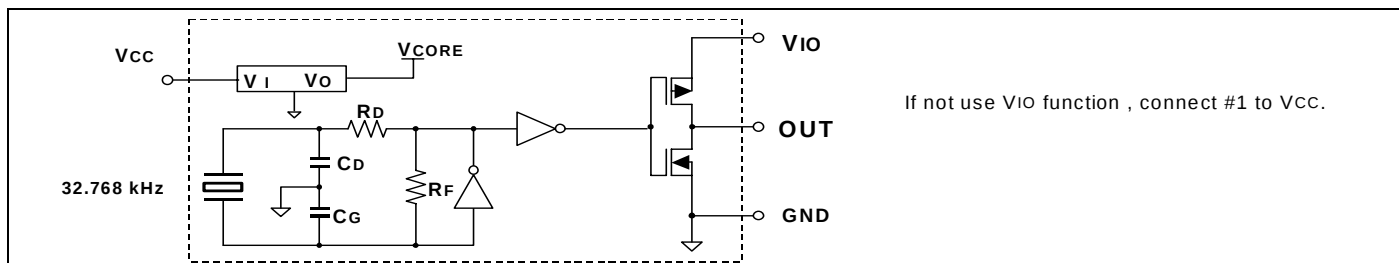


Specifications (characteristics)

Item		Symbol	Specifications		Remarks
			SG-3030LC / JF / JC	SG-3040LC / JC	
Output frequency range		f _o	32.768 kHz		
Supply voltage		V _{cc}	1.5 V to 5.5 V	0.9 V to 3.6 V	
Interface power supply voltage		V _{io}	1.5 V to 5.5 V	0.9 V to 3.6 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(osc)}	5 ±23 × 10 ⁻⁶		+25 °C, V _{cc} =3.3 V (SG-3040: V _{cc} =1.2 V)
Frequency temperature coefficient		f _o -T _c	+10 × 10 ⁻⁶ / -120 × 10 ⁻⁶		-20 °C to +70 °C (+25 °C is reference)
Frequency / voltage coefficient		f _o -V _{cc}	±2 × 10 ⁻⁶ / V Max.	±5 × 10 ⁻⁶ / V Max.	+25 °C
Current consumption		I _{cc}	2 μA Max.	3.1 μA Max.	3.3 V, No load condition
Symmetry		SYM	45 % to 55 %		1/2 V _{cc} (V _{io})level (SG-3040: V _{io} =1.2 V to 3.6 V)
High output voltage		V _{OH}	V _{io} -0.4 V Min.		I _{OH} =-0.4 mA (SG-3040: V _{io} =1.2 V to 3.6 V)
Low output voltage		V _{OL}	0.4 V Max.		I _{OL} = 0.4 mA (SG-3040: V _{io} =1.2 V to 3.6 V)
Output load condition (CMOS)		L _{CMOS}	15 pF Max.		CMOS load
Output rise and fall time		t _r / t _f	200 ns Max.	100 ns Max.	CMOS load:20 % V _{cc} (V _{io}) to 80 % V _{cc} (V _{io})level (SG-3040: V _{io} =1.2 V to 3.6 V)
Oscillation start up time		t _{osc}	1 s Max.	3 s Max.	Time at minimum Supply voltage to be 0 s
Frequency aging		f _{aging}	±5 × 10 ⁻⁶ / year Max.		+25 °C (SG-3030: V _{cc} = 2.0 V to 5.5 V) +25 °C, V _{cc} = 3.3 V, First year

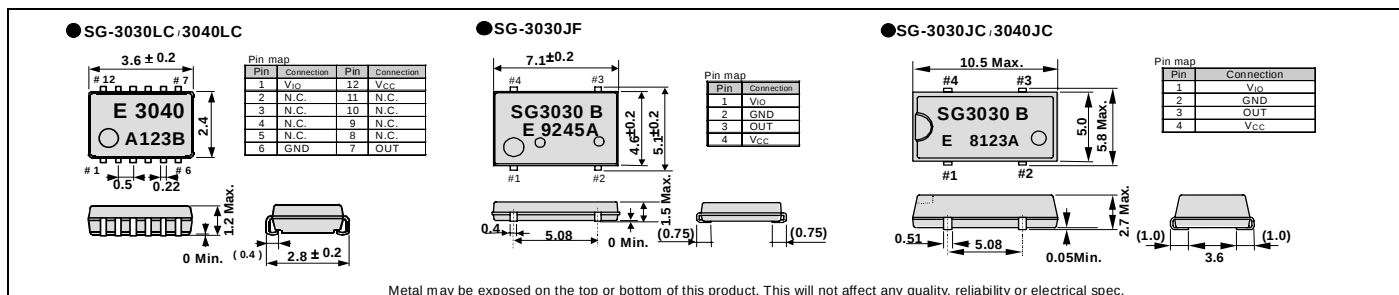
Unless otherwise stated, characteristics (specifications) shown in the above table are based on the rated operating temperature and voltage condition.

Block diagram



External dimension

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

