

32kHz CRYSTAL OSCILLATOR

SG-3030JC / JF

SG-3032JC

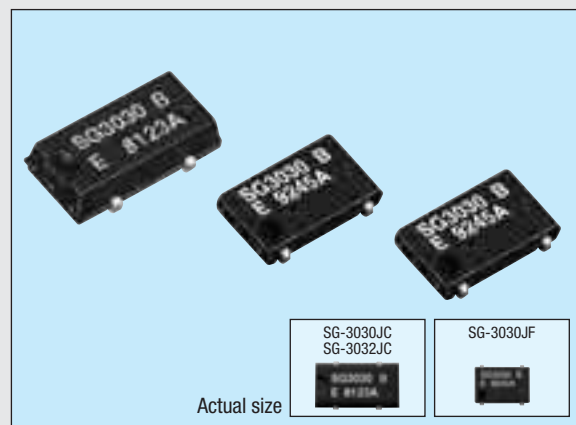
Product number (please refer to page 2)

Q3102JC0xxxxx00

Q3102JF0xxxxx00

Q3101JC0xxxxx00

- No adjustment required with 32.768 kHz crystal unit built-in.
- Use of C-MOS IC enables reduction of current consumption.
- Thin&Small suited to high-density mounting.
- V_{IO} controls swing amplitude (SG-3030JC / JF).
- Available for lead (Pb)-free soldering.
- Available for lead (Pb)-free terminal.



Specifications (characteristics)

Item	Symbol	Specifications		Remarks	
		SG-3030JC / JF	SG-3032JC		
Output frequency	f _o	32.768 kHz			
Power source voltage	Max. supply voltage	V _{DD} -GND	-0.3 V to +7.0 V	-0.3 V to +4.3 V	
	Operating voltage	V _{DD}	1.5 V to 5.5 V	1.8 V to 3.6 V	
	Interface power supply voltage	V _{IO}	1.5 V to 5.5 V	-	SG-3030JC / JF
Temperature range	Storage temperature	T _{STG}	-55 °C to +125 °C		Stored as bare product after unpacking
	Operating temperature	T _{OPR}	-40 °C to +85 °C	-20 °C to +70 °C	
Frequency tolerance	Δf/f _o	5±23 x 10 ⁻⁶		V _{DD} = 3.3 V Ta = +25 °C	
Frequency temperature characteristics	T _{OP}	+10 x 10 ⁻⁶ / -120 x 10 ⁻⁶		-20 °C to +70 °C, taking Ta = +25 °C as the reference	
Frequency voltage characteristics	f/V	±2 x 10 ⁻⁶ / V Max.		Ta = +25 °C	
Current consumption	I _{OP}	2 μA Max.	5 μA Max.	3.3 V, No load condition	
Duty	tw/t	45 % to 55 %	40 % to 60 %	1/2 V _{DD} level	
Output voltage	V _{OH}	V _{DD} -0.4 V Min.		I _{OH} = -0.4 mA (SG-3030JC / JF), -0.5 mA (SG-3032JC)	
	V _{OL}	0.4 V Max.		I _{OL} = +0.4 mA (SG-3030JC / JF), +0.5 mA (SG-3032JC)	
Output load condition (fan out)	CL	15 pF Max.		CMOS load	
Output rise time	t _r	200 ns Max.	100 ns Max.	CMOS load: 20% → 80% V _{DD}	
Output fall time	t _f	200 ns Max.	100 ns Max.	CMOS load: 80% → 20% V _{DD}	
Oscillation start up time	t _{OSC}	3 s Max.		Time at minimum operating voltage to be 0 s	
Aging	f _a	±5 x 10 ⁻⁶ / year Max.		Ta = +25 °C, V _{DD} = 3.3 V, first year	
Shock resistance	S.R.	±5 x 10 ⁻⁶ Max.		Three drops on a hard board from 750 mm or excitation test with 29400 m/s ² x 0.3 ms x 1/2 sine wave x 3 directions	

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

External dimensions

(Unit: mm)

● SG-3030JC, SG-3032JC

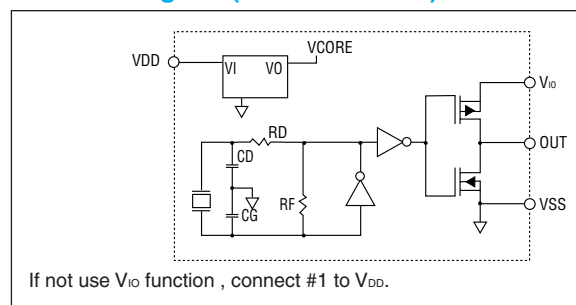
● SG-3030JF

NO.	Pin terminal
1	V _{IO} / SG-3030JC/JF, NC / SG-3032JC
2	GND
3	OUT
4	V _{DD}

If not use V_{IO} function, connect #1 to V_{DD}.

Metal may be exposed on the top or bottom of this product. This won't affect any quality, reliability or electrical spec.

Block diagram (SG-3030JC / JF)



Recommended soldering pattern

(Unit: mm)

