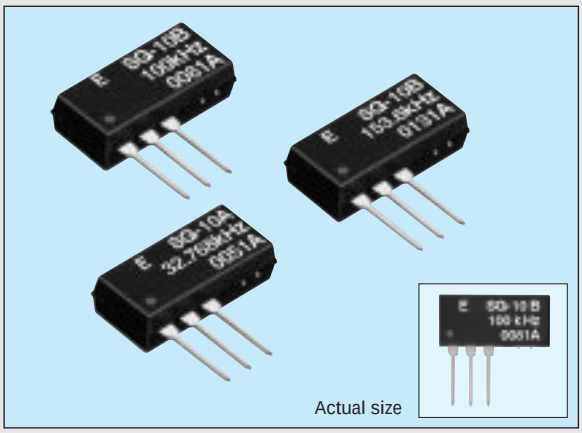
SIP LOW/MEDIUM-FREQUENCY CRYSTAL OSCILLATOR

SG-10

- Low current consumption.
- Small suited to high-density mounting.
- Mountable on a standard printed circuit board.
- Cylindrical low/medium-frequency crystal unit builtin, thus assuring high reliability.



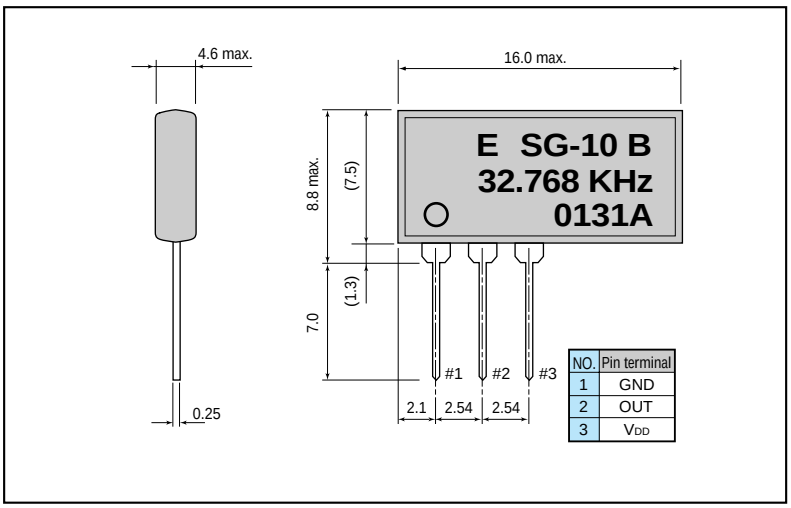
Specifications (characteristics)

Item		Symbol	Specifications	Remarks
Output frequency range		f_0	10.0000 Hz to 153.6000 kHz	For output frequency, see the table below
Power source voltage	Max. supply voltage	V_{DD}-GND	-0.3V to +7.0V	
	Operating voltage	V_{DD}	4.5V to 5.5V	
Temperature range	Storage temperature	T_{STG}	-55˚C to +125˚C	
	Operating temperature	T_{OPR}	-10˚C to +70˚C	
Soldering condition (lead part)		T_{SOL}	Under 260˚C within 10 sec.	Do not heat the package to more than 150˚C
Frequency tolerance		$\Delta f/f_0$	A: ±10ppm B: ±50ppm	V_{DD}=5V Ta=25˚C
Frequency temperature characteristics			+10ppm / -120ppm	-10˚C to +70˚C, taking Ta=25˚C as the reference
Frequency voltage characteristics			±10ppm max.	
Current consumption		I_{OP}	0.5mA max.	No load condition
Duty		t_W/t	40% to 60% (except for cases of 1/3 and 1/5 divided frequency.)	1/2 V_{DD} or 1.4V level
Output voltage		V_{OH}	V_{DD} -1.0V min.	I_{OH}= -40μA
		V_{OL}	0.4V max.	I_{OL}=1.6mA
Output load condition (fan out)		N/C_L	1TTL max./15pF max.	TTL load/C-MOS load
Output rise time		t_{TLH}	60ns max.	
Output fall time		t_{THL}	50ns max.	
Oscillation start up time		t_{OSC}	1 s max.	For more than 1ms until V_{DD}=0V→4.5V. Time at 4.5V to be 0 sec.
Aging		fa	±5ppm/year max.	Ta=25˚C ±3˚C, V_{DD}=5V, first year
Shock resistance		S.R.	±5ppm max.	Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2 sine wave in 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)



Output frequency table

Oscillation source	32.768 kHz,60.000 kHz, 96.000 kHz, 100.000 kHz, 153.600 kHz
Divided frequency output (calculation method)	Oscillation source frequency x (any arbitrary one of 1/1, 1/2, 1/3, 1/4, 1/5, 1/6, 1/12 x (any arbitrary one of 1/1, 1/10, 1/100, 1/1000). Over 10.0 Hz range.

For frequencies other than the above, please consult us. (min. order lot 10,000 pcs.)

Output frequency example

Oscillation source	32.768 kHz , 60.000 kHz , 96.000 kHz, 100.000 kHz ,153.600 kHz
Divided frequency	10.000 Hz , 50.000 Hz , 100.000 Hz , 1.000 kHz, 4.800 kHz , 9.600 kHz, 19.200 kHz , 38.400 kHz, 50.000 kHz , 76.800 kHz