

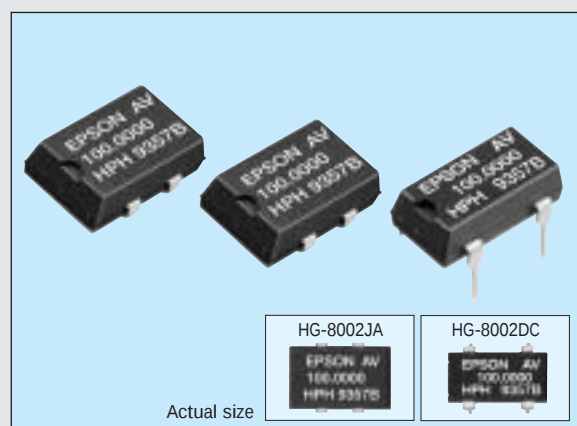
PROGRAMMABLE HIGH-STABILITY HIGH-FREQUENCY CRYSTAL OSCILLATOR

HG-8002JA/DC series

Product number (please refer to page 2)

Q3502JAXXXXXXX00**Q3402DCXXXXXX00**

- Wide frequency output by PLL technology.
- Low current consumption by output enable function (OE) or standby function (ST)
- Pin compatible with half-size oscillator SG-531.
- Package and pin compatible with SG-615.
- Low current consumption due to CMOS technology.
- Excellent environmental capability.

**Specifications (characteristics)**

Item	Symbol	Specifications *2			Remarks
		PT/ST	PH/SH	PC/SC	
Output frequency range	f_o	1.0000 MHz to 125.0000 MHz			Refer to page 33. "Frequency range"
Power source voltage	Max. supply voltage	$V_{DD}-GND$ -0.5 V to +7.0 V			
	Operating voltage	V_{DD} 5.0 V ± 0.25 V			3.3 V ± 0.165 V
Temperature range	Storage temperature	T_{STG} -55 °C to +125 °C			Stored as bare product after unpacking
	Operating temperature	T_{OPR} -20 °C to +70 °C (-40 °C to +85 °C)			Refer to page 33. "Frequency range"
Frequency stability	$\Delta f/f_o$	AV: $\pm 20 \times 10^{-6}$ BV: $\pm 25 \times 10^{-6}$ CX: $\pm 30 \times 10^{-6}$			AV, BV: -20 °C to +70 °C, CX: -40 °C to +85 °C
Current consumption	I_{OP}	45 mA Max.			28 mA Max.
Output disable current	I_{OE}	30 mA Max.			16 mA Max.
Standby current	I_{ST}	50 μ A Max.			
Duty *1	t_w/t	—			40 % to 60 %
		40 % to 60 %			—
High output voltage	V_{OH}	$V_{DD} - 0.4$ V Min.			$I_{OH} = -16$ mA (PT/ST, PH/SH), -8 mA (PC/SC)
Low output voltage	V_{OL}	0.4 V Max.			$I_{OL} = 16$ mA (PT/ST, PH/SH), 8 mA (PC/SC)
Output load *1 condition (fan out)	TTL	N			2 TTL Max.
	CMOS	CL			15 pF Max.
Output enable/disable input voltage	V_{IH}	2.0 V Min.			0.7 x V_{DD} Min.
	V_{IL}	0.8 V Max.			0.2 x V_{DD} Max.
Output rise time *1	CMOS level	—			3 ns Max.
	TTL level	4 ns Max.			—
Output fall time *1	CMOS level	—			3 ns Max.
	TTL level	4 ns Max.			—
Oscillation start up time	t_{OSC}	10 ms Max.			Time at minimum operating voltage to be 0 s
Aging	f_a	$\pm 2 \times 10^{-9}$ /year Max.			$T_a = +25$ °C, $V_{DD} = 5.0$ V/3.3 V (PC/SC)
Shock resistance	S.R.	$\pm 2 \times 10^{-6}$ Max.			Three drops on a hard board from 750 mm or excitation test with 29400 m/s ² x 0.3 ms x 1/2sine wave in 3 directions

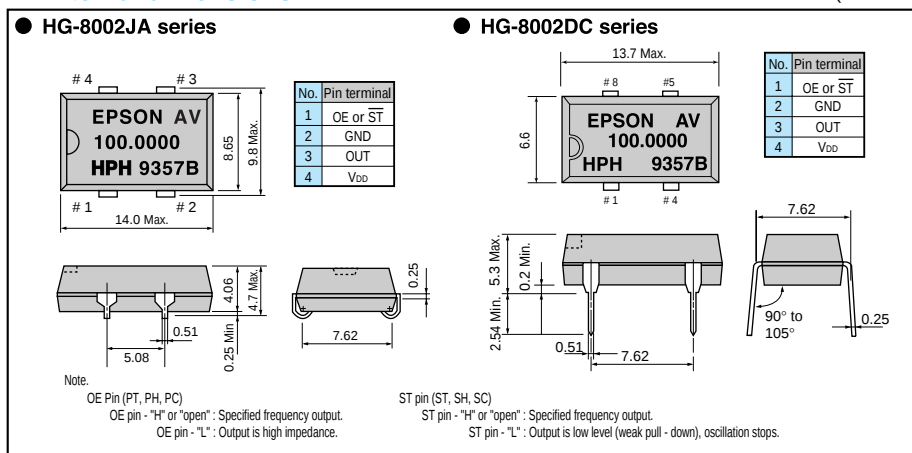
*1 Operating temperature(-40 °C to +85 °C), the available frequency, duty and output load conditions, please refer to page 33.

*2 PLL - PLL connection & Jitter specification, please refer to page 53, 54.

Checking possible by the Frequency Checking Program.

External dimensions

(Unit: mm)

**Recommended soldering pattern** (Unit: mm)