

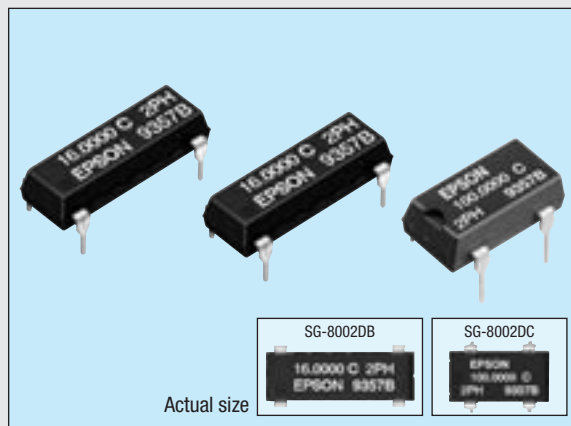
PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR SG-8002DB / DC series

Product number (please refer to page 2)

Q3203DBxxxxxx00

Q3204DCxxxxxx00

- Wide frequency output by PLL technology.
- Quick delivery of samples and short lead mass production time.
- Excellent environmental capability.
- Output enable function (OE) and stand-by function (ST) can be used for low current consumption applications.
- Pin compatible with full size and half size.
- Available for lead (Pb)-free soldering.
- Available for lead (Pb)-free terminal.



SG-Writer available to purchase.
Please contact EPSON or local sales representative.

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 50. "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 ±0.5 V	3.3 ± 0.3 V	2.7 V to 3.6 V : f _o ≤ 66.7 MHz (PC / SC)
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)	-40 °C to +85 °C	Refer to page 50. "Frequency range"
Frequency stability	Δf/f _o	B: ±50 x 10 ⁻⁶ C: ± 100 x 10 ⁻⁶			B, C : -20 °C to +70 °C
		M: ±100 x 10 ⁻⁶			M : -40 °C to +85 °C
Current consumption	I _{OP}	45 mA Max.		28 mA Max.	No load condition, Max. frequency range
Output disable current	I _{OE}	30 mA Max.		16 mA Max.	OE = GND (PT, PH, PC)
Standby current	I _{ST}	50 μA Max.			ST = GND (ST, SH, SC)
Duty *1	tw/ t	40 % to 60 %			CMOS load: 1/2 V _{DD} level
		40 % to 60 %			TTL load: 1.4 V level
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	5 TTL Max.	—	Max. frequency and Max. operating voltage range
	CMOS	CL	15 pF Max.	25 pF Max. 15 pF Max.	
Output enable / disable input voltage	V _{IH}	2.0 V Min.		0.7 V _{DD} Min.	ST, OE terminal
	V _{IL}	0.8 V Max.		0.2 V _{DD} Max.	
Output rise time *1	CMOS level	t _r	4 ns Max.		CMOS load: 20 % → 80 % V _{DD}
	TTL level		4 ns Max.		TTL load: 0.4 V → 2.4 V
Output fall time *1	CMOS level	t _f	4 ns Max.		CMOS load: 80 % → 20 % V _{DD}
	TTL level		4 ns Max.		TTL load: 2.4 V → 0.4 V
Oscillation start up time	t _{OSC}	10 ms Max.			Time at minimum operating voltage to be 0 s
Aging	f _a	±5 x 10 ⁻⁶ / year Max.			T _a = +25 °C, V _{DD} = 5.0 V / 3.3 V, First year
Shock resistance	S.R.	±20 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 1/2sine wave in 3 directions

*1 Operating temperature (-40 °C to +85 °C), the available frequency, duty and output load conditions, please refer to page 50, 51.

*2 PLL - PLL connection & Jitter specification, please refer to page 52.

Checking possible by the Frequency Checking Program.

<http://www.epsondevice.com/domcfg.nsf>

External dimensions

(Unit: mm)

