

PROGRAMMABLE HIGH-FREQUENCY CRYSTAL OSCILLATOR

SG-8002DC / DB series

Product number (please contact us)

SG-8002DC : Q3204DCx1xxxx00

SG-8002DB : Q3203DBx1xxxx00

- Frequency range : 1 MHz to 125 MHz
- Operating voltage : 3.3 V or 5.0 V
- Function : Output enable(OE) or Standby(/ST)
Pin compatible with full size and half size.
- Lead(Pb)-free : Complies with EU RoHS directive
- Short lead mass production time by PLL technology.



Actual size

■ Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks
		PT / ST	PH / SH	PC / SC	
Output frequency range	f_0	1 MHz to 125 MHz	—	—	$V_{DD}=4.5\text{ V to }5.5\text{ V}$
		—	—	1 MHz to 125 MHz	$V_{DD}=3.0\text{ V to }3.6\text{ V}$
		—	—	1 MHz to 66.7 MHz	$V_{DD}=2.7\text{ V to }3.6\text{ V}$
Operating voltage	V_{DD}	4.5 V to 5.5 V	—	2.7 V to 3.6 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)	-40 °C to +85 °C	Refer to Application guide. "Frequency range"
Frequency stability	$\Delta f/f_0$	B: $\pm 50 \times 10^{-6}$, C: $\pm 100 \times 10^{-6}$ M: $\pm 100 \times 10^{-6}$			B, C: -20 °C to +70 °C M: -40 °C to +85 °C
Current consumption	I_{OP}	45 mA Max.	—	28 mA Max.	No load condition, Max. frequency
Output disable current	I_{OE}	30 mA Max.	—	16 mA Max.	OE=GND(PT,PH,PC)
Standby current	I_{ST}	—	50 μ A Max.	—	/ST=GND(ST,SH,SC)
Duty *1	tw/t	—	40 % to 60 %	—	CMOS load: 50% V_{DD} , Max. load condition
		40 % to 60 %	—	—	TTL load: 1.4V, Max. load condition
High output voltage	V_{OH}	—	$V_{DD}-0.4\text{ V Min.}$	—	$I_{OH}=-16\text{ mA(PT,ST,PH,SH)}, -8\text{ mA(PC,SC)}$
Low output voltage	V_{OL}	—	0.4 V Max.	—	$I_{OL}=16\text{ mA(PT,ST,PH,SH)}, 8\text{ mA(PC,SC)}$
Output loadcondition (TTL) *1	N	5TTL Max.	—	—	Max. frequency and Max. operating voltage
Output loadcondition (CMOS) *1	CL	—	15pF Max.	—	
Output enable / disable input voltage	V_{IH}	2.0 V Min.	—	70 % V_{DD} Min.	/ST, OE terminal
	V_{IL}	0.8 V Max.	—	20 % V_{DD} Max.	/ST, OE terminal
Output rise fall time *1	t_R	—	3 ns Max.	—	CMOS load: 20 % V_{DD} to 80 % V_{DD} level
	t_F	4 ns Max.	—	—	TTL load: 0.4 V to 2.4 V level
Oscillation start up time	t_{OSC}	—	10 ms Max.	—	Time at minimum operating voltage to be 0 s
Aging	fa	—	$\pm 5 \times 10^{-6}$ / year Max.	—	$T_a=+25\text{ }^\circ\text{C}, V_{DD}=5.0\text{ V} / 3.3\text{ V (PC/SC)}$ First year

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

*2 PLL-PLL connection & Jitter specification, please refer to Page 41.

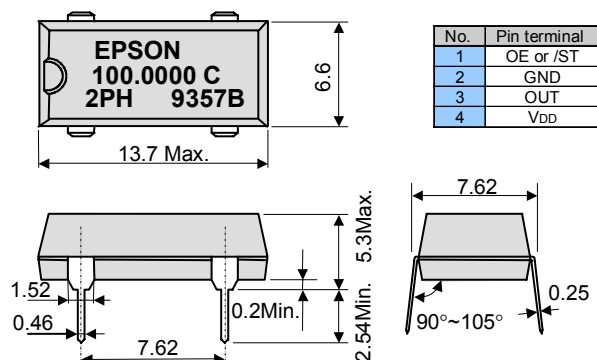
Checking possible by the Frequency Checking Program.

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

■ External dimensions

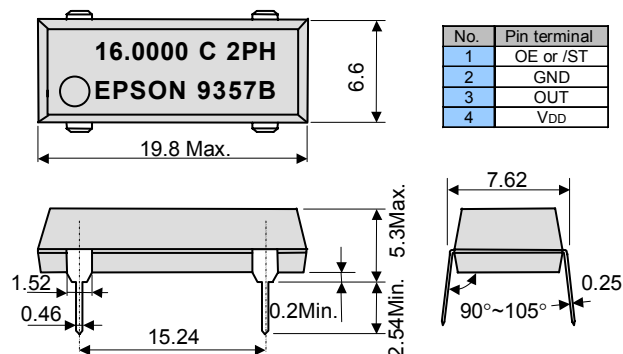
(Unit:mm)

●SG-8002DC



Note.
OE Pin (PT, PH, PC)
OE pin = "H" or "open" : Specified frequency output.
OE pin = "L" : Output is high impedance.

●SG-8002DB



/ST pin (ST, SH, SC)
/ST pin = "H" or "open" : Specified frequency output.
/ST pin = "L" : Output is low level (weak pull - down), oscillation stops.