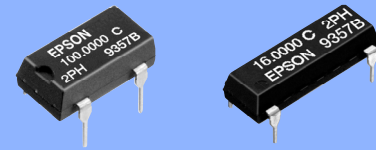


## CRYSTAL OSCILLATOR PROGRAMMABLE

# SG-8002DC / DB series

- Frequency range : 1 MHz to 125 MHz
- Supply voltage : 3.3 V or 5.0 V
- Function : Output enable(OE) or Standby( $\overline{ST}$ )  
Pin compatible with full size and half size.
- Lead(Pb)-free : Contains high melting temperature type solder (Pb85 %) exempted by RoHS directive.
- Short mass production lead time by PLL technology.
- SG-Writer available to purchase.  
Please contact EPSON TOYOCOM or local sales representative.

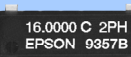


Actual size

SG-8002DC



SG-8002DB



### Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks	
		PT / ST	PH / SH	PC / SC		
Output frequency range	$f_o$	1 MHz to 125 MHz		—	V <sub>CC</sub> =4.5 V to 5.5 V V <sub>CC</sub> =3.0 V to 3.6 V	
Supply voltage	V <sub>CC</sub>	4.5 V to 5.5 V		2.7 V to 3.6 V	V <sub>CC</sub> =2.7 V to 3.6 V	
Temperature range	Storage temperature	-55 °C to +125 °C			Stored as bare product after unpacking	
	Operating temperature	-20 °C to +70 °C (-40 °C to +85 °C)		-40 °C to +85 °C	Refer to "Frequency range" (P.4)	
Frequency tolerance	F <sub>tol(osc)</sub>	B: $\pm 50 \times 10^{-6}$ , C: $\pm 100 \times 10^{-6}$ M: $\pm 100 \times 10^{-6}$			-20 °C to +70 °C -40 °C to +85 °C *3	
Current consumption	I <sub>DD</sub>	45 mA Max.		28 mA Max.	No load condition, Max. frequency	
Output disable current	I <sub>dis</sub>	30 mA Max.		16 mA Max.	OE=GND(PT,PH,PC)	
Stand-by current	I <sub>std</sub>	50 $\mu$ A Max.			$\overline{ST}$ =GND(ST,SH,SC)	
Symmetry *1	SYM	—	40 % to 60 %		CMOS load:50%V <sub>CC</sub> level, Max. load condition TTL load: 1.4V level, Max. load condition	
		40 % to 60 %		—		
High output voltage	V <sub>OH</sub>	V <sub>CC</sub> -0.4 V Min.			I <sub>OH</sub> =-16 mA(PT,ST,PH,SH), -8 mA(PC,SC)	
Low output voltage	V <sub>OL</sub>	0.4 V Max.			I <sub>OL</sub> =16 mA(PT,ST,PH,SH), 8 mA(PC,SC)	
Output load condition (TTL) *1	L <sub>TTL</sub>	5 TTL Max.		—	Max. frequency and Max. supply voltage	
Output load condition (CMOS) *1	L <sub>CMOS</sub>	15 pF Max.		25 pF Max.	15 pF Max.	
Output enable / disable input voltage	V <sub>IH</sub>	2.0 V Min.		70 % V <sub>CC</sub> Min.	$\overline{ST}$ , OE terminal	
	V <sub>IL</sub>	0.8 V Max.		20 % V <sub>CC</sub> Max.	$\overline{ST}$ , OE terminal	
Output rise and fall time *1	tr / tf	—			3 ns Max.	CMOS load: 20 % V <sub>CC</sub> to 80 % V <sub>CC</sub> level TTL load: 0.4 V to 2.4 V level
		4 ns Max.		—		
Oscillation start up time	t <sub>osc</sub>	—			10 ms Max.	Time at minimum supply voltage to be 0 s
Frequency aging	F <sub>aging</sub>	—			$\pm 5 \times 10^{-6}$ / year Max.	+25 °C, V <sub>CC</sub> =5.0 V / 3.3 V (PC/SC) First year

\*1 Operating temperature (-40 °C to +85 °C), the available frequency, symmetry and output load conditions, please refer to Page 48.

\*2 PLL-PLL connection & Jitter specification, please refer to Page 49.

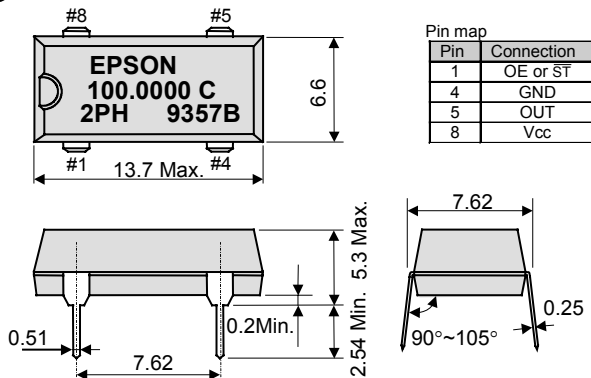
\*3 PT / ST and PH / SH for "M" tolerance will be available up to 55 MHz.

Checking possible by the Frequency Checking Program.

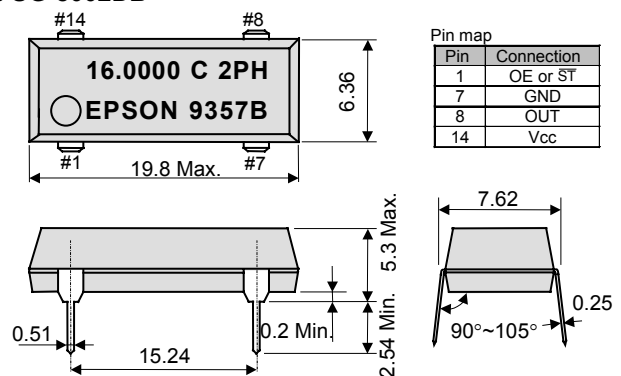
### External dimensions

(Unit:mm)

#### ● SG-8002DC



#### ● SG-8002DB



Note.

OE Pin (PT, PH, PC)

OE pin = "H" or "open" : Specified frequency output.

OE pin = "L" : Output is high impedance.

$\overline{ST}$  pin (ST, SH, SC)

$\overline{ST}$  pin = "H" or "open" : Specified frequency output.

$\overline{ST}$  pin = "L" : Output is low level (weak pull - down), oscillation stops.