



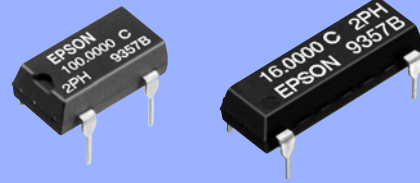
CRYSTAL OSCILLATOR PROGRAMMABLE

SG-8002DC / DB series

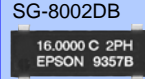
- Frequency range : 1 MHz to 125 MHz
- Supply voltage : 3.3 V / 5.0 V
- Function : Output enable(OE) or Standby(\overline{ST})
Pin compatible with full size and half size.
- Short mass production lead time by PLL technology.
- SG-Writer available to purchase.
Please contact EPSON TOYOCOM or local sales representative.



Product Number (please contact us)
 SG-8002DC: Q3204DCx1xxxx00
 SG-8002DB: Q3203DBx1xxxx00



Actual size



Specifications (characteristics)

Item	Symbol	Specifications *2			Remarks	
		PT / ST	PH / SH	PC / SC		
Output frequency range	f_o	1 MHz to 125 MHz			Vcc=4.5 V to 5.5 V	
		—			Vcc=3.0 V to 3.6 V	
		—			Vcc=2.7 V to 3.6 V	
Supply voltage	Vcc	4.5 V to 5.5 V				
		2.7 V to 3.6 V				
Temperature range	Storage temperature	-55 °C to +125 °C			Store as bare product after unpacking	
	Operating temperature	T_stg	-20 °C to +70 °C (-40 °C to +85 °C)	-40 °C to +85 °C	Refer to "Outline specifications" (Frequency range)	
Frequency tolerance	f_tol	B: $\pm 50 \times 10^{-6}$,C: $\pm 100 \times 10^{-6}$			-20 °C to +70 °C	
		M: $\pm 100 \times 10^{-6}$			-40 °C to +85 °C *3	
Current consumption	Icc	45 mA Max.		28 mA Max.	No load condition, Max. frequency	
Disable current	I_dis	30 mA Max.		16 mA Max.	OE=GND(PT,PH,PC)	
Stand-by current	I_std	50 μ A Max.			\overline{ST} =GND(ST,SH,SC)	
Symmetry *1	SYM	—		40 % to 60 %	CMOS load:50%Vcc level, Max. load condition	
		40 % to 60 %		—	TTL load: 1.4 V level, Max. load condition	
High output voltage	VoH	Vcc-0.4 V Min.			IoH=-16 mA(PT,ST,PH,SH), -8 mA(PC,SC)	
Low output voltage	VoL	0.4 V Max.			IoL=16 mA(PT,ST,PH,SH), 8 mA(PC,SC)	
Output load condition (TTL) *1	L_TTL	5 TTL Max.		—	Max. frequency and	
Output load condition (CMOS) *1	L_CMOS	15 pF Max.	25 pF Max.	15 pF Max.	Max. supply voltage	
Output enable / disable input voltage	V _{IH}	2.0 V Min.		70 % Vcc Min.	\overline{ST} terminal or OE terminal	
	V _{IL}	0.8 V Max.		20 % Vcc Max.		
Rise time / Fall time *1	tr / tf	—			3 ns Max.	CMOS load: 20 % Vcc to 80 % Vcc level
		4 ns Max.		—		TTL load: 0.4 V to 2.4 V level
Start-up time	t_str	10 ms Max.			Time at minimum supply voltage to be 0 s	
Frequency aging	f_aging	$\pm 5 \times 10^{-6}$ / year Max.			+25 °C, Vcc=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 "Outline specifications" page.

*2 PLL-PLL connection & Jitter specification, please refer to "Jitter specifications and characteristics chart" page.

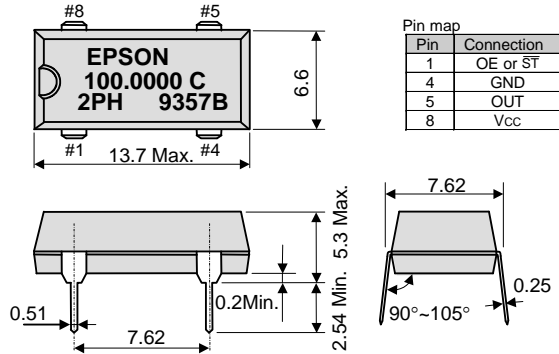
*3 PT / ST and PH / SH for "M" tolerance will be available up to 55 MHz.

Checking possible by the Frequency Checking Program.

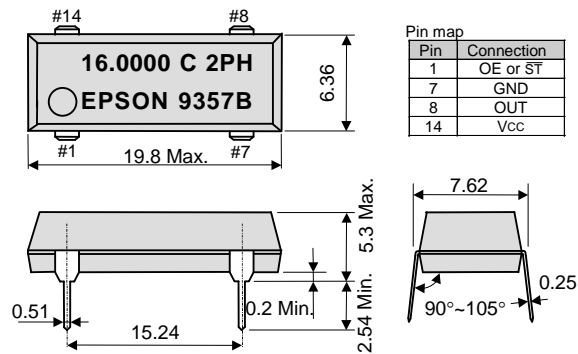
External dimensions

(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.

To maintain stable operation, provide by-pass capacitor with more than 0.1 μ F at a location as near as possible to the power source terminal of the crystal products (between Vcc - GND).