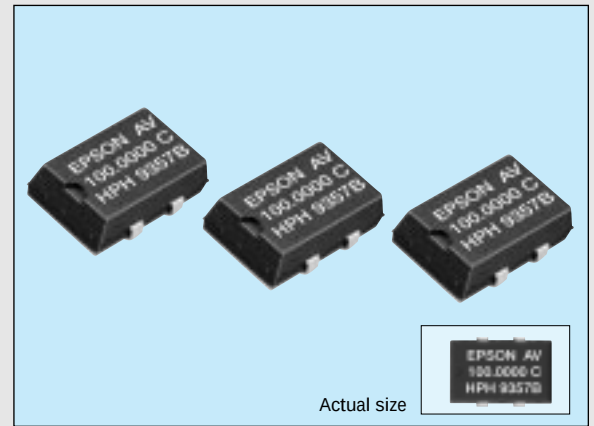


PROGRAMMABLE HIGH-STABILITY HIGH-FREQUENCY CRYSTAL OSCILLATOR

HG-8002JA series

- Wide frequency output by PLL technology.
- Low current consumption by output enable function (OE) or standby function (ST).
- Package and pin compatible with SG-615.
- Low current consumption due of C-MOS technology.
- Excellent shock resistance and environmental capability.



Actual size

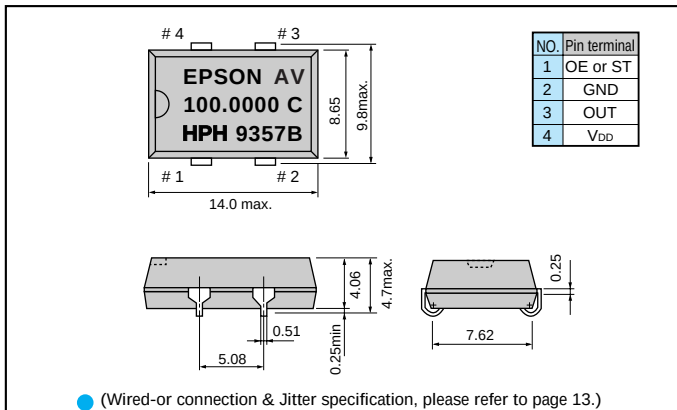
■ Specifications (characteristics)

Item		Symbol	PT/ST	PH/SH	PC/SC	Remarks
			Specifications			
Output frequency range		f ₀	1.0000 MHz to 125.0000 MHz			
Power source voltage	Max. supply voltage	V _{DD} -GND	-0.5V to +7.0V			
	Operating voltage	V _{DD}	5.0V±0.25V		3.3V ± 0.165V	
Temperature range	Storage temperature	T _{STG}	-55°C to +125°C			
	Operating temperature	T _{OPR}	-20°C to +70°C (-40°C to +85°C)			Refer to page 4."Frequency range"
Soldering condition		T _{SOL}	Twice at under 260°C within 10 sec. or under 230°C within 3 min.			
Frequency stability		Δf/f ₀	AV: ±20ppm BV: ±25ppm CX: ± 30ppm(-40°C to +85°C)			-20°C to +70°C
Current consumption		I _{OP}	45mA max.		28mA max.	No load condition, Max. frequency range
Output disable current		I _{OE}	30mA max.		16mA max.	OE=GND(PT, PH, PC)
Standby current		I _{ST}	50 μA max.			ST=GND(ST, SH, SC)
Duty	t _w / t		—	40% to 60%		C-MOS load: 1/2V _{DD} level, Max. load condition
			40% to 60%	—		TTL load: 1.4V level, Max. load condition
High output voltage		V _{OH}	V _{DD} -0.4V min.			I _{OH} =-16mA(PT/ST, PH/SH),-8mA(PC/SC)
Low output voltage		V _{OL}	0.4V max.			I _{OL} = 16mA(PT/ST, PH/SH), 8mA(PC/SC)
Output load condition (fan out)	TTL	N	2TTL max.	—		Max. frequency and max. operating voltage range
	C-MOS	CL	15pF max.			
Output enable/disable input voltage		V _{IH}	2.0V min.		0.7 × V _{DD} min.	ST, OE terminal
		V _{IL}	0.8V max.		0.2 × V _{DD} max.	
Output rise time	C-MOS level	t _{RLH}	—	3ns max.		C-MOS load: 20%→80% V _{DD} level
	TTL level		4ns max.	—		TTL load: 0.4V→2.4V level
Output fall time	C-MOS level	t _{THL}	—	3ns max.		C-MOS load: 80%→20% V _{DD} level
	TTL level		4ns max.	—		TTL load: 2.4V→0.4V level
Oscillation start up time		t _{OSC}	10ms max.			Time at minimum operating voltage to be 0 sec.
Aging		f _a	±2ppm/year max.			T _a = 25°C, V _{DD} = 5.0V/3.3V(PC/SC)
Shock resistance		S.R.	±2ppm max.			Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2sine wave in 3 directions

Note: • Please contact us for inquiries about operating temperature(-40°C to +85°C), usable frequencies, duty and output load conditions.

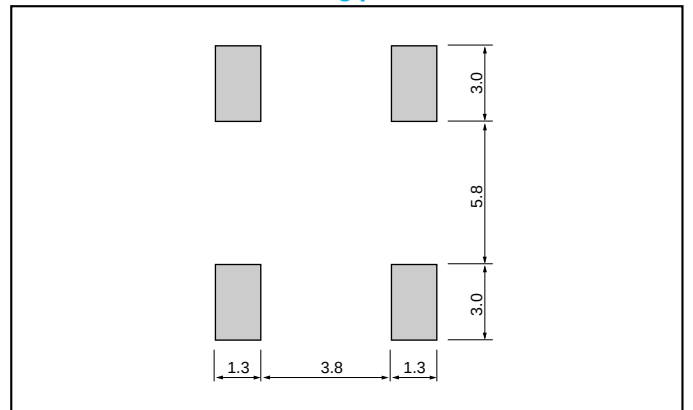
■ External dimensions

(Unit: mm)



■ Recommended soldering pattern

(Unit: mm)



THE CRYSTALMASTER



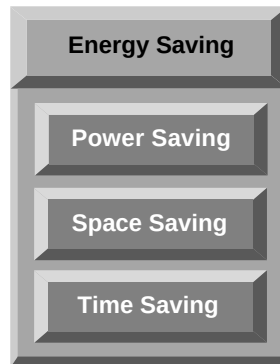
ENERGY SAVING EPSON

EPSON offers effective savings to its customers through a wide range of electronic devices, such as semiconductors, liquid crystal display (LCD) modules, and crystal devices. These savings are achieved through a sophisticated melding of three different efficiency technologies.

Power saving technology provides low power consumption at low voltages.

Space saving technology provides further reductions in product size and weight through super-precise processing and high-density assembly technology.

Time saving technology shortens the time required for design and development on the customer side and shortens delivery times.



Our concept of Energy Saving technology conserves resources by blending the essence of these three efficiency technologies. The essence of these technologies is represented in each of the products that we provide to our customers.

In the industrial sector, leading priorities include measures to counter the greenhouse effect by reducing CO₂, measures to preserve the global environment, and the development of energy-efficient products. Environmental problems are of global concern, and although the contribution of energy-saving technology developed by EPSON may appear insignificant, we seek to contribute to the development of energy-saving products by our customers through the utilization of our electronic devices. EPSON is committed to the conservation of energy, both for the sake of people and of the planet on which we live.

Resource Saving



SEIKO EPSON CORP. QUARTZ DEVICE DIVISION acquired ISO9001 and ISO14001 certification by B.V.Q.I. (Bureau Veritas Quality International) .

ISO9001 in October, 1992.

ISO14001 in November, 1997.

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