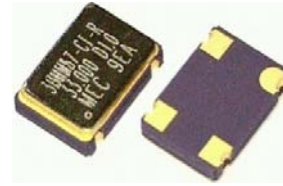


**SMD CMOS output**  
**7.0 x 5.0 x 1.8 mm**

**P group**



RoHS Compliance

**Features**

- Ultra Small SMD seam sealed spread spectrum Low EMI clock crystal oscillator units.
- Tri-state function available.

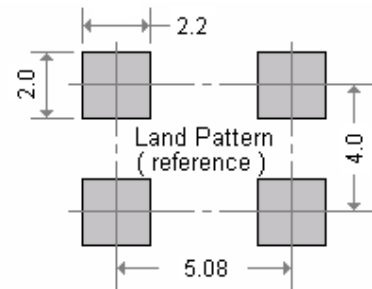
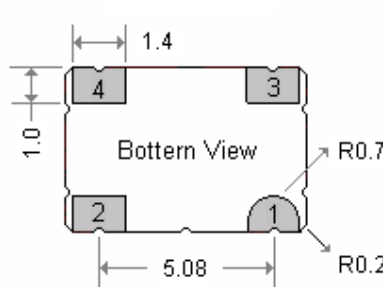
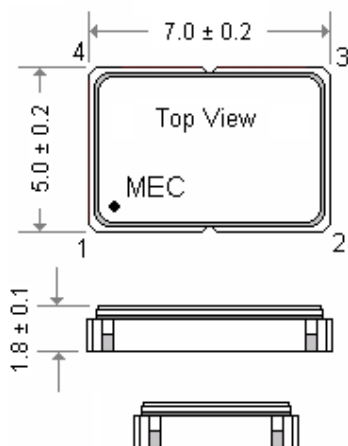
**Applications**

- Printers ; Multiple function printers (MPCs)
- Digital copiers; PDAs
- Networking; LAN / WAN; Routers
- Storage systems ( CD-ROM, VCD, DVD and HDD )
- Scanner; Modems; projectors
- Embedded systems; Electrical musical instrument
- Automotive; GPS car navigation systems
- LCD PC monitors / LCD TVs
- ADSL; PCMCIA
- Still Digital cameras (SDCs)

**General Specifications**

Parameters		Electrical Spec.			
Input Voltage ( V <sub>DD</sub> )		3.3 V D.C. ± 5 %			
Frequency Range		13.0 ~ 220.0 MHz			
Output Wave Form		CMOS output			
Characteristic Group		Mercury Group " P "			
Spread Type / Total Spread Percentage		Down Spread / - 3.0 %			
EMI Reduction ( applies to the whole spectrum )		EMI reduction(dB)=10Log			
Output Logic High " 1 "		2.4V (min.) ; [ at 80% V <sub>DD</sub> ]			
Output Logic Low " 0 "		0.4V (max.) ; [ at 20% V <sub>DD</sub> ]			
Output Load		15 pF			
Rise Time ( Tr ) / Fall Time ( Tf )		1.3n sec. (max.) [ 20% V <sub>DD</sub> ↔ 80% V <sub>DD</sub> ]			
Modulation Carrier Frequency ( Dither rate )		25.3 KHz ( min. ) ; 58.6 KHz (max.) [ Freq. dependent . ]			
Duty Cycle		50% ± 5% [ CL=15pF;at 50%VDD ]			
Current Consumption		25mA (typ.) ; Frequency dependent			
Pin 1 Option		No Tri-State option available			
Cycle - to - cycle Jitter		± 100 ps ( typ. )			
Start - Up Time (Ts)		2.0 m sec.( typical ) ; 5.0 m sec.( max. )			
Storage Temperature		- 65°C to 150°C			
Aging		± 5 ppm per year ( max. ) ; T = 25 °C			
Frequency Stability <sup>(1)</sup> Codes	Frequency Stability over Operating Temperature Range	± 25 ppm	± 50 ppm	± 100 ppm	If non-standard , please enter the desired stability after the " C " or " I " For example : " C20 " ±20 ppm over -10°C to +70°C ; " I20 " ± 20 ppm over -40°C to +85°C
	Commercial ( -10°C to +70°C )	A	B	C	
	Industrial ( -40°C to +85°C )	D	E	F	

**Outline Dimensions ( Unit : mm )**



Package dimensions and suggested pad layout :

- Pad 1 : No connection
- Pad 2 : Ground
- Pad 3 : Spread Spectrum clock output
- Pad 4 : Supply Voltage

**Mercury** [www.mercury-crystal.com](http://www.mercury-crystal.com)