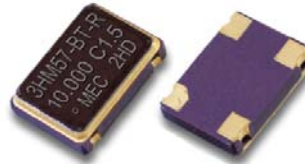


**SMD CMOS output**  
7.0 x 5.0 x 1.4 mm

**R group**



RoHS Compliance

**Features**

- Ultra Small SMD seam sealed spread spectrum Low EMI clock crystal oscillator units.
- Tri-state function on pad No.1.

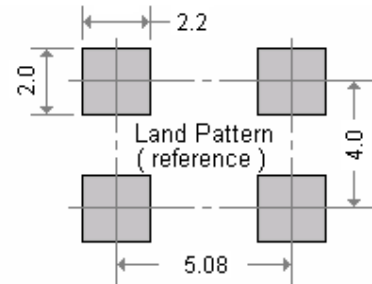
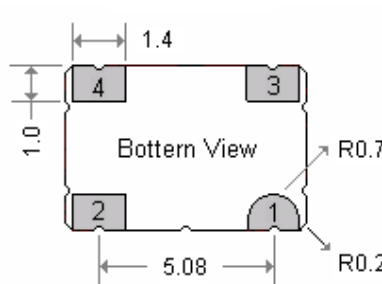
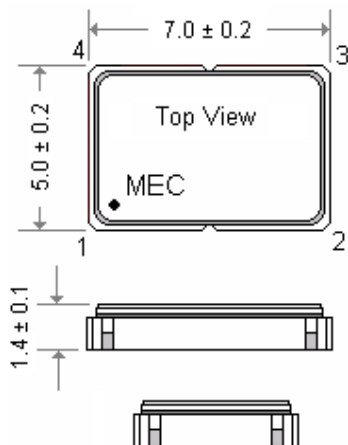
**Applications**

- 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. $\pm 5\%$			
Frequency Range		3.5 ~ 165.0 MHz			
Output Wave Form		CMOS output			
Characteristic Group		Mercury Group " R "			
Spread Type / Total Spread Percentage		Center Spread / $\pm 0.5\%$			
EMI Reduction ( applies to the whole spectrum )		-9 dBc ( min. ) [ 100 MHz ]			
Output Logic High " 1 "		2.4V ( min. ) ; 3.2V ( typ. ) [ at 90% V <sub>DD</sub> ]			
Output Logic Low " 0 "		0.5V ( max. ) ; 0.2V ( typ. ) [ at 10% V <sub>DD</sub> ]			
Output Load		15 pF			
Rise Time ( Tr ) / Fall Time ( Tf )		4n sec. ( max. ) [ 10% V <sub>DD</sub> $\leftrightarrow$ 90% V <sub>DD</sub> ]			
Modulation Carrier Frequency ( Dither rate )		6.9 KHz ( min. ) ; 55.5 KHz ( max. ) [ Freq. dependent . ]			
Duty Cycle		50% $\pm 5\%$ [ CL=15pF; at 50%VDD ]			
Current Consumption	3.5 ~ 50.0 MHz	50.1 ~ 100.0 MHz	100.1 ~ 165.0 MHz		
	10 mA typ.	18 mA typ.	35 mA typ.		
Cycle - to - cycle Jitter	$\pm 250$ ps ( typical ) ; $\pm 300$ ps ( max. )				
Start - Up Time ( Ts )	2.0 m sec.( typical ) ; 5.0 m sec.( max. )				
Storage Temperature	- 65°C to 150°C				
Aging	$\pm 5$ ppm per year ( max. ) ; T = 25 °C				
Frequency Stability <sup>(1)</sup> Codes	Frequency Stability over Operating Temperature Range	$\pm 25$ ppm	$\pm 50$ ppm	$\pm 100$ ppm	If non-standard , please enter the desired stability after the " C " or " I " For example : " C20 " $\pm 20$ ppm over -10°C to +70°C ; " I20 " $\pm 20$ 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 : Tri-state ( Enable / Disable )
- Pad 2 : Ground
- Pad 3 : Spread Spectrum clock output
- Pad 4 : Supply Voltage

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