

CRYSTAL OSCILLATORS

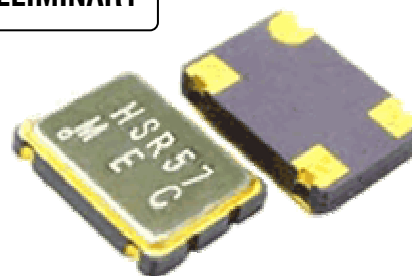
“HSR57” series 5x7 mm Wave Form: True Sine Wave



MERCURY
Since 1973

PRELIMINARY

Clock Oscillator with true sine wave output has never been offered in such a small package in the industry – the **HSR57** (5x7x1.8 mm). HSR57 features low phase noise (<130 dBc / Hz at 1 KHz), low power (<20 m W) and wide supply voltage range. Applications include telecommunication systems and mobile phones.



RoHS Compliant Product
by Mercury

General Specifications $T_A = +25^\circ\text{C}$, V_{DD} at specified voltage, load 10 K Ω // 10 pF

Mercury Product Series		HSR57
Frequency Range		10 MHz ~40.0 MHz
Output Wave Form		True Sine Wave
Input Voltage Range (V_{DD})		$V_{DD} = +2.8$ V D.C. min. +5.0 V D. C. max. Voltage codes: “28” for +2.8 V; “3” for +3.3 V; “5” for +5.0 V
Frequency Stability⁽¹⁾	Commercial (0°C to +70°C) Temperature code is ‘C’	Stability code “A”: ±25 ppm over 0°C to +70°C Stability code “B”: ±50 ppm over 0°C to +70°C Stability code “C”: ±100 ppm over 0°C to +70°C If non-standard please enter the desired stability after the “C”. For example “C20” represents ±20 ppm over 0 to +70°C
	Industrial (extended) (-40°C to +85°C) Temperature code is ‘I’	Stability code “D”: ±25 ppm over -40°C to +85°C Stability code “E”: ±50 ppm over -40°C to +85°C Stability code “F”: ±100 ppm over -40°C to +85°C If non-standard please enter the desired stability after the “I”. For example “I20” represents ±20 ppm over -40 to +85°C
Output Level		1.0 V peak-to-peak typical
Harmonic Distortion		< -25 dBc
Output Load		10 K Ω // 10 pF
Current Consumption (typical)		1.2 mA $V_{DD} = +5$ V; 1.1 mA $V_{DD} = +3.3$ V; 1 mA $V_{DD} = +2.7$ V
Start-up Time		2 m sec. typical
Phase Noise		< 130 dBc /Hz at 1 KHz offset
Aging		±5 ppm per year max.
Packaging		16 mm tape; 8 mm pitch; 1000 pcs /reel

⁽¹⁾Inclusive of 25°C tolerance, operating temperature range, ±10% input voltage variation, load change, aging, shock and vibration.

MERCURY www.mercury-crystal.com

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Wave Form: True Sine Wave



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Part Number Format and Example

= Please specify

Example: 28HSR57-A-13.000

Explanation: HSR57 Sine wave clock oscillator, +2.8 V supply voltage, ±25 ppm frequency stability over 0 to +70°C, 13.000 MHz

28	HSR57	—	A	—	13.000	
①	②		③		④	

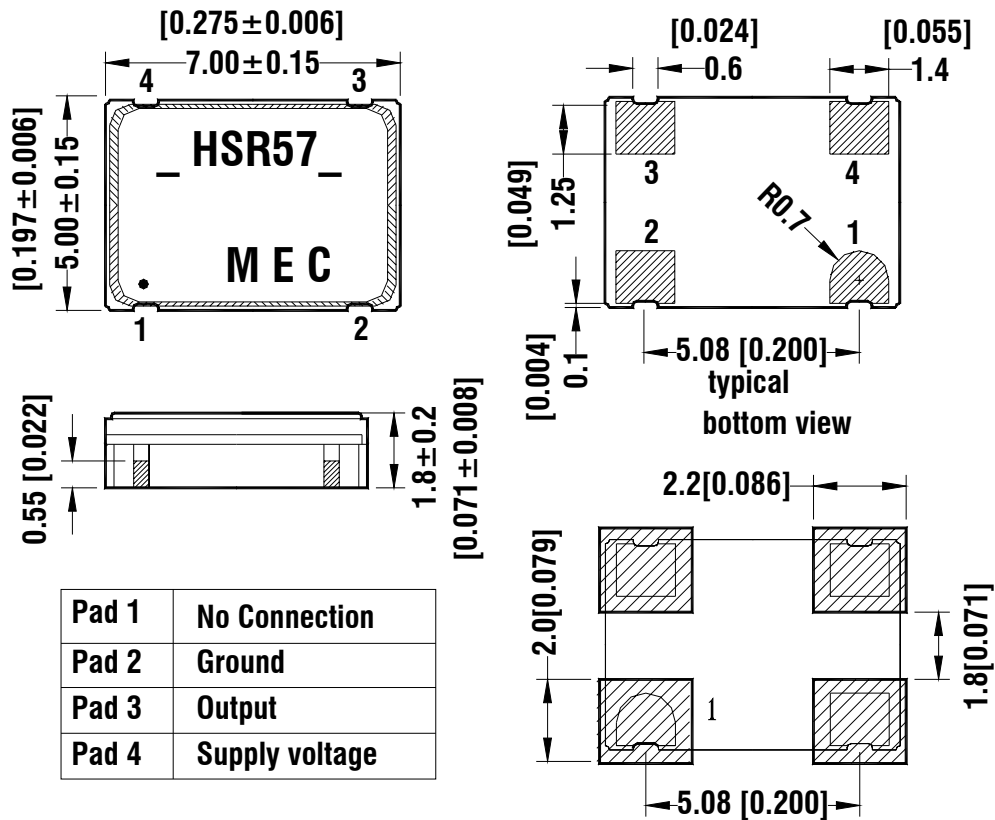
①: Voltage codes: "28" for +2.8 V, "3" for +3.3 V; "5" for +5.0 V

②: Product series ③: Frequency stability code: "A" ~ "F" or custom. See table above.

④: Frequency in MHz

HSR57 Package Dimensions and Recommended Pad Layout:

unit mm[inches]



Chamfered pad is pad No. 1. Count counter-clockwise when looking at top view.
Count clockwise when looking at bottom view.

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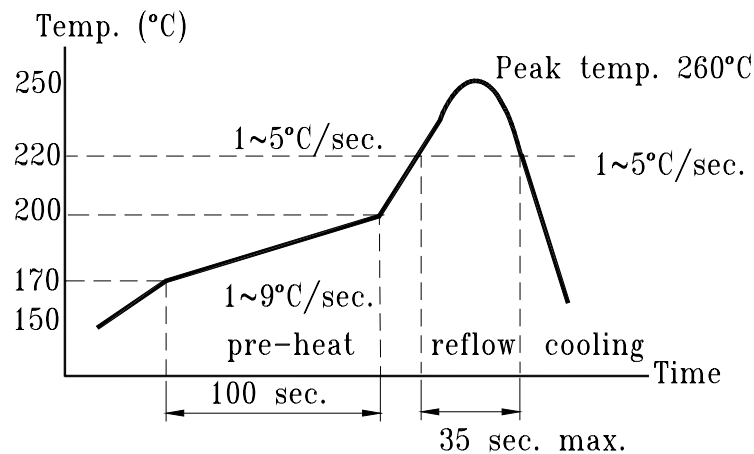


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Environmental Performance Specifications

Green Requirement	RoHS compliant ; Pb (lead) free
Storage temp. range	-55 to +125°C
Humidity	85% RH, 85°C, 48 hours
Hermetic seal	Leak rate 2×10^{-8} ATM-cm ³ /sec max.
Solderability	MIL-STD-202F method 208E
Reflow	260°C for 10 sec.
Vibration	MIL-STD-202F method 204, 35G, 50 to 2000 Hz
Shock	MIL-STD-202F method 213B, test condi. E, 1000GG ½ sine wave

Recommended Soldering Reflow Profile



Typical Phase Noise Data. (frequency 13.0 MHz) +3.3V

