



CMOS HS-1450 Series

Description

The **HS-1450 Series** of quartz crystal oscillators provide enable/disable 3-state CMOS compatible signals for bus connected systems. Supplying Pin 1 of the HS-1450 units with a logic "1" or open enables its pin 8 output. In the disabled mode, pin 8 presents a high impedance to the load. All units are designed to survive wave soldering operations without damage.

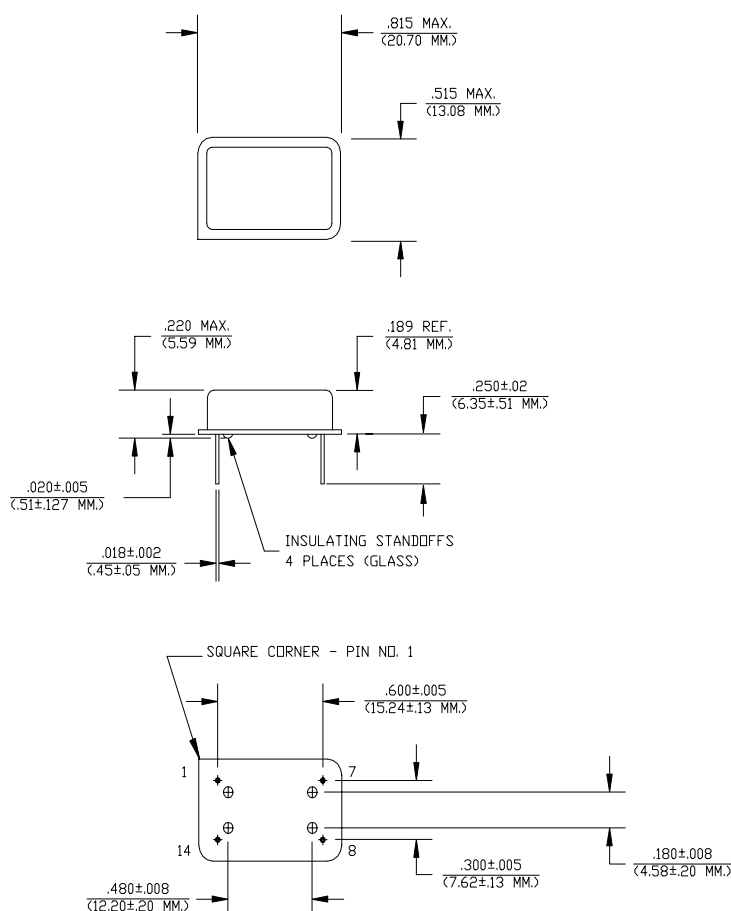
Features

- Wide frequency range— 4.0MHz to 40.0MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 3000g
- All metal, resistance weld, hermetically sealed package
- Low Jitter
- High Q Crystal actively tuned oscillator circuit
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- Low power consumption
- Gold plated leads - Solder dipped leads available upon request
- TTL compatible (HCT) at specified supply voltage

Electrical Connection

Pin Connection

1	Enable Input
7	Grd & Case
8	Output
14	V _{DD}



Dimensions are in inches and (MM)



**FREQUENCY
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HS-1450 Series Continued
CMOS

Rev. D

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	4.0MHz	----	40.0MHz
Duty Cycle	----	@ $V_{DD}/2$	45/55%	----	55/45%
Logic 0	V_{OL}	@ 600 μ A	----	----	0.2V
Logic 1	V_{OH}	@ 600 μ A	$V_{DD}-0.2V$	----	----
Rise & Fall Time	tr,tf	10-90%	----	----	3 ns
Tpz	----	----	----	----	25 ns
Jitter, RMS ⁽²⁾	----	----	----	----	8 psec
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	----	+100ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	V_{DD}	----	4.75V	5.0V	5.25V
Supply Current	I_{DD}	No Load	0.0 mA	----	30mA
Output current	I_O	----	0.0 mA	----	± 16.0 mA
Operating temperature	T_A	----	0°C	----	70°C
Storage temperature	T_S	----	-55°C	----	125°C
Power Dissipation	P_D	----	----	----	158 mW
Lead temperature	T_L	Soldering, 10 sec.	----	----	300°C
Load	----	----	----	----	15pf
Start-up time	t_s	----	----	2 ms	10 ms

Environmental and Mechanical Characteristics

Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-833, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1×10^{-8} atm.cc/sec of helium

Footnotes:

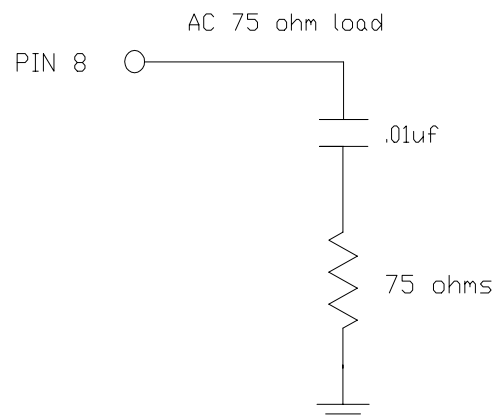
- 1) Standard frequency stability ($\pm 20, \pm 25, \pm 50$ ppm & others available)
- 2) Jitter performance is frequency dependent. Please contact factory for full characterization.

Creating a Part Number

HS - A145X - FREQ

Package Code	Tolerance/Performance
HS Leaded 4 pin (14 pin)	0 ± 100 ppm 0-70°C
SM Leaded 4 pin (14 pin) SMD	1 ± 50 ppm 0-70°C
Gull Wing	7 ± 25 ppm 0-70°C
Input Voltage	9 Customer Specific
Code Specification	A ± 20 ppm 0-70°C
A 3.3V	B ± 50 ppm -40 to +85°C
5V	C ± 100 ppm -40 to +85°C

Test Load:



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