



CMOS Compatible Enable/Disable HA-A1370/A1380 Series

Description

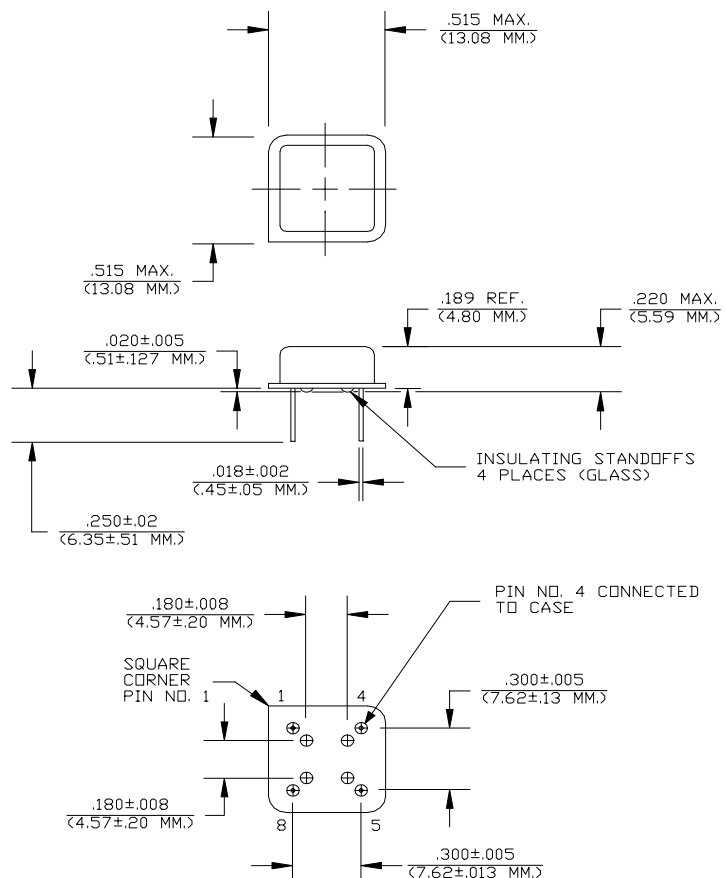
The **HA-A1370 Series** of quartz crystal oscillators provide enable/disable 3-state CMOS compatible signals for bus connected systems. Supplying Pin 1 of the **HA-A1370** units with a logic "0" enables the output on Pin 5. Alternately, supplying pin 1 of the **HA-A1380** units with a logic "1" enables its Pin 5 output. In the disabled mode, Pin 5 presents a high impedance to the load. All units are resistance welded in an all metal package, offering RFI shielding, and are designed to survive standard wave soldering operations without damage. Insulated standoffs to enhance board cleaning are standard.

Features

- Wide frequency range— 0.5MHz to 20.0MHz
- 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
- 3.3 Volt operation
- 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

Electrical Connection

| Pin | Connection |
|-----|-----------------|
| 1 | Enable Input |
| 4 | Grd & Case |
| 5 | Output |
| 8 | V _{DD} |



Dimensions are in inches and (MM)

HA-A1370/A1380 Series Continued
CMOS Compatible - Enable/Disable

Rev. E

Operating Conditions and Output Characteristics

Electrical Characteristics

| Parameter | Symbol | Conditions | Min | Typical | Max |
|--------------------------------------|----------|--|---------------|---------|---------|
| Frequency | ---- | ---- | 0.5MHz | ---- | 20.0MHz |
| Duty Cycle | ---- | @ $V_{DD}/2$ | 40/60% | ---- | 60/40% |
| 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% | ---- | ---- | 5 ns |
| Tpz | ---- | ---- | ---- | ---- | 25 ns |
| Enable/Disable Logic High Voltage | ---- | ---- | 3.0V | 2.5V | ---- |
| Enable/Disable Logic Low Voltage | ---- | ---- | ---- | ---- | 0.4V |
| 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} | ---- | 2.97V | 3.3V | 3.63V |
| Supply Current | I_{DD} | No Load | 0.0 mA | ---- | 40 mA |
| 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 | ---- | ---- | ---- | 145 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 | |
|--|------------------------------|
| HA - A137X - FREQ | |
| Package Code | Tolerance/Performance |
| HA Leaded 4 pin (8 pin) | 0 ± 100 ppm 0-70°C |
| SA Leaded 4 pin (8 pin) SMD Gull Wing | 1 ± 50 ppm 0-70°C |
| | 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:

