



HS-169 Single Frequency Oscillator 53.125MHz

Description

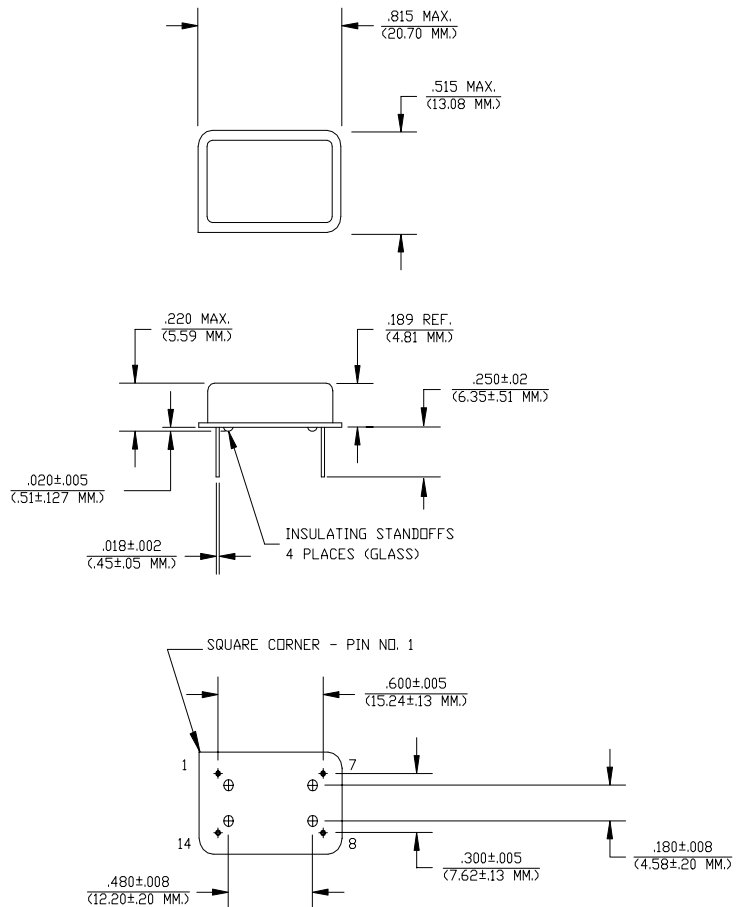
The **HS-169** crystal oscillator is designed to support the Tachyon™ clocking requirements at 53.125MHz.

Features

- Meets HP TACHYON™ Clock Generator
- 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
- Gold plated leads - Solder dipped leads available upon request
- Low power consumption
- RoHS Compliant, Lead Free Construction (unless solder dipped leads are supplied)

Electrical Connection

| Pin | Connection |
|-----|-----------------|
| 1 | N.C. |
| 7 | Grd & Case |
| 8 | Output |
| 14 | V _{CC} |



HS-169 Continued Single Frequency Oscillator 53.125MHz

Rev. G

Operating Conditions and Output Characteristics

Electrical Characteristics

| Parameter | Symbol | Conditions | Min | Typical | Max |
|------------------------------------|----------|--|---------|---------|---------|
| Duty Cycle | ----- | @ $V_{CC}/2$ | 45/55% | ----- | 55/45% |
| Logic 0 | V_{OL} | @ 16mA | ----- | 0.3V | 0.4V |
| Logic 1 | V_{OH} | @ 0.4mA | 2.4V | 4.0V | ----- |
| Rise & Fall Time | tr,tf | @ 0.4 to 2.4V | ----- | ----- | 2.8 ns |
| Jitter, RMS ⁽²⁾ | ----- | ----- | ----- | ----- | 5 psec |
| Frequency Stability ⁽¹⁾ | dF/F | Overall conditions including: voltage, calibration, temp., 20 yr aging, shock, vibration | -100ppm | ----- | +100ppm |

General Characteristics

| Parameter | Symbol | Conditions | Min | Typical | Max |
|-----------------------|----------|--------------------|--------|---------|-------------|
| Supply Voltage | V_{CC} | ----- | 4.75V | 5.0V | 5.25V |
| Supply Current | I_{CC} | No Load | 0.0 mA | ----- | 60 mA |
| Output current | I_O | ----- | 0.0 mA | ----- | ±25.0 mA |
| Operating temperature | T_A | ----- | 0°C | ----- | 70°C |
| Storage temperature | T_S | ----- | -55°C | ----- | 125°C |
| Power Dissipation | P_D | ----- | ----- | ----- | 315 mW |
| Lead temperature | T_L | Soldering, 10 sec. | ----- | ----- | 300°C |
| Load | ----- | ----- | ----- | ----- | 10 TTL gate |
| Start-up Time | t_s | ----- | ----- | ----- | 3 ms |

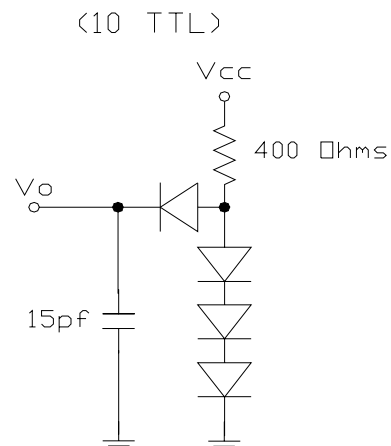
Environmental and Mechanical Characteristics

| | |
|---------------------|---|
| 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:

- Standard frequency stability ($\pm 20, \pm 25, \pm 50$ ppm & others available)
- Jitter performance is frequency dependent. Please contact factory for full characterization. RMS jitter bandwidth of 12kHz to 20MHz.

Test Load:



| Creating a Part Number | |
|------------------------------|------------------------------|
| HS - X16X - FREQ | |
| Package Code | Tolerance/Performance |
| HS Ledged 4 pin (14 pin) | 0 ±100ppm 0-70°C |
| SM Ledged 4 pin (14 pin) SMD | 1 ±50ppm 0-70°C |
| Gull Wing | 7 ±25ppm 0-70°C |
| Input Voltage | 9 Customer Specific |
| Code Specification | A ±20ppm 0-70°C |
| A 3.3V | B ±50ppm -40 to +85°C |
| 5V | C ±100ppm -40 to +85°C |