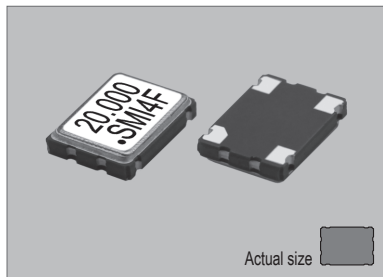
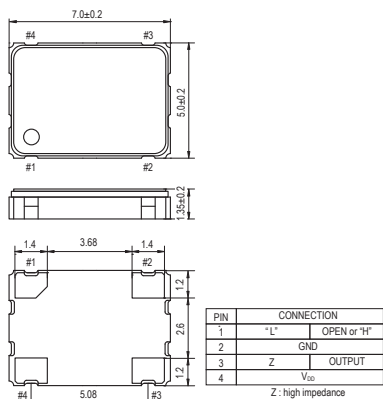


97SMOHG

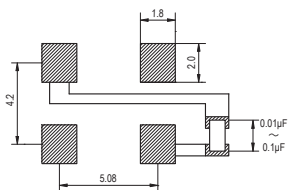


Actual size 0.157 gm (wt.)

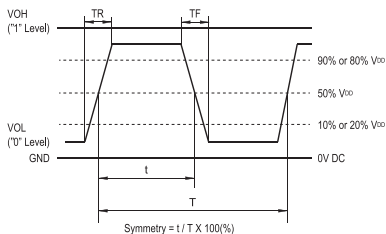
97SMOHG



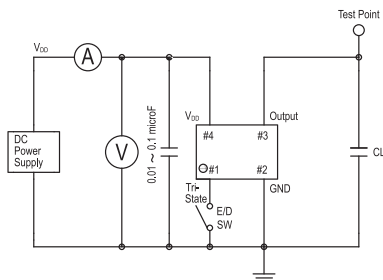
SOLDERING PATTERN



OUTPUT WAVEFORM



TEST CIRCUIT



CL: including fixture and probe capacitance.

STANDARD SPECIFICATIONS

● HIGH STABILITY CMOS OUTPUT
● PACKAGE SIZE 7.0x5.0 mm

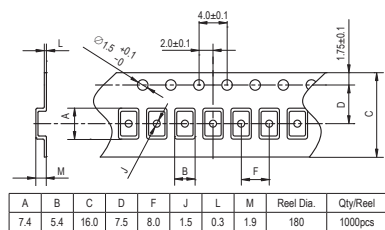
| Item | Specifications | |
|--|--|--|
| General part number | 97SMOHG*1 | |
| Frequency range | 4.000 MHz to 55.000 MHz | |
| Standard frequencies (MHz) | 5.000, 10.000, 12.000, 16.000, 20.000, 24.000, 32.000, 40.000, 44.000 | |
| Frequency stability*2 (over all conditions) | 97SMOHG(F) : ±15 ppm over -40°C to +85°C 97SMOHG(G) : ±10 ppm over -40°C to +85°C | |
| Operating Conditions | Operating temperature | -40°C to +85°C (Standard) |
| | Supply voltage (V _{DD}) | +1.8V, +2.5V, +3.0V or +3.3V DC ± 10% |
| | Stand-by control voltage (Pin#1) | V _{IH} : 70% V _{DD} min. V _{IL} : 30% V _{DD} max.*3 |
| Absolute Max. Ratings | Supply voltage | -0.3V to +4.0V DC |
| | Storage temperature | -40°C to +85°C |
| Input current (Pin#1 = Open or V _{IH}) | 8 mA max. (no load) | |
| Stand-by current*3 | 10 µA max. (Pin#1 = V _{IL}) | |
| Output (-40°C to +85°C) | Symmetry | 45% to 55% at 1/2 V _{DD} level |
| | Rise and fall times | 5 ns max. (10% V _{DD} to 90% V _{DD} level) |
| | "0" Level | V _{OL} : 10% V _{DD} max. |
| | "1" Level | V _{OH} : 90% V _{DD} min. |
| Load | 15 pF max. (CMOS) | |
| Disable delay time | 100 ns max. | |
| Enable delay time | 10 ms max. | |
| Start-up time | 10 ms max. | |
| SSB phase noise (at V _{DD} = +3.3V & 48.000 MHz) | -136 dBc / Hz, Typical at 1 kHz offset -160 dBc / Hz, Typical at 1 MHz offset | |
| RMS jitter (12 kHz to 20.000 MHz band) | 168 fs, Typical (at V _{DD} = +3.3V & 48.000 MHz) | |
| Reflow condition | +250°C ±10°C for 10 seconds +170°C ±10°C for 1 to 2 minutes (preheating) | |

(*1) Final part number to be assigned with package type, input voltage, frequency stability, operating temperature and frequency. e.g. 97SMOHG(3.0VF) 40.000MHz
 (*2) The frequency stability is inclusive of frequency tolerance (+25°C), temperature stability (-40°C to +85°C), input voltage change, load change, reflow frequency shift and aging (1st year at +25°C).
 (*3) Internal crystal oscillation to be halted (Pin#1 = V_{IL})

PACKAGE DATA

| Item | Package | 97SMOHG |
|------------------|---------|-----------------------------------|
| Lid | | Metal |
| Base | | Ceramic |
| Sealing | | Seam |
| Terminal | | Tungsten (metalized) |
| Terminal plating | | Gold / Nickel (surface) / (under) |
| RoHS | | Compliant (Pb-free) |

TAPE SPECIFICATIONS



| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|-----|-----|------|-----|-----|-----|-----|-----|-----------|----------|
| 7.4 | 5.4 | 16.0 | 7.5 | 8.0 | 1.5 | 0.3 | 1.9 | 180 | 1000pcs |

XTAL

CLK OSC

VCXO

TCXO

OCXO

MCF