

- ◆ Stability to ± 20 PPM
- ◆ +3.3Vdc or +5.0Vdc Operation
- ◆ CMOS/TTL Compatible
- ◆ Operating Temperature to -40°C to $+85^{\circ}\text{C}$
- ◆ Output Enable Standard
- ◆ Tape & Reel Packaging



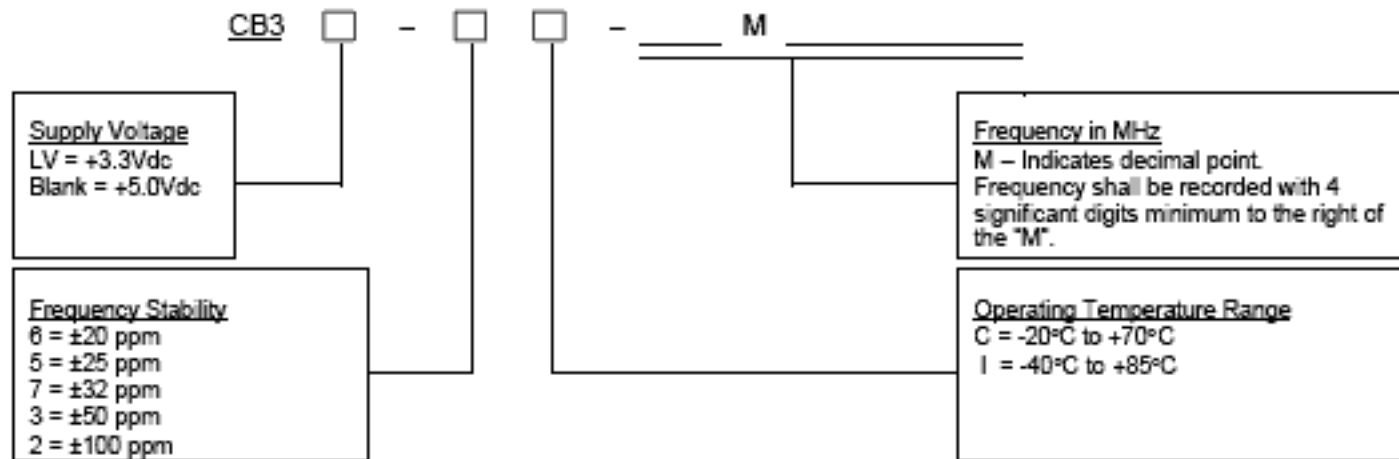
Electrical Characteristics

| Parameter | Symbol | Conditions | Min | Typical | Max | Unit |
|---|----------------------|--|---------------|----------------|------------------------|--------|
| Output Frequency Range | f_o | | | | | |
| CB3 | | - | 1.5 | - | 133.333 | MHz |
| CB3LV | | - | 1.5 | - | 133.333 | MHz |
| Stability (Note 1) (See Ordering Information) | $\Delta f/f$ | - | - | - | 20,25,32, 50 or 100 | ppm |
| Supply Voltage | V_{cc} | | | | | |
| CB3 | | - | 4.5 | 5.0 | 5.5 | V |
| CB3LV | | - | 3.0 | 3.3 | 3.6 | V |
| Operating Supply Current | I_{cc} | | | | | |
| CB3 | | 1.5 MHz to 20 MHz $C_L=50\text{pF}$ 20.1 MHz to 80 MHz $C_L=50\text{pF}$ 80.1 MHz to 133.333 MHz $C_L=15\text{pF}$ | - | 10 30 40 | 25 50 100 | mA |
| CB3LV | | 1.5 MHz to 20 MHz $C_L=15\text{pF}$ 20.1 MHz to 80 MHz $C_L=15\text{pF}$ 80.1 MHz to 133.333 MHz $C_L=15\text{pF}$ | - | 7 20 30 | 12 40 60 | mA |
| Output Load | Q_L | | | | | |
| | | 1.5 MHz to 50 MHz 50.1 MHz to 80 MHz 80.1 MHz to 133.333 MHz | - - - | - - - | 50 30 15 | pF |
| Output Voltage Levels | V_{OH} V_{OL} | | | | | |
| Logic '1' Level | V_{OH} | CMOS Load | $V_{cc}-0.5V$ | - | - | V |
| Logic '0' Level | V_{OL} | 10 TTL Load CMOS or TTL Load | - | $V_{cc}-0.6V$ | 0.4 | V |
| Output Current | I_{OH} I_{OL} | $V_{OH} = 3.9V/2.2V$ $V_{cc} = 4.5V/3.0V$ $V_{OL} = 0.4V$ $V_{cc} = 4.5V/3.0V$ | - - | - - | -16/-8 +16/+8 | mA |
| Output Duty Cycle (50% Level) | SYM | | 45 | - | 55 | % |
| Rise & Fall Time (10% - 90% Level) | t_R, t_F | | | | | |
| CB3 | | 1.5 MHz to 20 MHz $C_L=50\text{pF}$ 20.1 MHz to 80 MHz $C_L=50\text{pF}$ 80.1 MHz to 133.333 MHz $C_L=15\text{pF}$ | - - - | 8 4 2.5 | 10 8 5 | nS |
| CB3LV | | 1.5 MHz to 20 MHz $C_L=15\text{pF}$ 20.1 MHz to 80 MHz $C_L=15\text{pF}$ 80.1 MHz to 133.333 MHz $C_L=15\text{pF}$ | - - - | 6 3 1.5 | 8 4 3 | nS |
| Start Up Time | - | | - | - | 10 | mS |
| Enable Function (Note 2) | - | See 'Enable Truth Table' on Page 2 | - | - | - | - |
| Phase Jitter | t_{rms} | (Bandwidth 12 KHz – 20 MHz) | - | < 1 | - | pS RMS |

Notes:

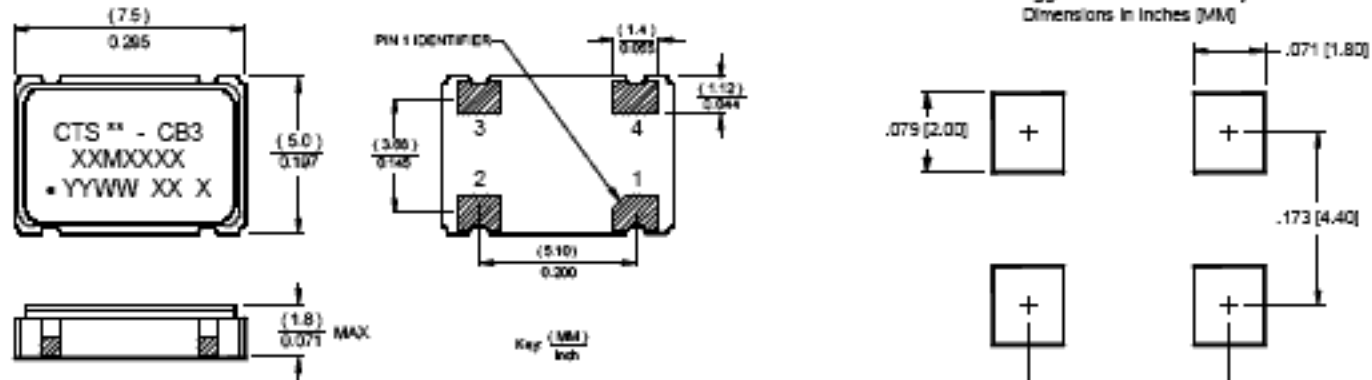
1. Inclusive of initial tolerance at time of shipment, changes in supply voltage, load, temperature and first year aging at an average operating temperature of 40°C .
2. Reference CTS Application Note 014-0002-0.

ORDERING INFORMATION



Example P/N: CB3LV - 3I - 32M7680 or CB3 - 3I - 32M7680

MECHANICAL SPECIFICATIONS



Marking Notes:

- ** Manufacturing Site Code.
- Frequency marked with 4 significant digits after the "M".
- XX – stability/temp. code.
- X – voltage code.

Terminations plated with 0.3 – 1.0 um gold (Au).

| Pin | Symbol | Functional Description |
|-----|--------|----------------------------|
| 1 | EOH | Enable |
| 2 | GND | Circuit and Package Ground |
| 3 | Output | RF Output |
| 4 | Vcc | Supply Voltage |

Enable Truth Table

| Pin 1 | Pin 3 |
|-------|-----------|
| "1" | Output |
| "0" | High Imp. |
| Open | Output |

QUALITY AND RELIABILITY

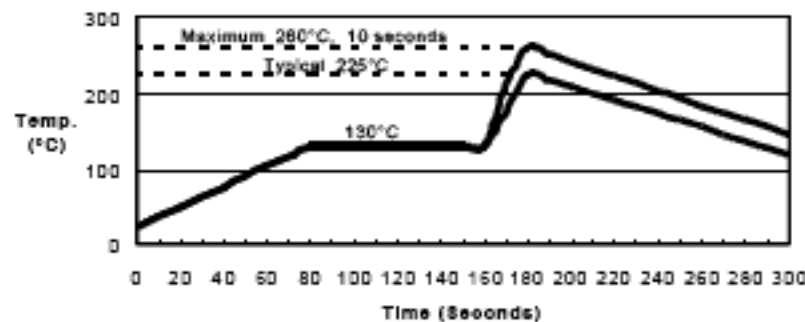
Quality Systems meet or exceed the requirements of ISO 9000: 2000 standards.

Reliability Audits are performed on this or similar products with results available upon request.

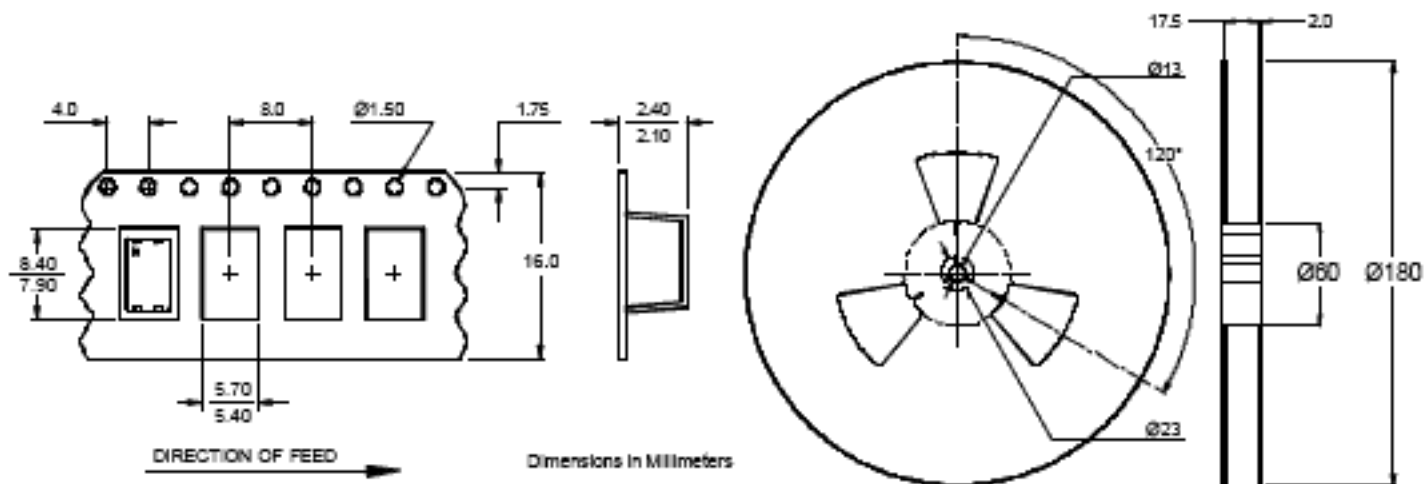
ENVIRONMENTAL SPECIFICATIONS

- Storage Temperature: -55°C to +125°C
- Temperature Cycle: 400 cycles, -55°C to +125°C, 10 min dwell, 1 min transfer
- Mechanical Shock: 1,500g's, 0.5mS, ½ sinewave, 3 shocks each direction, in 3 planes
- Sinusoidal Vibration: 0.06" D.A., 10 to 55 Hz and 20g's, 55 to 2,000 Hz, 3 cycles per plane
- Gross Leak: No leak shall appear while immersed in an FC40 or equivalent liquid at 125°C for 20 seconds
- Fine Leak: Mass spectrometer leak rates less than 2×10^{-8} cc/sec air equivalent
- Resistance to Soldering Heat: Product must survive 3 reflows of 260°C peak, 10 seconds maximum
- High Temperature Operating Bias: 2,000 hours at 125°C, disregarding frequency shift
- Frequency Aging: < 5 ppm shift in 1,000 hours at 85°C

Suggested Reflow Profile



TAPE AND REEL INFORMATION



Device quantity shall be 1,000 pieces on a 180mm reel.