

**Features:**

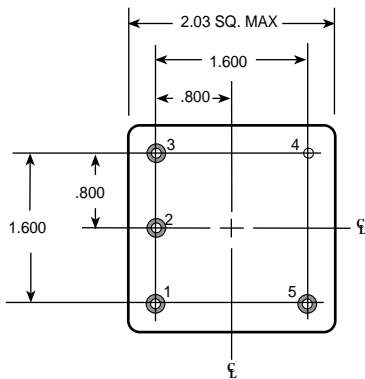
- Double Oven
- Small Size
- High Stability
- Electrical Frequency Adjust
- 5 to 15 MHz



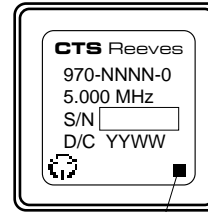
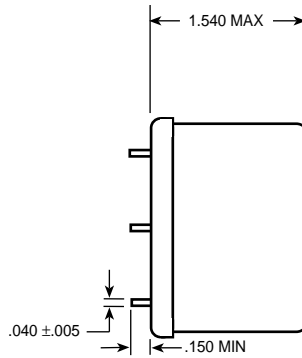
The Model 115 is a high performance double oven OCXO housed in a small package. The use of a 5 MHz 3rd overtone SC coldweld crystal provides for excellent long term aging performance. Applications include CDMA base station reference and Stratum II clock.

**Electrical Specifications:**

| <i>Parameter</i>                                    | <i>Available Frequencies</i>             |          |           |
|---|--|----------|-----------|
|   | 5.0, 10.0, or 15.0 MHz                   |          |           |
| Input Voltage                                       | +12.0 Vdc $\pm$ 5%                       |          |           |
| Supply Current (@25°C) Warm-up<br>Steady State      | 10 Watts<br>4 Watts                      |          |           |
| Output<br>(50 ohm load)                             | Sinewave<br>+7.0 dBm $\pm$ 1.5 dB        |          |           |
| Load  | 50 $\Omega$                              |          |           |
| Harmonics   | -35 dBc                                  |          |           |
| Sub-Harmonics (10 & 15 MHz output)                  | -40 dBc                                  |          |           |
| Spurious  | -80 dBc                                  |          |           |
| Warm-up<br>Referenced to the frequency @ 1 hr.      | $\pm$ 2 x 10 <sup>-8</sup> in 15 minutes |          |           |
| Phase Noise (5 MHz)<br>(dBc/Hz)<br>(1 Hz Bandwidth) | Offset                                   | Standard | Low Noise |
|   | 1 Hz                                     | -85      | -85       |
|   | 10 Hz                                    | -115     | -115      |
|   | 100 Hz                                   | -140     | -140      |
|   | 1 kHz                                    | -145     | -150      |
| Frequency Stability vs Voltage ( $\pm$ 5%)          | $\pm$ 3 x 10 <sup>-11</sup>              |          |           |
| Electrical Frequency Adjust<br>(positive slope)     | Sufficient for 10 years<br>0 to +5 Vdc   |          |           |



PIN NUMBERS ARE FOR REFERENCE ONLY



PIN 1 INDICATOR

**Pin Connections**

| PIN | FUNCTION     |
|-----|--------------|
| 1   | EFC          |
| 2   | VOLTAGE REF. |
| 3   | RF OUTPUT    |
| 4   | GROUND, CASE |
| 5   | 12V          |

**Mechanical Specifications:**

**Case:**

Metal, hermetically sealed

**Leads:**

Kovar, solder coated

**Seal:**

Solder Seal

**Leak Test:**

Leak rate less than  $5 \times 10^{-5}$   
Atmosphere-cc/sec of helium

**Solderability:**

95% solder coverage, using RMA flux 63  
SN/37 Pb at  $+245^{\circ}\text{C} \pm 5^{\circ}\text{C}$

**Temperature:**

Operating: See chart  
Storage:  $-55^{\circ}$  to  $85^{\circ}\text{C}$

**Vibration:**

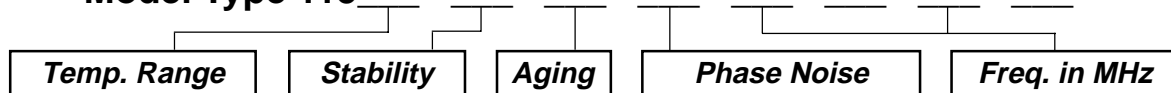
5 G's sine, 10 to 200 Hz

**Mechanical Shock:**

50 G's 5ms pulse (3 shock/plane)

**Ordering Information:**

**Model Type 115**



| Temp Stability (see note)              |      | $2 \times 10^{-10}$ | $4 \times 10^{-10}$ | $6 \times 10^{-10}$ |
|--|------|---------------------|---------------------|---------------------|
| Temp Range                             | Code | A                   | B                   | C                   |
| $0^{\circ}$ to $+50^{\circ}\text{C}$   | A    | X                   | X                   | X                   |
| $0^{\circ}$ to $+65^{\circ}\text{C}$   | B    | X                   | X                   | X                   |
| $0^{\circ}$ to $+75^{\circ}\text{C}$   | C    | X                   | X                   | X                   |
| $-30^{\circ}$ to $+75^{\circ}\text{C}$ | D    |                     |                     | X                   |

| 1 <sup>st</sup> Year Aging | Per Day Aging           | Code |
|----------------------------|-------------------------|------|
| $\pm 2 \times 10^{-8}$     | $\pm 5 \times 10^{-11}$ | A    |
| $\pm 3 \times 10^{-8}$     | $\pm 1 \times 10^{-10}$ | B    |
| $\pm 5 \times 10^{-8}$     | $\pm 3 \times 10^{-10}$ | C    |

| Phase Noise | Code |
|-------------|------|
| Standard    | A    |
| Low Noise   | B    |

Note: Temperature stability is total change (peak to peak).  
Not all options are available at all frequencies. Consult factory for details.