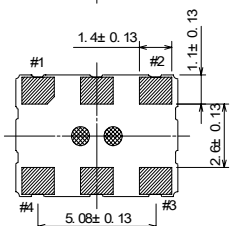
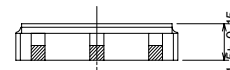
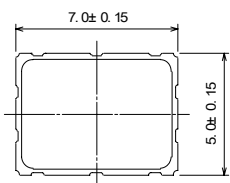


- |                                       |  |
|---------------------------------------|--|
| 1. Part No. :                         | 97SMO-SS<br>99SMO-SS   |
| 2. Output frequency range :           | 1.0000 MHz to 166.0000 MHz ( $V_{DD} = +2.5V$ )<br>1.0000 MHz to 200.0000 MHz ( $V_{DD} = +3.3V$ )                                 |
| 3. Modulation ratio :                 | Center spread : $\pm 0.125\%$ to $\pm 2\%$ (0.125 step)<br>Down spread : $-0.25\%$ to $-4.0\%$ (0.25% step)                        |
| 4. Standard frequency :               | 24.0000 MHz, 25.0000 MHz, 27.0000 MHz,<br>40.0000 MHz, 54.0000 MHz   |
| 5. Frequency stability :              | A: $\pm 100$ ppm ( $\pm 0.01\%$ ) referred to frequency average<br>B: $\pm 50$ ppm ( $\pm 0.005\%$ ) referred to frequency average |
| 6. Absolute Max.Ratings               |  |
| Supply voltage:                       | -0.5V to +4.6V   |
| Storage temperature:                  | -40°C to +125°C  |
| 7. Operating Conditions               |  |
| Operating temperature :               | -20°C to +75°C   |
| Input voltage ( $V_{DD}$ ) :          | +2.5V DC $\pm 10\%$ to +3.3V DC $\pm 10\%$   |
| 8. Input current :                    | 30 mA max.   |
| 9. Stand-by current:                  | 10 $\mu A$ max.(Pin#1= $V_{IL}$ )  |
| 10. Output (-20°C to +75°C)           |  |
| Symmetry :                            | 45% to 55% at $1/2V_{DD}$ level  |
| Rise and fall times :                 | 3 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.   |
| Output load :                         | CMOS 15pF max.   |
| 11. Tri-state control voltage :       | 70% $V_{DD}$ min. ( $V_{IH}$ )<br>30% $V_{DD}$ max. ( $V_{IL}$ )   |
| 12. Start-up time :                   | 10 ms max.   |
| 13. Enable/Disable phase delay time : | 10 ns max.   |
| 14. Jitter (Cycle to cycle)           | 100 ps max.  |
| 15. Aging :                           | $\pm 5$ ppm/year max. at +25°C $\pm 3^\circ C$   |
| 16. Reflow soldering condition :      | +250°C $\pm 10^\circ C$ for 10 seconds (reflow soldering)<br>+170°C $\pm 10^\circ C$ for 1 to 2 minutes (preheating)               |
| 17. Outline dimentions :              | See below  |

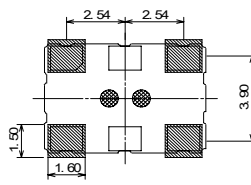
RoHS compliant (Pb-free)

**97SMO-SS**

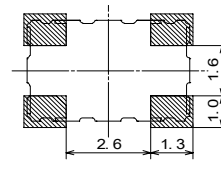
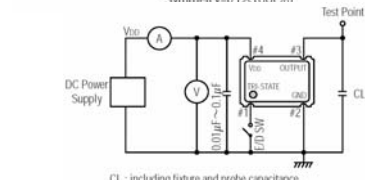
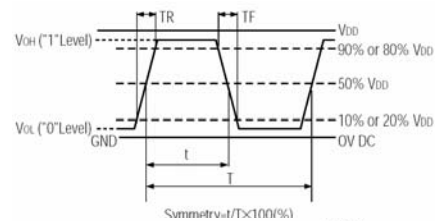
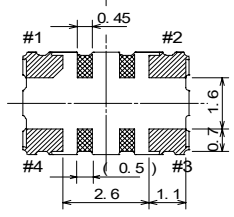
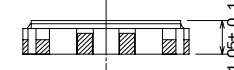
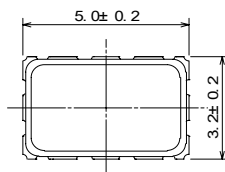


PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	$V_{DD}$

Z: high impedance



**99SMO-SS**



mm



ITEM

**SPREAD SPECTRUM  
CRYSTAL CLOCK OSCILLATORS**

No.

**SO-9982A**