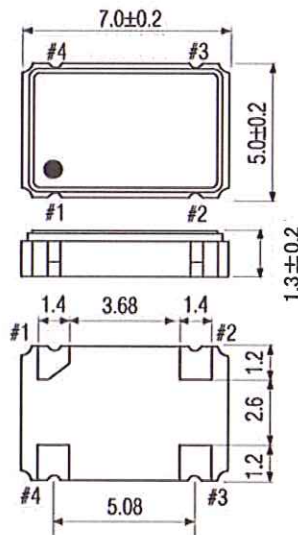
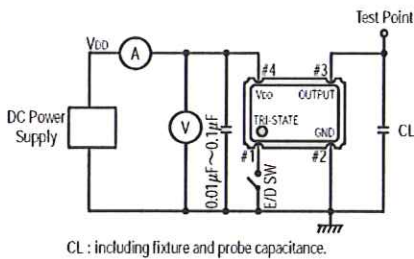
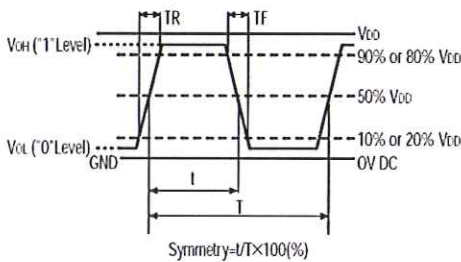


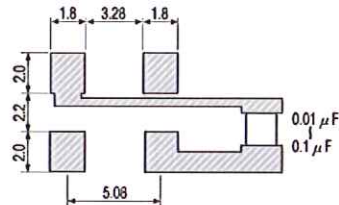
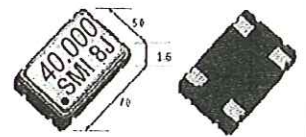
1. Part No. : 97SMOHG
2. Output frequency : 40.0000 MHz
3. Frequency range : 16.0000 MHz to 80.0000 MHz
3. Frequency stability :  $\pm 10$  ppm ( $\pm 0.001\%$ ) over all conditions/ $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$   
 $\pm 15$  ppm ( $\pm 0.0015\%$ ) over all conditions/ $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
4. Operating Conditions
  - Operating temperature :  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
  - Storage temperature :  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
  - Input voltage( $V_{DD}$ ) :  $+3.3\text{V DC} \pm 5\%$  ( $+1.8\text{V}$ ,  $+2.5\text{V}$  &  $+3.0\text{V}$  available)
  - Tri-state control voltage :  $70\%V_{DD}$  min. ( $V_{iH}$ )  
 $30\%V_{DD}$  max. ( $V_{iL}$ )
5. Input current : 7 mA max. (2 mA, Typ. at  $F=40.0000$  MHz &  $V_{DD}=+3.3\text{V}$ )
6. Stand-by current :  $10 \mu\text{A}$  max. ( $\text{Pin}\#1=V_{iL}$ )
7. Output ( $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ )
  - Symmetry : 45% to 55% at  $1/2 V_{DD}$  level
  - Rise and fall times : 4.5 ns max. (0.6 ns, Typ. at  $F=40.0000$  MHz &  $V_{DD}=+3.3\text{V}$ )  
 (10% $V_{DD}$  to 90% $V_{DD}$  level)
  - "0" level : 0.4V max. ( $V_{oL}$ )
  - "1" level :  $V_{DD}-0.4\text{V}$  min. ( $V_{oH}$ )
  - Output load : CMOS 15 pF max.
9. Start-up time : 200 ms max.
10. SSB phase noise :  $-135$  dBc/Hz max. at 1 kHz offset ( $F=40.0000$  MHz &  $V_{DD}=+3.3\text{V}$ )
11. Disable phase delay time : 100 ns max.
12. Enable phase delay time : 200 ms max.
12. Reflow soldering condition :  $+250^{\circ}\text{C} \pm 10^{\circ}\text{C}$  for 10 seconds (reflow soldering)  
 $+170^{\circ}\text{C} \pm 10^{\circ}\text{C}$  for 1 to 2 minutes (pre-heating)
13. Outline dimensions : See below



**97SMOHG**  
RoHS (Pb-free)

OSC WITH TRI-STATE		
PIN	CONNECTION	
1	"L"	OPEN or "H"
2	GND	
3	Z	OUTPUT
4	$V_{DD}$	

Z: high impedance



mm

ISSUED		CHECKED		APPROVAL	
	Naoko Nagakura		<i>Hayato</i>		<i>[Signature]</i>
ITEM. <b>CRYSTAL CLOCK OSCILLATORS</b>		No.		<b>SO-9971A</b>	