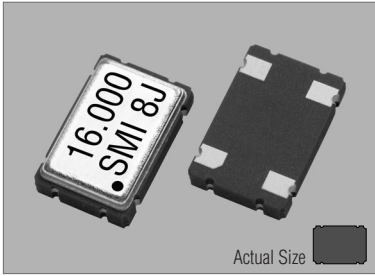


Crystal Clock Oscillators

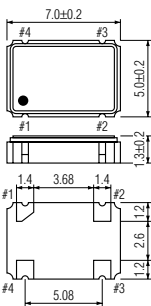
97SMO(K) (+1.8V, +2.5V, +2.8V, +3.0V or +3.3V FIXED MODELS)

STANDARD SMD CLOCK OSCILLATORS

97SMO(K)



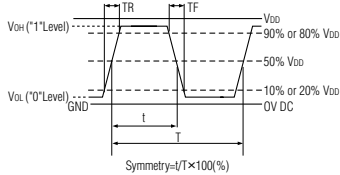
97SMO(K)



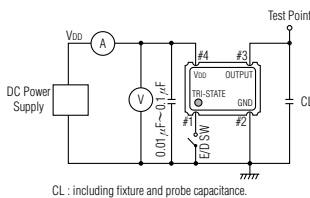
PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	V _{DD}

Z : high impedance

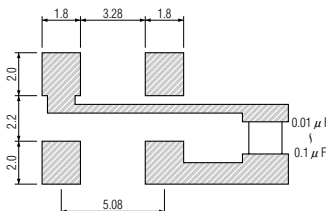
OUTPUT WAVEFORM



TEST CIRCUIT



SOLDERING PATTERN



STANDARD SPECIFICATIONS

Item	Specifications
Generic part number	97SMO(K)*1
Frequency range	1.000 MHz to 166.000 MHz
Frequency stability (0°C to +70°C) over all conditions	97SMO(KL) : ±100 ppm 97SMO(KM) : ±50 ppm 97SMO(KN) : ±30 ppm 97SMO(KP) : ±25 ppm 97SMO(KQ) : ±20 ppm
Operating Conditions	
Operating temperature	0°C to +70°C (standard) -40°C to +85°C (W)
Input voltage (VDD)	+1.8V**2 ±5%, +2.5V**3 ±5%, +2.8V ±5%, +3.0V ±10% or +3.3V ±10%
Stand-by control voltage (Pin#1)	V _{IH} : 70%VDD min. V _{IL} : 20%VDD max.**4
Absolute Max. Ratings	
Supply voltage	-0.5V to +7.0V DC
Storage temperature	-55°C to +125°C
Input current (Pin#1 = Open or V _{IH})	20 mA max. (VDD = +1.8V) 26 mA max. (VDD = +2.5V) 55 mA max. (VDD = +2.8V, +3.0V & +3.3V)
Stand-by current**2	10 μA max. (Pin#1=V _{IL})
Output (-40°C to +85°C)	
Symmetry	40% to 60% at 50%VDD level
Rise and fall times	10 ns max. (10%VDD to 90%VDD level)
"0" level	V _{OL} : 10%VDD max.
"1" level	V _{OH} : 90%VDD min.
Load	15 pF max. (CMOS)
Disable delay time	150 ns max.
Enable delay time	10 ms max.
Startup time	10 ms max.
Aging	±5 ppm max. at +25°C ±3°C for first year
Reflow condition	+250°C ±10°C for 10 seconds +170°C ±10°C for 1 to 2 minutes (preheating)

(※1) Final exact part number to be determined with frequency, frequency stability, operating temperature and input voltage.
e.g. 97SMO(K3.3VP) 16.000 MHz.

(※2) Frequency range is 1.0 MHz to 50.0 MHz.

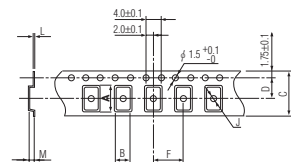
(※3) Frequency range is 1.0 MHz to 125.0 MHz.

(※4) Internal crystal oscillation to be halted (Pin#1 = V_{IL}).

PACKAGE DATA

Item	Package	97SMO(K)
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
7.65	5.75	16.0	7.5	8.0	2.0	0.3	2.2	178	1000pcs