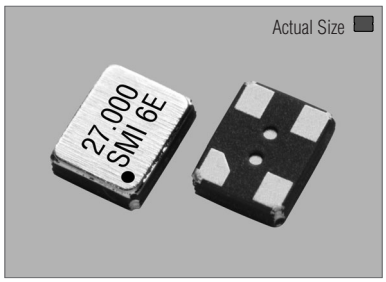
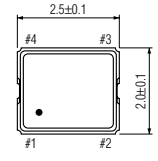
22SMO (+1.8V,+2.5V, +2.8V, +3.0V or +3.3V FIXED MODELS) STANDARD SMD CLOCK OSCILLATORS

22SMO



22SMO

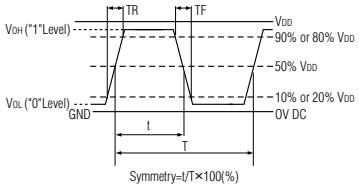


∗ The terminals (A & B) not to be connected.

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

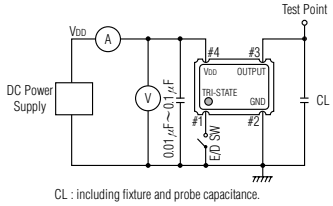
Z : high impedance

OUTPUT WAVEFORM



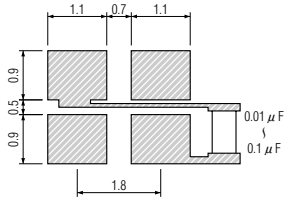
Symmetry=t/T×100(%)

TEST CIRCUIT



CL : including fixture and probe capacitance.

SOLDERING PATTERN



STANDARD SPECIFICATIONS

Item	Specifications
Generic part number	22SMO※1
Frequency range	0.75 MHz to 75.0000 MHz
Frequency stability over all conditions	22SMO(A) : ±100 ppm over −20°C to +70°C 22SMO(B) : ±50 ppm over −20°C to +70°C 22SMO(C) : ±30 ppm over −10°C to +70°C 22SMO(D) : ±25 ppm over −10°C to +70°C 22SMO(AW) : ±100 ppm over −40°C to +85°C 22SMO(BW) : ±50 ppm over −40°C to +85°C
Operating Conditions **Operating temperature** **Input voltage (V_{DD})** **Stand-by control voltage (Pin#1)**	 −20°C to +70°C (standard) −40°C to +85°C (W) +1.8V ±5%, +2.5V ±5%, +2.8V ±5%, +3.0V ±5% or+3.3V ±5% V_{IH} : 70%V_{DD} min. V_{IL} : 30%V_{DD} max.※2
Absolute Max. Ratings **Supply voltage** **Storage temperature**	 −0.5V to +7.0V DC −55°C to +100°C
Input current	+1.8V: 2.5 mA max. (0.5 to 30 MHz); 3.0 mA max. (30 to 40 MHz); 3.5 mA max. (40 to 50 MHz) +2.5V: 5 mA max.; 9 mA max.; 11 mA max.; 14 mA max. +2.8V/+3.0V: 6 mA max.; 11 mA max.; 16 mA max.; 20 mA max. +3.3V: 7 mA max. (0.75 to 20 MHz); 13 mA max. (20 to 40 MHz); 19 mA max. (40 to 60 MHz); 24 mA max. (60 to 75 MHz)
Stand−by current※2	10 μA max. (Pin #1=V_{IL})
Output (−20°C to +70°C) **Symmetry** **Rise and fall times** **"0" level** **"1" level** **Load**	 40% to 60% at 50%V_{DD} level (V_{DD} = +2.5V) 45% to 55% at 50%V_{DD} level (V_{DD} = +1.8V,+2.8V,+3.0V & +3.3V) 10 ns max. (10%V_{DD} to 90%V_{DD} level) V_{OL} : 10%V_{DD} max. V_{OH} : 90%V_{DD} min. 15 pF max. (CMOS)
Disable delay time	150 ns max.
Enable delay 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)

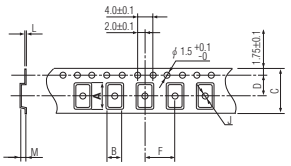
(※1) Final exact part number to be determined with frequency, frequency stability, operating temperature and input voltage.
e.g. 22SMO(2.8VC) 27.000 MHz.

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

PACKAGE DATA

Item \ Package	22SMO
Lid	Metal
Base	Ceramic
Sealing	AuSn
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
2.8	2.3	8.0	3.5	4.0	1.0	0.25	1.1	180	2000pcs 1000pcs