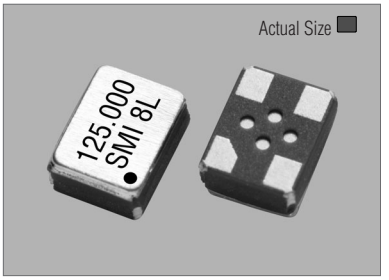
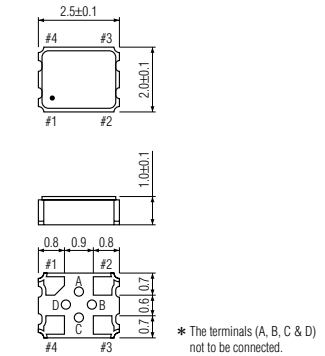
Crystal Clock Oscillators

22SMOP (+2.8V, +3.0V or +3.3V PROGRAMMABLE MODELS) STANDARD SMD CLOCK OSCILLATORS

22SMOP



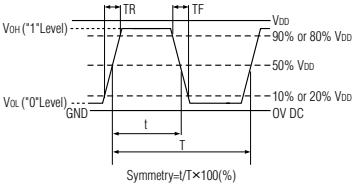
22SMOP



PIN	CONNECTION	
1	"L"	OPEN or "H"
2	GND	
3	Z	OUTPUT
4	VDD	

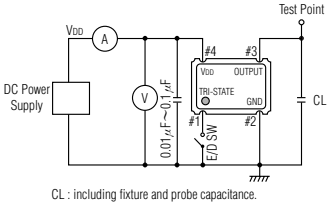
Z : high impedance

OUTPUT WAVEFORM



Symmetry=t/T×100(%)

TEST CIRCUIT



CL : including fixture and probe capacitance.

STANDARD SPECIFICATIONS

using PLL technology

Item	Specifications
Generic part number	22SMOP※1
Frequency range	0.5 MHz to 200.0000 MHz
Frequency stability	22SMOP(A) : ±100 ppm over −20˚C to +75˚C
	22SMOP(B) : ±50 ppm over −20˚C to +75˚C
over all conditions	22SMOP(AW) : ±100 ppm over −40˚C to +85˚C
Operating Conditions	
Operating temperature	−20˚C to +75˚C (standard)
	−40˚C to +85˚C (W)
Input voltage (VDD)	+2.8V ±5%, +3.0V ±5% or +3.3V ±5%
Stand-by control voltage (Pin#1)	VIH : 80%VDD min.
	VIL : 20%VDD max.※2
Absolute Max. Ratings	
Supply voltage	−0.3V to +7.0V DC
Storage temperature	−55˚C to +125˚C
Input current	30 mA max. (Pin #1 = Open or VIH)
Stand−by current※2	100 μA max. (Pin #1=VIL)
Output (−20˚C to +75˚C)	
Symmetry	45% to 55% at 50%VDD level (0.5MHz to 80.00MHz)
	40% to 60% at 50%VDD level (80.00MHz to 200.00MHz)
Rise and fall times (10%VDD to 90%VDD level)	7 ns max. (0.5MHz to 100.000MHz)
	4 ns max. (100.000MHz to 200.000MHz)
"0" level	VOL : 10%VDD max.
"1" level	VOH : 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
Jitter	200 ps : Cycle to cycle
	250 ps : Peak to peak
Reflow condition	+250˚C ±10˚C for 10 seconds
	+170˚C ±10˚C for 1 to 2 minutes (preheating)

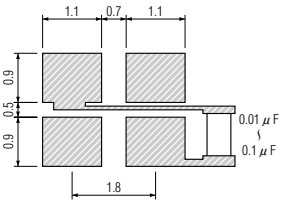
(※1) Final exact part number to be determined with frequency, frequency stability, operating temperature and input voltage.
e.g. 22SMOP(3.3VA) 125.000 MHz.

(※2) Internal crystal oscillation to be halted (Pin #1=VIL).

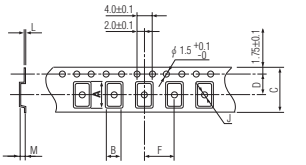
PACKAGE DATA

Item \ Package	22SMOP
Lid	Metal
Base	Ceramic
Sealing	AuSn
Terminal	Tungsten (metalized)
Terminal plating	Gold / Nickel (surface) / (under)
RoHS	Compliant (Pb-free)

SOLDERING PATTERN



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