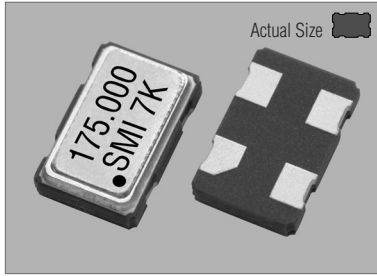


Crystal Clock Oscillators

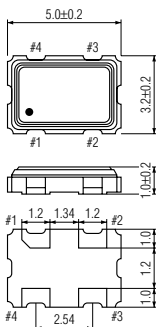
99SMOP (+3.0V or +3.3V PROGRAMMABLE MODELS)

STANDARD SMD CLOCK OSCILLATORS

99SMOP



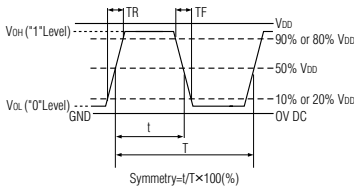
99SMOP



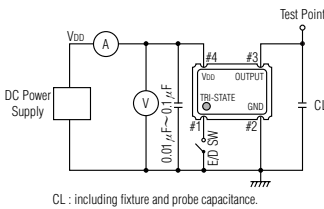
PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	V _{DD}

Z : high impedance

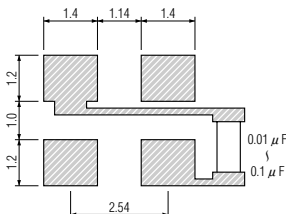
OUTPUT WAVEFORM



TEST CIRCUIT



SOLDERING PATTERN



STANDARD SPECIFICATIONS

using PLL technology

Item	Specifications
Generic part number	99SMOP ^{※1}
Frequency range	1.000 MHz to 181.000 MHz
Frequency stability (-10°C to +70°C)	99SMOP(A) : ±100 ppm 99SMOP(B) : ±50 ppm over all conditions
Operating Conditions	
Operating temperature	-10°C to +70°C
Input voltage (VDD)	+3.0V ±10% or +3.3V ±10%
Stand-by ^{※2} control voltage (Pin#1)	V _{IH} : 70%VDD min. V _{IL} : 20%VDD max. ^{※3}
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})	15 mA max. (1.0 MHz to 40.0 MHz) 22 mA max. (40.0 MHz to 70.0 MHz) 30 mA max. (70.0 MHz to 181.0 MHz)
Stand-by current ^{※2}	30 µA max. (Pin #1=V _{IL})
Output (-10°C to +70°C)	
Symmetry	45% to 55% at 50%VDD level (1.0 MHz to 70.0 MHz) 40% to 60% at 50%VDD level (70.0MHz to 181.0 MHz)
Rise and fall times	5 ns max. (10%VDD to 90%VDD level) : 1.0 MHz to 70.0 MHz 3 ns max. (20%VDD to 80% VDD level) : 70.0 MHz to 181.0 MHz
"0" level	V _{OL} : 10%VDD max. (1.0 MHz to 125.0 MHz) V _{OL} : 20%VDD max. (125.0 MHz to 181.0 MHz)
"1" level	V _{OH} : 90%VDD min. (1.0 MHz to 125.0 MHz) V _{OH} : 80%VDD min. (125.0 MHz to 181.0 MHz)
Load	15 pF max. (CMOS) : 1.0 MHz to 125.0 MHz 10 pF max. (CMOS) : 125.0 MHz to 181.0 MHz
Disable delay time	100 ns max.
Enable delay time	10 ms max.
Startup time	10 ms max.
Aging(non operating)	±5 ppm max. at +25°C ±3°C for first year
Jitter(pSp-p)	250 max.(CL=15pF)
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 and input voltage.
e.g. 99SMOP(3.3VA) 175.000 MHz.

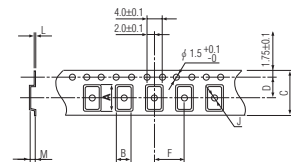
(※2) Output enable/disable function (OE) is available upon request, where internal crystal oscillation to continue.

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

PACKAGE DATA

Item	Package	99SMOP
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
5.4	3.5	12.0	5.5	8.0	1.5	0.3	1.4	178	1000pcs