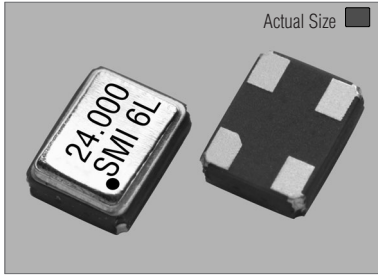
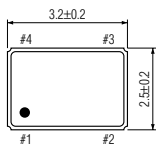


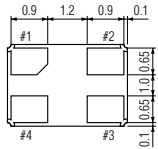
### 32SMO



### 32SMO



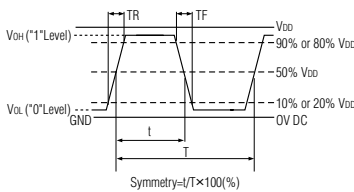
Package	Height
32SMO(0.7)	0.6±0.1mm
32SMO(1.0)	0.9±0.1mm
32SMO(1.2)	1.1±0.1mm



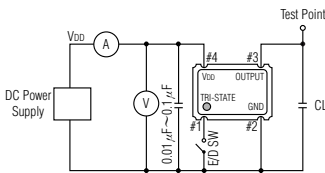
PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	VDD

Z: high impedance

### OUTPUT WAVEFORM

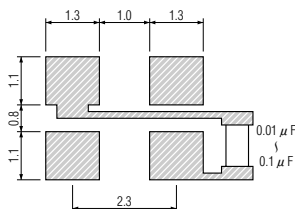


### TEST CIRCUIT



CL: including fixture and probe capacitance.

### SOLDERING PATTERN



### STANDARD SPECIFICATIONS

Item	Specifications
Generic part number	32SMO*1
Frequency range	0.5 MHz to 133.000 MHz
Frequency stability	32SMO(A) : ±100 ppm over -20°C to +70°C 32SMO(B) : ±50 ppm over -20°C to +70°C 32SMO(C) : ±30 ppm over -20°C to +70°C 32SMO(D) : ±25 ppm over -10°C to +70°C 32SMO(AW) : ±100 ppm over -40°C to +85°C 32SMO(BW) : ±50 ppm over -40°C to +85°C
over all conditions	
Operating Conditions	
Operating temperature	-20°C to +70°C (standard) -40°C to +85°C (W)
Input voltage (VDD)	+1.8V ±5%, +2.5V ±5%, +2.8V ±5%, +3.0V ±5% or +3.3V ±5%
Stand-by control voltage (Pin#1)	V <sub>IH</sub> : 70%VDD min. V <sub>IL</sub> : 30%VDD max.*2
Absolute Max. Ratings	
Supply voltage	-0.5V to +7.0V DC
Storage temperature	-55°C to +100°C
Input current (Pin#1=Open or V <sub>IH</sub> )	+1.8V: 2.5 mA max. (0.5 to 30 MHz) +2.5V: 5 mA max. (0.5 to 30 MHz) +2.8V/+3.0V: 6 mA max. (0.5 to 30 MHz) +3.3V: 7 mA max. (0.75 to 20 MHz) 3.0 mA max. (30 to 40 MHz) 9 mA max. (11 to 13 MHz) 11 mA max. (16 to 19 MHz) 14 mA max. (20 to 24 MHz) 3.5 mA max. (40 to 50 MHz) 11 mA max. (16 to 19 MHz) 19 mA max. (40 to 60 MHz) 24 mA max. (60 to 75 MHz)
Stand-by current	10 μA max. (Pin #1=V <sub>IL</sub> )
Output (-40°C to +85°C)	
Symmetry	40% to 60% at 50%VDD level (VDD=+2.5V) 45% to 55% at 50%VDD level (VDD=+1.8V, +2.8V, +3.0V & +3.3V)
Rise and fall times	10 ns max. (10%VDD to 90%VDD level)
"0" level	V <sub>OL</sub> : 10%VDD max.
"1" level	V <sub>OH</sub> : 90%VDD min.
Load	15 pF max. (CMOS)
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
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.

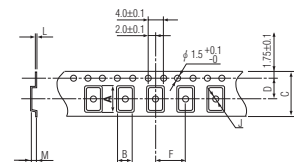
e.g. 32SMO(2.8VD) 24.000 MHz.

(※2) Internal crystal oscillation to be halted (Pin #1=V<sub>IL</sub>).

### PACKAGE DATA

Item	Package	32SMO
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
3.5	2.8	8.0	3.5	4.0	1.0	0.3	1.4	178	1000pcs