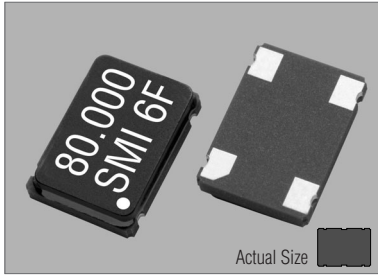
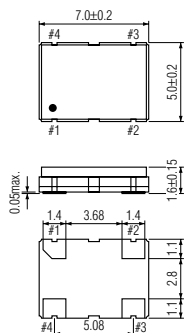


### 91SMO



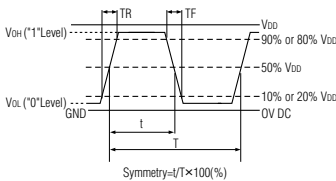
### 91SMO



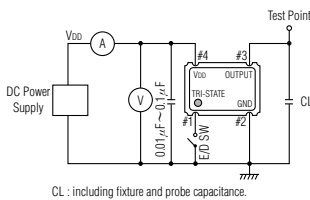
PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	V <sub>DD</sub>

Z: high impedance

### OUTPUT WAVEFORM

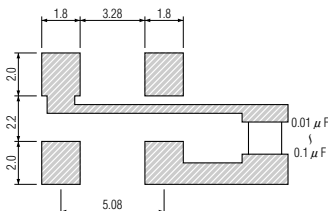


### TEST CIRCUIT



CL: including fixture and probe capacitance.

### SOLDERING PATTERN



## STANDARD SPECIFICATIONS

Item	Specifications			
Generic part number	91SMO <sup>※1</sup>			
Frequency range	1.8 MHz to 80.0 MHz	100.0MHz to 165.0 MHz	1.8 MHz to 80.0 MHz	1.8 MHz to 66.0 MHz
Frequency stability (-10°C to +70°C)	91SMO(3VJ) : ±100 ppm 91SMO(3VJK) : ±50 ppm 91SMO(3VJS) : ±30 ppm 91SMO(3VJSS) : ±25 ppm 91SMO(3VJSSS) : ±20 ppm	91SMO(3VL) : ±100 ppm 91SMO(3VLH) : ±50 ppm 91SMO(3VLS) : ±30 ppm 91SMO(3VLSS) : ±25 ppm 91SMO(3VLSSS) : ±20 ppm	91SMO(E) : ±100 ppm 91SMO(F) : ±50 ppm 91SMO(FS) : ±30 ppm 91SMO(FSS) : ±25 ppm 91SMO(FSSS) : ±20 ppm	91SMO(X) : ±100 ppm 91SMO(Y) : ±50 ppm 91SMO(YS) : ±30 ppm 91SMO(YSS) : ±25 ppm 91SMO(YSSS) : ±20 ppm
over all conditions				
Operating Conditions				
Operating temperature	-10°C to +70°C (standard) -40°C to +85°C (W) : ±50 ppm & ±100 ppm			
Input voltage (VDD)	+3.0V DC ±10% or +3.3V DC ±10%		+5V DC ±10%	
Tri-state control	VIH : 90%VDD min. VIL : 10%VDD max.		VIH : +2.2VDD min. VIL : +0.5VDD max.	
Absolute Max. Ratings				
Supply voltage	-0.5V to +7.0V DC			
Storage temperature	-55°C to +125°C			
Input current (Pin #1 = Open or VIH)	8 mA max. (1.8 MHz to 34 MHz) 12 mA max. (34 MHz to 50 MHz) 15 mA max. (50 MHz to 66 MHz) 45 mA max. (66 MHz to 165 MHz)	10 mA max.(1.8 to 30 MHz) 15 mA max.(30 to 50 MHz) 30 mA max.(50 to 66 MHz) 50 mA max.(66 to 80 MHz)	20 mA max.(1.8 to 20 MHz) 35 mA max.(20 to 50 MHz) 60 mA max.(50 to 66 MHz)	
Stand-by current	n.a. <sup>※3</sup>	15 µA max. <sup>※2</sup>	n.a. <sup>※3</sup>	
Output (-40°C to +85°C)				
Symmetry	40% to 60% at 50%VDD level			
Rise and fall times (10%VDD to 90%VDD level)	10 ns max.	3 ns max.	10 ns max.	
"0" level	VOL : 10%VDD max.			
"1" level	VOH : 90%VDD min.			
Load	15 pF max. (CMOS)		50 pF max. (CMOS)	
Disable delay time	150 ns max.		100 ns max.	
Enable delay time	150 ns max.	10 ms max.	100 ns 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. 91SMO(3.0VLH) 80.000 MHz.

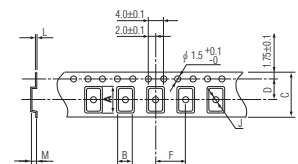
(※2) Internal crystal oscillation to be halted (Pin #1=VIL).

(※3) Stand-by (SB) function is available upon request.

## PACKAGE DATA

Item	Package	91SMO
Lid		Ceramic
Base		Ceramic
Sealing		Glass
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant

## TAPE SPECIFICATIONS



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
7.4	5.4	16.0	7.5	8.0	1.5	0.3	1.9	180	1000pcs