

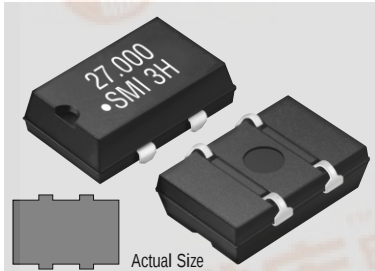
Crystal Clock Oscillators

SMI

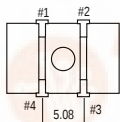
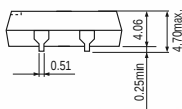
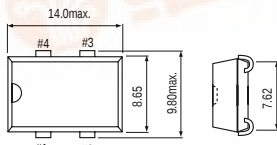
90SMO (+3.3V or +5.0V FIXED MODELS)

STANDARD SMD CLOCK OSCILLATORS

90SMO



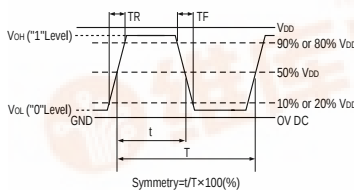
90SMO



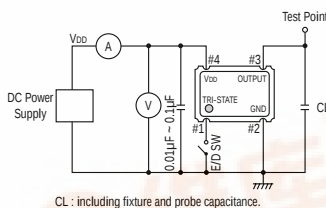
PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	VDD

Z: high impedance

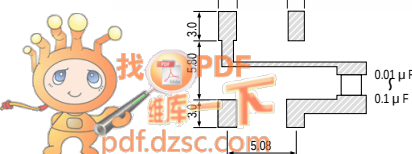
OUTPUT WAVEFORM



TEST CIRCUIT



SOLDERING PATTERN



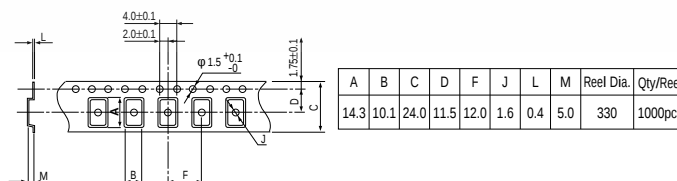
STANDARD SPECIFICATIONS

Item	Specifications	
Generic part number	90SMO	
Frequency range	1.500 MHz to 80.000 MHz	
Frequency stability (0°C to +70°C)	90SMO(3.3VC) ± 100 ppm 90SMO(3.3VD) ± 50 ppm over all conditions	90SMO(CE) ± 100 ppm 90SMO(CD) ± 50 ppm over all conditions
Operating Conditions	0°C to +70°C	
Operating temperature	+3.0V DC ± 0.3V	
Input voltage (VDD)	+5V DC ± 0.5V	
OE control voltage	VIH : +2.4VDD min. VIL : +0.2VDD max.	VIH : +3.5VDD min. VIL : +0.8VDD max.
Internal crystal	oscillation (Pin#1 = VIL)	
Absolute Max. Rating	-0.5V to +7.0V	
Supply voltage	-55°C to +125°C	
Storage temperature		
Input current (+25°C)	10 mA max. (1.5 MHz to 26.0 MHz) 25 mA max. (26.0 MHz to 40.0 MHz) 35 mA max. (40.0 MHz to 70.0 MHz) 45 mA max. (70.0 MHz to 80.0 MHz)	15 mA max. (1.5 MHz to 26.0 MHz) 35 mA max. (26.0 MHz to 50.0 MHz) 50 mA max. (50.0 MHz to 70.0 MHz) 60 mA max. (70.0 MHz to 80.0 MHz)
Output (0°C to +70°C)	40% to 60% at 50%VDD level	
Symmetry	6 ns max. (1.5 MHz to 36.0 MHz) 4 ns max. (36.0 MHz to 80.0 MHz) (20%VDD to 80%VDD level)	
Rise and fall times	12 ns max. (1.5 MHz to 26.0 MHz) 10 ns max. (26.0 MHz to 50.0 MHz) 6 ns max. (50.0 MHz to 80.0 MHz) (10%VDD to 90%VDD level)	
"0" level	VOL : 10%VDD max.	VOL : 0.4V max.
"1" level	VOH : 90%VDD max.	VOH : VDD - 0.4V min.
Load	30 pF max. (CMOS)	50 pF max. (1.5 MHz to 26.0 MHz) 30 pF max. (26.0 MHz to 50.0 MHz) 15 pF max. (50.0 MHz to 80.0 MHz)
Enable/Disable delay time	100 ns max.	
Startup time	10 ms max.	
Aging	± 5 ppm max. at +25°C ± 3°C for first year	
Reflow soldering condition	+ 240°C ± 5°C for 10 seconds + 150°C ± 10°C for 1 to 2 minutes (preheating)	

PACKAGE DATA

Item	Package	90SMO
Lid	Plastic	
Sealing	Press-fit (3 × 9mm built-in)	
Terminal lead frame	Copper	
Terminal plating	Solder	

TAPE SPECIFICATIONS



CLK OSC