

22SMOV (+1.8V, +2.5V, +2.8V or +3.3V FIXED MODELS) 2.5x2.0 mm

STANDARD SMD VCXO

XTAL

CLK OSC

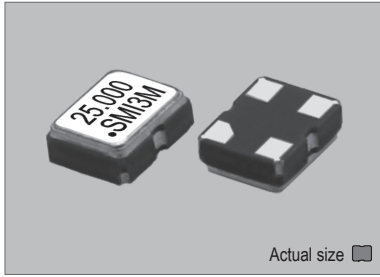
VCXO

TCXO

OCXO

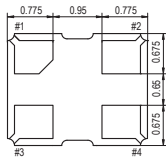
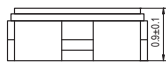
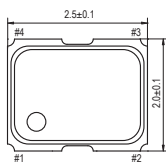
MCF

22SMOV



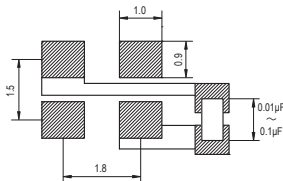
0.014 gm (wt.)

22SMOV

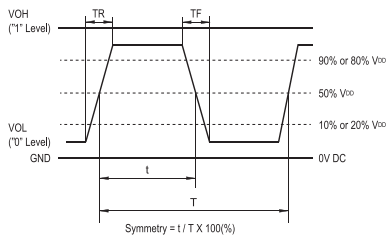


PIN	CONNECTION
1	Vcontrol
2	GND
3	OUTPUT
4	VDD

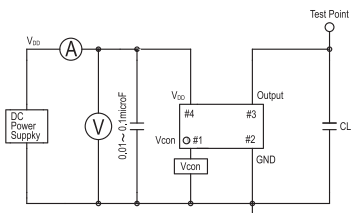
SOLDERING PATTERN



OUTPUT WAVEFORM



TEST CIRCUIT



CL: including fixture and probe capacitance.

STANDARD SPECIFICATIONS

- WIDE FREQUENCY RANGE
- CMOS OUTPUT
- PACKAGE SIZE 2.5x2.0 mm

Item		Specifications	
General part number		22SMOV*1	
Frequency range		1.300 MHz to 55.000 MHz	55.000 MHz to 100.000 MHz
Frequency stability (over all conditions)		22SMOV(B) : ±50 ppm over -20°C to +70°C 22SMOV(C) : ±30 ppm over -20°C to +70°C 22SMOV(D) : ±25 ppm over -20°C to +70°C 22SMOV(E) : ±20 ppm over -20°C to +70°C 22SMOV(BW) : ±50 ppm over -40°C to +85°C 22SMOV(CW) : ±30 ppm over -40°C to +85°C 22SMOV(DW) : ±25 ppm over -40°C to +85°C	
Vcon = 1/2 VDD			
Frequency pulling range	VDD = +1.8V Vcon = +0.9V ±0.9V	±120 ppm min.	n.a.
	VDD = +2.5V Vcon = +1.25V ±1.25V	±120 ppm min.	n.a.
	VDD = +2.8V Vcon = +1.4V ±1.4V	±130 ppm min.	±90 ppm
	VDD = +3.3V Vcon = +1.65V ±1.65V	±130 ppm min.	±90 ppm
Frequency change vs. input voltage		±2 ppm max. (VDD ±10%)	
Operating Conditions	Operating temperature	-20°C to +70°C (Standard) -40°C to +85°C (W = Option)	
	Supply voltage (VDD)	+1.8V (Max. 55 MHz), +2.5V, +2.8V DC ±5% or +3.3V DC ±10%	
	Control voltage (Vcon = Pin#1)	1/2 VDD ±1/2 VDD DC	
Absolute Max. Ratings	Supply voltage	-0.5V to +5.0V DC	
	Vcontrol voltage	-0.5V to VDD +0.5V DC	
	Storage temperature	-40°C to +100°C	
Input current (no load)	2 mA max. (VDD = +1.8V)		
	3 mA max. (VDD = +2.5V)	14 mA max. (VDD = +2.8V)	
	5 mA max. (VDD = +3.3V)	19 mA max. (VDD = +3.3V)	
Output (-40°C to +85°C)	Symmetry	45% to 55% at 1/2 VDD level	
	Rise and fall times (20% VDD to 80% VDD level)	6 ns max. (VDD = +1.8V)	n.a.
	"0" Level	VOL : 20% VDD max.	
	"1" Level	VOH : 80% VDD min.	
	Load	15 pF max. (CMOS)	
Start-up time		10 ms max.	
Frequency linearity		10 % max.	
Frequency slope		Positive	
Modulation bandwidth (-3 dB)		20 kHz, Typical (15 kHz min.)	
SSB phase noise (at VDD = +3.3V & 27.000 MHz)		-130 dBc / Hz, Typical at 1 kHz offset	
Vcon input impedance (Vcon - GND)		10 MΩ min.	5 MΩ min.
Aging		±5 ppm max. at +25°C ±3°C for first year +250°C ±10°C for 10 seconds +170°C ±10°C for 1 to 2 minutes (preheating)	
Reflow condition			

(*1) Final part number to be assigned with package type, input voltage, frequency stability, operating temperature and frequency. e.g. 22SMOV(3.3VB) 27.000MHz

PACKAGE DATA

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

TAPE SPECIFICATIONS

