

XTAL

CLK OSC

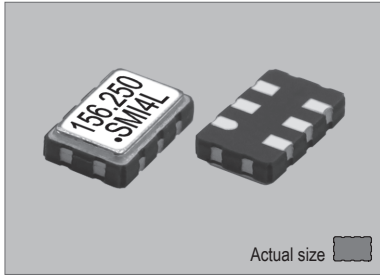
VCXO

TCXO

OCXO

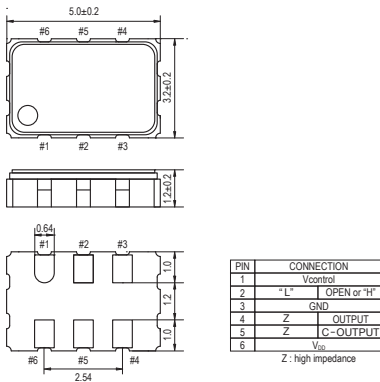
MCF

65SMOVH

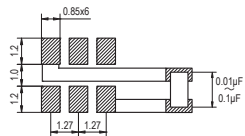


Actual size 0.051 gm (wt.)

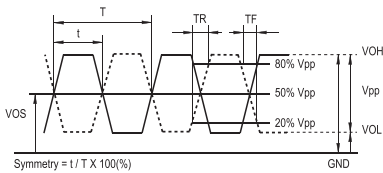
65SMOVH



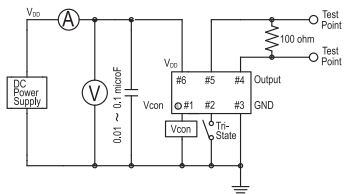
SOLDERING PATTERN



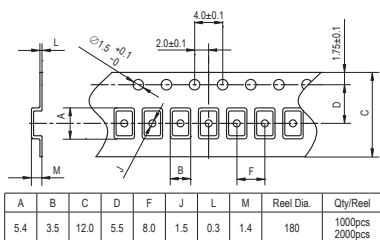
OUTPUT WAVEFORM



TEST CIRCUIT



TAPE SPECIFICATIONS



STANDARD SPECIFICATIONS

- LVDS VCXO
- WIDE FREQUENCY RANGE
- PACKAGE SIZE 5.0x3.2 mm

Item	Specifications	
General part number	65SMOVH*1	
Frequency range	30.000 MHz to 170.000 MHz	
Frequency stability (over all conditions)	65SMOVH(3.3VB) : ±50 ppm over -20°C to +70°C 65SMOVH(3.3VC) : ±30 ppm over -20°C to +70°C 65SMOVH(3.3VD) : ±25 ppm over -20°C to +70°C 65SMOVH(3.3VE) : ±20 ppm over -20°C to +70°C 65SMOVH(3.3VBW) : ±50 ppm over -40°C to +85°C 65SMOVH(3.3VCW) : ±30 ppm over -40°C to +85°C 65SMOVH(3.3VDW) : ±25 ppm over -40°C to +85°C Vcon = 1/2 VDD	
Frequency pulling range	VDD = +3.3V Vcon = +1.65V ±1.65V ±80 ppm min.	
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)	+2.5V DC ±10%      +3.3V DC ±10%
	Control voltage (Vcon = Pin#1)	+1.25V ±1.25V DC      +1.65V ±1.65V DC
	Stand-by control voltage (Pin#2)	VH : 70% VDD min. VL : 30% VDD max.*2
Absolute Max. Ratings	Supply voltage	-0.3V to +5.0V DC
	Vcontrol voltage	-0.3V to VDD +0.3V DC
	Storage temperature	-40°C to +100°C
Input current (Pin#2 = Open or VH)	40 mA max.	
Stand-by current (Pin#2 = "L")	7 mA max.	
Output (-40°C to +85°C)	Symmetry	45% to 55% at crossing point
	Rise and fall times (20% to 80% of amplitude)	0.7 ns max.
	"0" Level	VOL : +1.1V, Typical (+0.9V min.)
	"1" Level	VOH : +1.43V, Typical (+1.6V max.)
Load	100 Ω (OUT - OUTN)	
Start-up time	10 ms max.	
Frequency linearity	10 % max.	
Frequency slope	Positive	
Modulation bandwidth (-3 dB)	20 kHz min.	
SSB phase noise (at VDD = +3.3V & 122.880 MHz)	-128 dBc / Hz, Typical at 1 kHz offset	
RMS jitter (12 kHz to 20.000 MHz band)	0.3 ps max. (90 fs, Typical at 122.880 MHz)	
Disable delay time	200 ns max.	
Enable delay time	20 ms max.	
Vcon input impedance (Vcon - GND)	10 MΩ min.	
Differential output voltage	+0.35V, Typical	
Offset voltage	+1.25V, Typical	
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 part number to be assigned with package type, input voltage, frequency stability, operating temperature and frequency. e.g. 65SMOVH(3.3VE) 160.000 MHz

(\*2) Internal crystal oscillation to be halted (Pin#2 = VL).

PACKAGE DATA

Item	Package	65SMOVH
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)