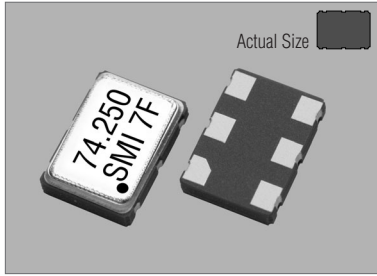


# Voltage Controlled Crystal Oscillators

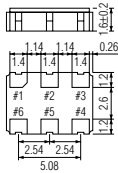
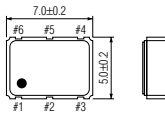
97SMOVH (+3.3V or +5V MODELS)

STANDARD SMD VCXO

## 97SMOVH



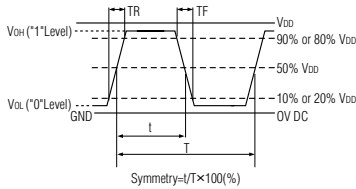
## 97SMOVH



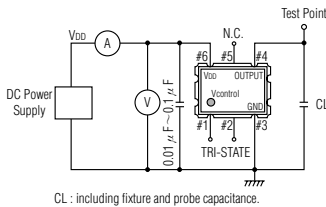
PIN	CONNECTION
1	Vcontrol
2	"L" OPEN or "H"
3	GND
4	Z OUTPUT
5	N.C.
6	Vcc

Z: high impedance

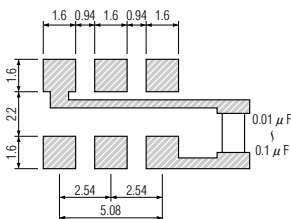
## OUTPUT WAVEFORM



## TEST CIRCUIT



## SOLDERING PATTERN



## STANDARD SPECIFICATIONS

Item	Specifications	
	97SMOVH(3.3V)	97SMOVH(5V)
Generic part number	97SMOVH(3.3V)	97SMOVH(5V)
Frequency range	2.000 MHz to 80.000 MHz	
Frequency stability (-10°C to +70°C)	97SMOVH(3.3VA) : ±50 ppm 97SMOVH(3.3VB) : ±30 ppm 97SMOVH(3.3VC) : ±25 ppm	97SMOVH(5VA) : ±50 ppm 97SMOVH(5VB) : ±30 ppm 97SMOVH(5VC) : ±25 ppm
over all conditions	Vcon = +1.65V	Vcon = +2.5V
Frequency pulling range	±90ppm* <sup>1</sup> min. (Vcon = +1.65V ±1.5V)	±100ppm min. (Vcon = +2.5V ±2.0V)
Frequency change vs. input voltage	±5.0ppm max. (VDD = +3.3V DC ±5%)	±5.0ppm max. (VDD = +5V DC ±10%)
Operating Conditions	-10°C to +70°C	
Operating temperature	-10°C to +70°C	
Input voltage (VDD)	+3.3V DC ±5%	+5V DC ±5%
Control voltage (Vcon = Pin#1)	+1.65V DC ±1.5V	+2.5V DC ±2.0V
Stand-by control voltage (Pin#2)	V <sub>IH</sub> : +2.8VDD min. V <sub>IL</sub> : +0.5VDD max.	V <sub>IH</sub> : +4.5VDD min. V <sub>IL</sub> : +0.5VDD max.
Absolute Max. Ratings	-40°C to +85°C	
Supply voltage	-0.3V to +5.5V DC	-0.3V to +7.0V DC
Storage temperature	-40°C to +85°C	
Input current (+25°C)	25 mA max.	30 mA max.
Stand-by current (Pin#1 = V <sub>IL</sub> )	10 μA max.* <sup>2</sup>	
Output (-10°C to +70°C)	40% to 60% at 50%VDD level 10 ns max. (2.0 MHz to 10.0 MHz) 6 ns max. (10.0 MHz to 80.0 MHz)	
Symmetry	VOL : 10%VDD max. VOH : 90%VDD min.	
Rise and fall times (10%VDD to 90%VDD level)	15 pF max. (CMOS)	
"0" level		
"1" level		
Load		
Disable delay time	100 ns max.	
Enable delay time	10 ms max.	
Startup time	10 ms max.	
Frequency linearity	10% max.	
Frequency slope	Positive	
SSB phase noise	-120 dBc/Hz max. at 1kHz offset	
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)	

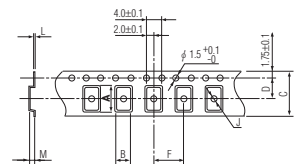
(※1) Frequency pulling range of ±100 ppm min. is available upon request.

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

## PACKAGE DATA

Item	Package	97SMOVH
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
7.5	5.5	16.0	7.5	8.0	2.0	0.3	2.2	200	1000pcs 2000pcs