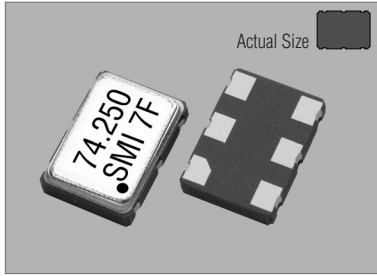


# Voltage Controlled Crystal Oscillators

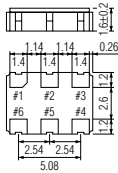
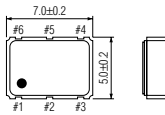
97SMOVH (+3.3V or +5V MODELS)

STANDARD SMD VCXO

## 97SMOVH



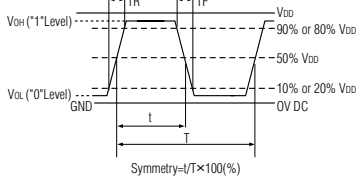
## 97SMOVH



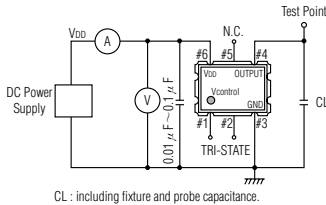
PIN	CONNECTION
1	Vcontrol
2	"L" OPEN or "H"
3	GND
4	Z OUTPUT
5	N.C.
6	Vcc

Z: high impedance

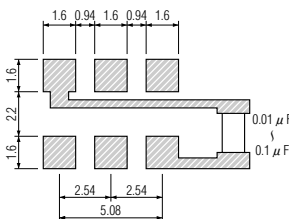
## OUTPUT WAVEFORM



## 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	40% to 60% at 50%VDD level	
Rise and fall times (10%VDD to 90%VDD level)	10 ns max. (2.0 MHz to 10.0 MHz) 6 ns max. (10.0 MHz to 80.0 MHz)	
"0" level	V <sub>OL</sub> : 10%VDD max.	
"1" level	V <sub>OH</sub> : 90%VDD min.	
Load	15 pF max. (CMOS)	
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)	

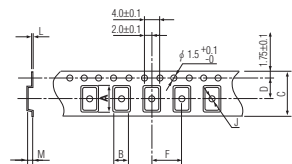
(※1) Frequency pulling range of ±100 ppm min. is available upon request.

(※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	200 254	1000pcs 2000pcs