

99SMOVF (+3.3V FIXED MODELS) 5.0x3.2 mm

STANDARD SMD VCXO

XTAL

CLK OSC

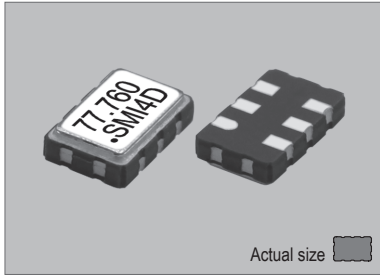
VCXO

TCXO

OCXO

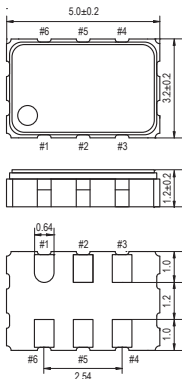
MCF

99SMOVF



Actual size 0.058 gm (wt.)

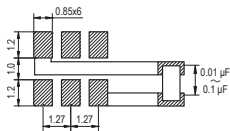
99SMOVF



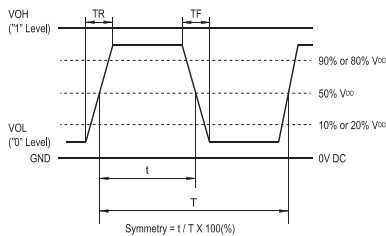
PIN	CONNECTION
1	V _{control}
2	"L" OPEN or "H"
3	GND
4	Z OUTPUT
5	N.C.
6	V _{cc}

Z: high impedance

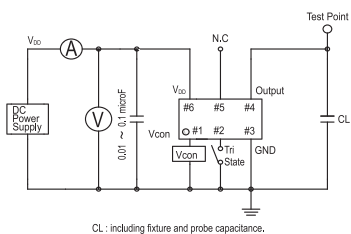
SOLDERING PATTERN



OUTPUT WAVEFORM



TEST CIRCUIT



STANDARD SPECIFICATIONS

- CMOS OUTPUT
- WIDE FREQUENCY RANGE
- PACKAGE SIZE 5.0x3.2 mm

Item	Specifications		
General part number	99SMOVF*1		
Frequency range	1.000 MHz to 62.000 MHz	62.000 MHz to 170.000 MHz	
Frequency stability (over all conditions)	99SMOVF(3.3VB) : ±50 ppm over -20°C to +70°C 99SMOVF(3.3VC) : ±30 ppm over -20°C to +70°C 99SMOVF(3.3VD) : ±25 ppm over -20°C to +70°C 99SMOVF(3.3VE) : ±20 ppm over -20°C to +70°C 99SMOVF(3.3VBW) : ±50 ppm over -40°C to +85°C 99SMOVF(3.3VCW) : ±30 ppm over -40°C to +85°C 99SMOVF(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	±110 ppm min. ±90 ppm min.	
Frequency change vs. input voltage	±2 ppm max. (VDD ±5%) ±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)	+3.3V DC ±10%	
	Control voltage (Vcon = Pin#1)	1/2 VDD ±1/2 VDD DC +1.65V ±1.65V DC	
	Stand-by control voltage (Pin#2)	V _H : 70% VDD min. V _L : 30% VDD max.*2	
Absolute Max. Ratings	Supply voltage	-0.3V to +5.0V DC	
	Vcontrol voltage	-0.3 to VDD +0.3V DC	
	Storage temperature	-40°C to +100°C	
Input current (no load)	5 mA max.	25 mA max.	
Stand-by current (Pin#2 = "L")	10 μA max.		
Output (-40°C to +85°C)	Symmetry	45% to 55% at 1/2 VDD level	
	Rise and fall times (10% VDD to 90% VDD level)	6 ns max. (1.000 MHz to 40.000 MHz) 5 ns max. (40.000 MHz to 62.000 MHz)	4 ns max. (62.000 MHz to 100.000 MHz) 2.4 ns max. (100.000 MHz to 170.000 MHz)
	"0" Level	VOL : 10% VDD max.	
	"1" Level	VOH : 90% VDD min.	
	Load	15 pF max. (CMOS)	
Start-up time	10 ms max.		
Frequency linearity	10 % max.		
Frequency slope	Positive		
Modulation bandwidth (-3 dB)	15 kHz min. (25 kHz, Typical)	20 kHz min. (40 kHz, Typical)	
SSB phase noise (at VDD = +3.3V)	-135 dBc / Hz, Typical at 1 kHz offset (40.000MHz) -160 dBc / Hz, Typical at 10 MHz offset (40.000MHz)	-125 dBc / Hz, Typical at 1 kHz offset (155.520 MHz) -158 dBc / Hz, Typical at 10 MHz offset (155.520 MHz)	
Disable delay time	200 ns max.		
Enable delay time	2 ms max.		
Vcon input impedance (Vcon - GND)	10 MΩ min.		
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. 99SMOVF(3.3VCW) 74.250 MHz
(*2) Internal crystal oscillation to be halted. (Pin#2 = V_{IL})

PACKAGE DATA

Item	Package	99SMOVF
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)

TAPE SPECIFICATIONS

