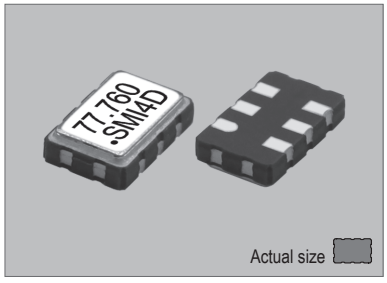
99SMOVF (+3.3V FIXED MODELS) 5.0x3.2 mm

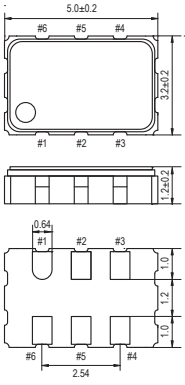
STANDARD SMD VCXO

99SMOVF



0.058 gm (wt.)

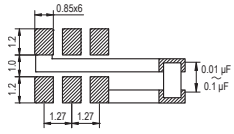
99SMOVF



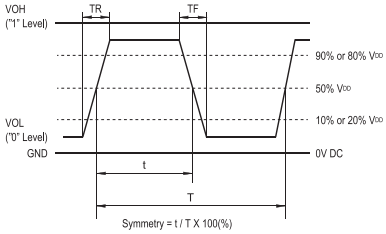
PIN	CONNECTION	
1	Vcontrol	
2	"L"	OPEN or "H"
3	GND	
4	Z	OUTPUT
5	N.C.	
6	V_{DD}	

Z : high impedance

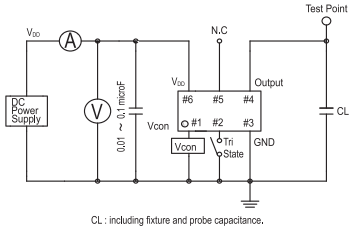
SOLDERING PATTERN



OUTPUT WAVEFORM



TEST CIRCUIT



CL : including fixture and probe capacitance.

STANDARD SPECIFICATIONS

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

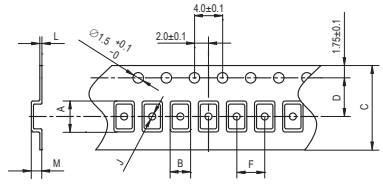
Item		Specifications	
General part number		99SMOVF*[1]	
Frequency range		1.000 MHz to 62.000 MHz	62.000 MHz to 170.000 MHz
Frequency stability (over all conditions)		99SMOVF(3.3VB) : ±50 ppm over −20°C to +70°C 99SMOVF(3.3VC) : ±30 ppm over −20°C to +70°C 99SMOVF(3.3VD) : ±25 ppm over −20°C to +70°C 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 V_{DD}	
Frequency pulling range	V_{DD} = +3.3V Vcon = +1.65V ±1.65V	±110 ppm min.	±90 ppm min.
Frequency change vs. input voltage		±2 ppm max. (V_{DD} ±5%)	±2 ppm max. (V_{DD} ±10%)
Operating Conditions	Operating temperature	−20°C to +70°C (Standard) −40°C to +85°C (W = Option)	
	Supply voltage (V_{DD})	+3.3V DC ±10%	
	Control voltage (Vcon = Pin#1)	1/2 V_{DD} ±1/2 V_{DD} DC	+1.65V ±1.65V DC
	Stand-by control voltage (Pin#2)	V_{IH} : 70% V_{DD} min. V_{IL} : 30% V_{DD} max.*[2]	
Absolute Max. Ratings	Supply voltage	−0.3V to +5.0V DC	
	Vcontrol voltage	−0.3 to V_{DD} +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 V_{DD} level	
	Rise and fall times (10% V_{DD} to 90% V_{DD} 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	V_{OL} : 10% V_{DD} max.	
	"1" Level	V_{OH} : 90% V_{DD} 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 V_{DD} = +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



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.4	3.5	12.0	5.5	8.0	1.5	0.3	1.4	180	1000pcs