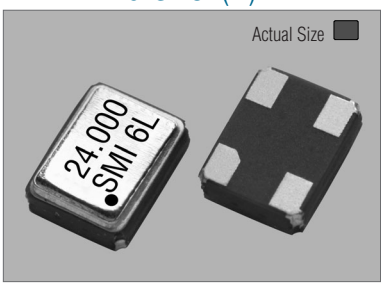
Voltage Controlled Crystal Oscillators

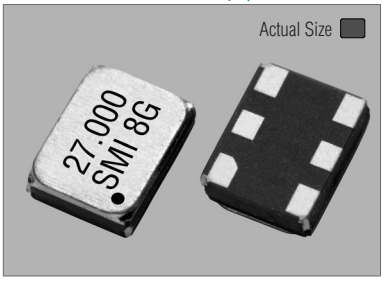
32SMOV (+3.3V MODELS) — STANDARD SMD VCXO

VCXO

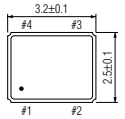
32SMOV(M)



32SMOV(S)

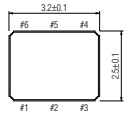


32SMOV(M)



PIN	CONNECTION
1	Vcontrol
2	GND
3	OUTPUT
4	VDD

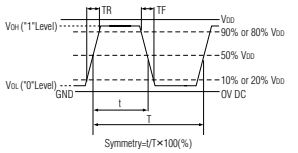
32SMOV(S)



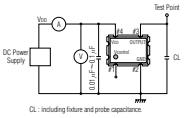
PIN	CONNECTION	
1	Vcontrol	
2	"L"	OPEN or "H"
3	GND	
4	Z	OUTPUT
5	N.C.	
6	VDD	

Z : high impedance

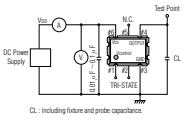
OUTPUT WAVEFORM



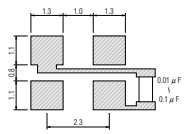
TEST CIRCUIT for 32SMOV(M)



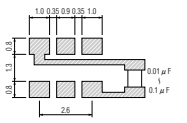
TEST CIRCUIT for 32SMOV(S)



SOLDERING PATTERN for 32SMOV(M)



SOLDERING PATTERN for 32SMOV(S)



STANDARD SPECIFICATIONS

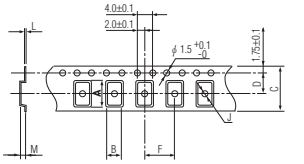
Item	Specifications
Generic part number	32SMOV※1
Frequency range	2.000 MHz to 54.000 MHz
Frequency stability (−10°C to +70°C) over all conditions	32SMOV(A) : ±50 ppm 32SMOV(B) : ±30 ppm Vcon = 1/2VDD
Frequency pulling range	±80ppm min. at Vcon = +0.9V ±0.9V(VDD = +1.8V DC) ±90ppm min. at Vcon = +1.4V ±1.4V(VDD = +2.8V DC) ±90ppm min. at Vcon = +1.65V ±1.65V(VDD = +3.3V DC)
Frequency change vs. input voltage	±5.0ppm max. (VDD ±5%)
Operating Conditions Operating temperature Input voltage (VDD) Control voltage (Vcon = Pin#1)	 −10°C to +70°C +1.8V DC ±5%, ±2.8V DC ±5% or +3.3V DC ±10%. +0.9V ±0.9V DC (VDD = +1.8V). +1.4V ±1.4V DC (VDD = +2.8V), +1.65V ±1.65V DC (VDD = +3.3V)
Absolute Max. Ratings Supply voltage Storage temperature	 −0.5V to +7.0V DC −40°C to +85°C
Input current (no load)	3 mA max (VDD = +1.8V), 5 mA max (VDD = +2.8V), 8 mA max (VDD = +3.3V)
Output (−10°C to +70°C) Symmetry Rise and fall times (20%VDD to 80%VDD level) "0" level "1" level Load	 40% to 60% at 50%VDD level 10 ns max. (2.0 MHz to 10.0 MHz) 6 ns max. (10.0 MHz to 54.0 MHz) VOL : 10%VDD max. VOH : 90%VDD min. 15 pF max. (CMOS)
Startup time	10 ms max.
Frequency linearity	15% max.
Frequency slope	Positive
Modulation bandwidth	10 kHz min. (−3dB)
SSB phase noise	−120 dBc/Hz max. at 1kHz offset
Vcon input impedance (Vcon−GND)	100kΩ 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)
Standard frequency	27.000 MHz

(※1) Final exact part number to be determined with package type, frequency, frequency stability and input voltage.
e.g. 32SMOVM(3.3VA) 27.000 MHz.

PACKAGE DATA

Item \ Package	32SMOV
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
3.5	2.8	8.0	3.5	4.0	1.0	0.3	1.4	178	1000pcs