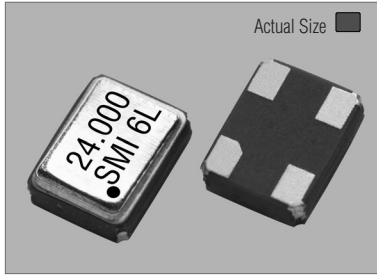


# Voltage Controlled Crystal Oscillators

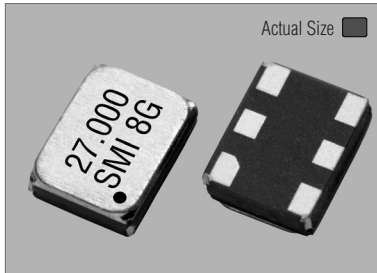
32SMOV (+3.3V MODELS)

STANDARD SMD VCXO

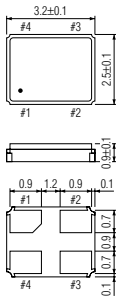
## 32SMOV(M)



## 32SMOV(S)

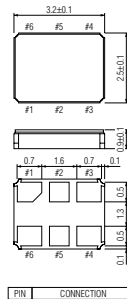


### 32SMOV(M)



PIN	CONNECTION
1	Vcontrol
2	GND
3	OUTPUT
4	VDD

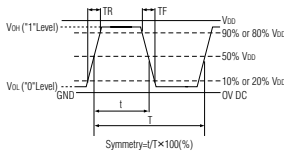
### 32SMOV(S)



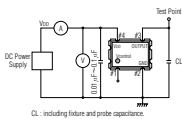
PIN	CONNECTION
1	Vcontrol
2	"L" OPEN or "H"
3	GND
4	Z
5	OUTPUT
6	VDD

Z: high impedance

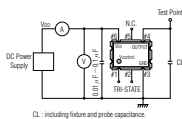
## OUTPUT WAVEFORM



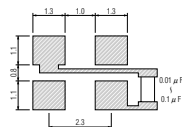
## TEST CIRCUIT for 32SMOV(M)



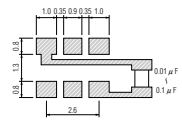
## TEST CIRCUIT for 32SMOV(S)



## SOLDERING PATTERN for 32SMOV(M)



## SOLDERING PATTERN for 32SMOV(S)



## STANDARD SPECIFICATIONS

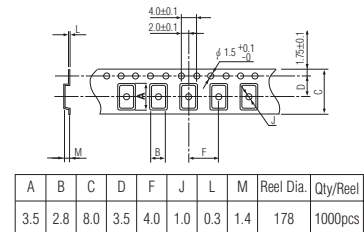
Item	Specifications
Generic part number	32SMOV#1
Frequency range	2.000 MHz to 54.000 MHz
Frequency stability (-10°C to +70°C) over all conditions	32SMOV(A) : ±50 ppm 32SMOV(B) : ±30 ppm Vcon = 1/2VDD
Frequency pulling range	±80ppm min. at Vcon = +0.9V ±0.9V(VDD = +1.8V DC) ±90ppm min. at Vcon = +1.4V ±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	-10°C to +70°C
Input voltage (VDD)	+1.8V DC ±5%, ±2.8V DC ±5% or +3.3V DC ±10%.
Control voltage (Vcon = Pin#1)	+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	-0.5V to +7.0V DC
Storage temperature	-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	40% to 60% at 50%VDD level
Rise and fall times (20%VDD to 80%VDD level)	10 ns max. (2.0 MHz to 10.0 MHz) 6 ns max. (10.0 MHz to 54.0 MHz)
"0" level	VOL : 10%VDD max.
"1" level	VOH : 90%VDD min.
Load	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. 32SMOV3(3.3VA) 27.000 MHz.

## PACKAGE DATA

Item	Package	32SMOV
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metallized)
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