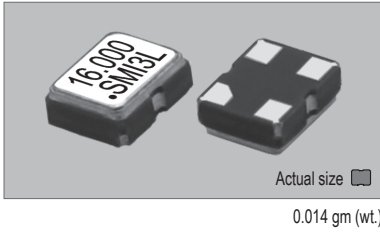
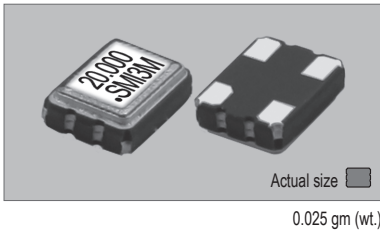


22SMOLC & 32SMOLC (+0.8V, +1.2V, +1.5V or +1.8V FIXED MODELS) 2.5x2.0 mm 3.2x2.5 mm STANDARD SMD CLOCK OSCILLATORS

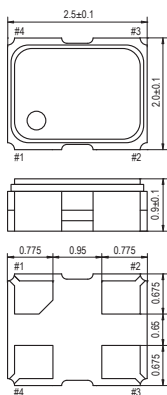
22SMOLC



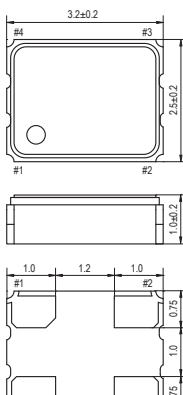
32SMOLC



22SMOLC



32SMOLC



PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z
4	V_{DD} OUTPUT

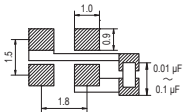
Z: High impedance

PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z
4	V_{DD} OUTPUT

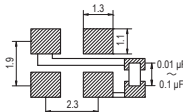
Z: High impedance

SOLDERING PATTERN

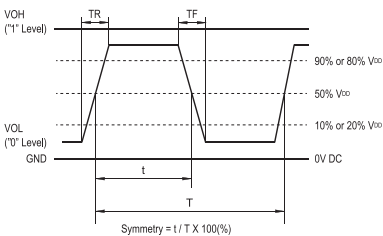
22SMOLC



32SMOLC



OUTPUT WAVEFORM



STANDARD SPECIFICATIONS

- CMOS OUTPUT
- LOW VOLTAGE OPERATION
- LOW POWER CONSUMPTION
- PACKAGE SIZE 2.5x2.0 mm & 3.2x2.5 mm

Item		Specifications	
General part number		22SMOLC* ¹	32SMOLC* ¹
Frequency range		1.250 MHz to 50.000 MHz	
Frequency stability (over all conditions)		22SMOLC(A) & 32SMOLC(A) : ±100 ppm over -20°C to +70°C 22SMOLC(B) & 32SMOLC(B) : ±50 ppm over -20°C to +70°C 22SMOLC(C) & 32SMOLC(C) : ±30 ppm over -20°C to +70°C 22SMOLC(D) & 32SMOLC(D) : ±25 ppm over -20°C to +70°C 22SMOLC(E) & 32SMOLC(E) : ±20 ppm over -20°C to +70°C 22SMOLC(AW) & 32SMOLC(AW) : ±100 ppm over -40°C to +85°C 22SMOLC(BW) & 32SMOLC(BW) : ±50 ppm over -40°C to +85°C 22SMOLC(CW) & 32SMOLC(CW) : ±30 ppm over -40°C to +85°C 22SMOLC(DW) & 32SMOLC(DW) : ±25 ppm over -40°C to +85°C	
Operating Conditions	Operating temperature	-20°C to +70°C (Standard) -40°C to +85°C (W = Option)	
	Supply voltage (V_{DD})	+0.8V, +1.2V, +1.5V or +1.8V DC ±5%	
	Stand-by control voltage (Pin#1)	V_{IH} : 70% V_{DD} min. V_{IL} : 30% V_{DD} max.* ²	
Absolute Max. Ratings	Supply voltage	-0.5V to +4.0V DC	
	Storage temperature	-55°C to +100°C	
Input current (no load) (Pin#1 = Open or V_{IH})		1.4 mA max. ($V_{DD} = +0.8V$) 2 mA max. ($V_{DD} = +1.2V$) 3 mA max. ($V_{DD} = +1.5V$ & +1.8V)	
Stand-by current* ²		100 μ A max. (Pin#1 = V_{IL})	
Output (-40°C to +85°C)	Symmetry	45% to 55% at 1/2 V_{DD} level	
	Rise and fall times	4 ns max. (20% V_{DD} to 80% V_{DD} level)	
	"0" Level	V_{OL} : 20% V_{DD} max.	
	"1" Level	V_{OH} : 80% V_{DD} min.	
Load		15 pF max. (CMOS)	
Disable delay time		50 μ s max.	
Enable delay time		10 ms max.	
Start-up time		10 ms max.	
Aging		±5 ppm max. at +25°C ±3°C for first year.	
SSB phase noise (at $V_{DD} = +1.2V$ & 48.000 MHz)		-130 dBc / Hz, Typical at 1 kHz offset	
Reflow condition		+250°C ±10°C for 10 seconds +170°C ±10°C for 1 to 2 minutes (preheating)	

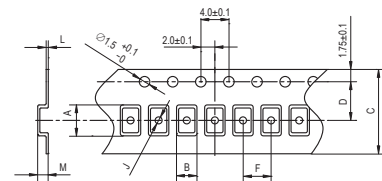
(*¹) Final part number to be assigned with package type, input voltage, frequency stability, operating temperature and frequency. e.g. 22SMOLC(1.2VD) 27.000MHz

(*²) Internal crystal oscillation to be halted (Pin#1 = V_{IL})

PACKAGE DATA

Item	Package	22SMOLC & 32SMOLC
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)

TAPE SPECIFICATIONS



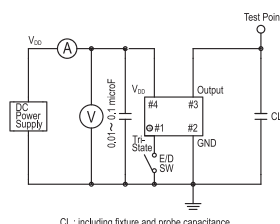
22SMOLC

A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.7	2.3	8.0	3.5	4.0	1.1	0.25	1.1	180	1000pcs 2000pcs 3000pcs

32SMOLC

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	180	1000pcs 2000pcs

TEST CIRCUIT



CL: including fixture and probe capacitance.