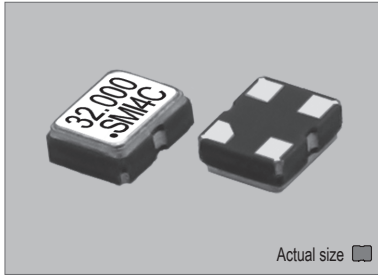
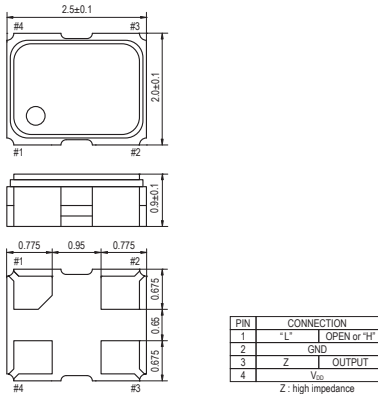
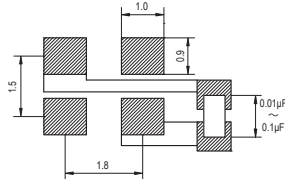
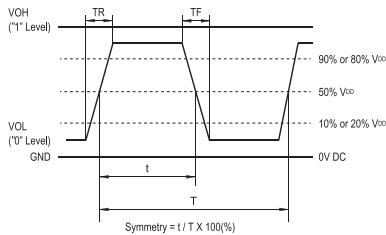
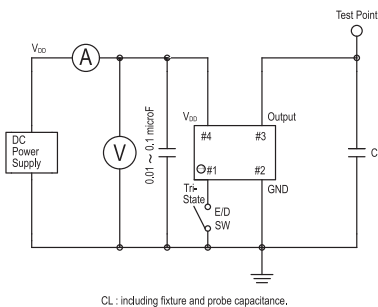


22SMOHG (+1.8V, +2.5V, +3.0V or +3.3V HIGH STABILITY FIXED MODELS) 2.5x2.0 mm

STANDARD SMD CLOCK OSCILLATORS

22SMOHGActual size
0.014 gm (wt.)**22SMOHG****SOLDERING PATTERN****OUTPUT WAVEFORM****TEST CIRCUIT****STANDARD SPECIFICATIONS**

● HIGH STABILITY CMOS OUTPUT
● PACKAGE SIZE 2.5x2.0 mm

Item		Specifications
General part number		22SMOHG ^{*1}
Frequency range		4.000 MHz to 55.000 MHz
Standard frequencies (MHz)		5.000, 10.000, 12.000, 16.000, 20.000, 24.000, 32.000, 40.000, 44.000
Frequency stability ^{*2} (over all conditions)		22SMOHG(F) : ±15 ppm over -40°C to +85°C 22SMOHG(G) : ±10 ppm over -40°C to +85°C 22SMOHG(H) : ±8 ppm over -40°C to +85°C
Operating Conditions	Operating temperature	-40°C to +85°C (Standard)
	Supply voltage (V _{DD})	+1.8V, +2.5V, +3.0V or +3.3V DC ±10%
	Stand-by control voltage (Pin#1)	V _{IH} : 70% V _{DD} min. V _{IL} : 30% V _{DD} max. ^{*3}
Absolute Max. Ratings	Supply voltage	-0.3V to +4.0V DC
	Storage temperature	-40°C to +85°C
Input current (Pin#1 = Open or V _{IH})		6 mA max. (no load)
Stand-by current ^{*3}		10 µA 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	5 ns max. (10% V _{DD} to 90% V _{DD} level)
	"0" Level	V _{OL} : 10% V _{DD} max.
	"1" Level	V _{OH} : 90% V _{DD} min.
Load		15 pF max. (CMOS)
Disable delay time		100 ns max.
Enable delay time		10 ms max.
Start-up time		10 ms max.
SSB phase noise (at V _{DD} = +2.5V & 48.000 MHz)		-135 dBc / Hz, Typical at 1 kHz offset -159 dBc / Hz, Typical at 1 MHz offset
RMS jitter (12 kHz to 20.000 MHz band)		181 fs, Typical (at V _{DD} = +2.5V & 48.000 MHz)
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. 22SMOHG(3.0V) 20.000MHz

(^{*2}) The frequency stability is inclusive of frequency tolerance (+25°C), temperature stability (-40°C to +85°C), input voltage change, load change, reflow frequency shift and aging (1st year at +25°C).

(^{*3}) Internal crystal oscillation to be halted (Pin#1 = V_{IL})

PACKAGE DATA

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

TAPE SPECIFICATIONS