

22SMO-LVP (+2.5V or +3.3V FIXED LVPECL MODELS) 2.5x2.0 mm

STANDARD SMD CLOCK OSCILLATORS

XTAL

CLK OSC

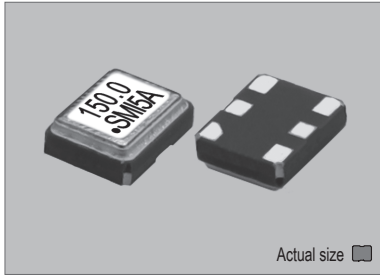
VCXO

TCXO

OCXO

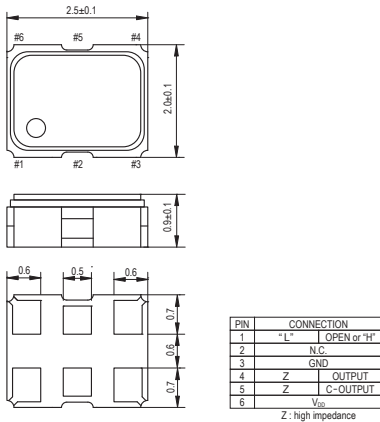
MCF

22SMO-LVP

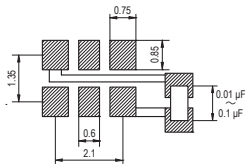


0.015 gm (wt.)

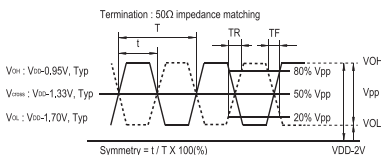
22SMO-LVP



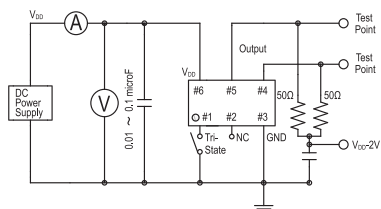
SOLDERING PATTERN



OUTPUT WAVEFORM



TEST CIRCUIT



STANDARD SPECIFICATIONS

● LVPECL OUTPUT
● PACKAGE SIZE 2.5x2.0 mm

Item	Specifications	
General part number	22SMO-LVP*1	
Frequency range	6.000 MHz to 175.000 MHz	
Frequency stability (over all conditions)	22SMO-LVP(A) : ±100 ppm over -20°C to +70°C 22SMO-LVP(B) : ±50 ppm over -20°C to +70°C 22SMO-LVP(C) : ±30 ppm over -20°C to +70°C 22SMO-LVP(D) : ±25 ppm over -20°C to +70°C 22SMO-LVP(E) : ±20 ppm over -20°C to +70°C 22SMO-LVP(AW) : ±100 ppm over -40°C to +85°C 22SMO-LVP(BW) : ±50 ppm over -40°C to +85°C 22SMO-LVP(CW) : ±30 ppm over -40°C to +85°C 22SMO-LVP(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})	+2.5V DC ±5% +3.3V 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	-0.3V to +4.0V DC
	Storage temperature	-50°C to +125°C
Input current (Pin#1 = Open or V _{IH})	45 mA, Typical. (70 mA max.)	
Stand-by current*2 (Pin#1 = V _{IL})	15 µA max.	
Output (-40°C to +85°C)	Symmetry	45% to 55% at crossing point
	Rise and fall times (20% to 80% of amplitude)	0.25 ns, Typical / 0.5 ns max.
	"0" Level	V _{OL} : V _{DD} - 1.810V to V _{DD} - 1.620V
	"1" Level	V _{OH} : V _{DD} - 1.025V to V _{DD} - 0.88V
Load	50 Ω into V _{DD} -2V	
Start-up time	10 ms max.	
SSB phase noise (at V _{DD} = +3.3V & 155.520 MHz)	-153 dBc / Hz, Typical at 100 kHz offset	
RMS jitter (12 kHz to 20.000 MHz band)	0.5 ps max.	
Disable delay time	200 ns max.	
Enable delay time	4 ms max.	
Aging	±5 ppm max. at +25°C ±3°C for first year	
Reflow condition	+250°C ±10°C for 10 seconds +175°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. 22SMO-LVP(3.3VDW) 156.250MHz
(*2) Internal crystal oscillation to be halted (Pin#1 = V_{IL})

PACKAGE DATA

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

TAPE SPECIFICATIONS

