M627x Series Stratum 3
3.2x5.0 mm, TCXO/TCVCXO

FEATURES

- Stratum 3 performance with 0.34 ppm (pk-pk) holdover stability over (-40°C to +85°C)
- 3.0 V and 3.3 V Options
- Available in 4/5 pad and 10 pad configurations
- Low phase noise performance

APPLICATIONS

- Synchronous Ethernet Clocks ITU-T G.8262 EEC Options 1 & 2
- Stratum 3 GR-1244-Core & GR-253-Core
- Telecom / Datacom
- Industrial Controls
- Communications & Navigation

ORDERING INFORMATION

M627x	2	S	T	C	N	00.0000 MHz

Product Series
M6271 = 3.3 V
M6272 = 3.0 V

Temperature Range
1: 0°C to +70°C
2: -40°C to +85°C
6: -20°C to +70°C
8: 0°C to +50°C
F: -30°C to +75°C

Stability
S: ± 4.6 ppm with Holdover

Output Type
T: Voltage Control With Tristate (VCTCXO)
F: No Voltage Control With Tristate (TCXO)

Output Waveform
C: CMOS
S: Clipped Sine Wave

Output Waveform
N: 10 Pad Leadless Ceramic
T: 4/5 Pad Leadless Ceramic

Frequency (Customer Specified)

Example Part Number: M62712STCN 10.0000 MHz

http://www.mtronpti.com 407-298-2000 MtronPTI 2525 Shader Road Orlando, FL 32804

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F_0	8		38.88	MHz	Contact factory above 38.88 MHz
Initial Accuracy		-1.0		+1.0	ppm	@ +25°C at time of shipment
Frequency Stabilities						
vs. Temperature	$\Delta F/F$			0.3	ppm	T_A = -40 °C to +85 °C (includes Hysteresis) Ref GR1244CORE
vs. Drift				40	ppb	After 24 hours at constant temperature.
vs. Free-Run Accuracy		-4.6		+4.6	ppm	Includes initial calibration @ +25 °C, deviation over temperature, supply voltage and load variations, reflow, hysteresis, and 20-year aging.
vs. Supply Voltage			±0.02	±0.1	ppm	±5 % change in voltage
vs. Load			±0.02	±0.1	ppm	±5 % change in load
RF Output						
Output Logic Level (CMOS)	V_{OL} V_{OH}	 90		10	%V_{CC} %V_{CC}	I_{OL} = +4mA, Vcc = +3.0 V I_{OH} = -4mA, Vcc = +3.0 V
Output Logic Level (Clipped Sinewave)		0.8	0.9		V_{pk-pk}	
Waveform Symmetry (duty cycle)	T_{DC}	40	50	60	%	@ 50% of waveform (CMOS)
Rise/Fall Time	T_R/T_F			6.5	ns	10% to 90% Vcc
Output Load			15 10/10		pF kΩ/pF	CMOS [1] Clipped Sinewave Output [1]
Tristate Function		80 or Open			%V_{CC}	Output Enabled
				20	%V_{CC}	Output Disabled: to HIGH Impedance (Z)
Tristate Input Current		-100		+10	µA	
Start-up Time	T_{SU}			10	Ms	
Frequency Adjustment						
Control Voltage Range	Vc	0.3 0.3		2.7 3.0	V V	@ 3.0 V supply @ 3.3 V supply
Tuning Range		±9.2			ppm	VCTCXO only [2]
Linearity				5	%	
Modulation Bandwidth		2			kHz	
Input Resistance		100			kΩ	
Phase Noise						
SSB Phase Noise (measured @ 26 MHz)			-98		dBc/Hz	@ 10Hz Offset
			-127		dBc/Hz	@ 100Hz Offset
			-148		dBc/Hz	@ 1kHz Offset
			-156		dBc/Hz	@ 10kHz Offset

http://www.mtronpti.com 407-298-2000 MtronPTI 2525 Shader Road Orlando, FL 32804

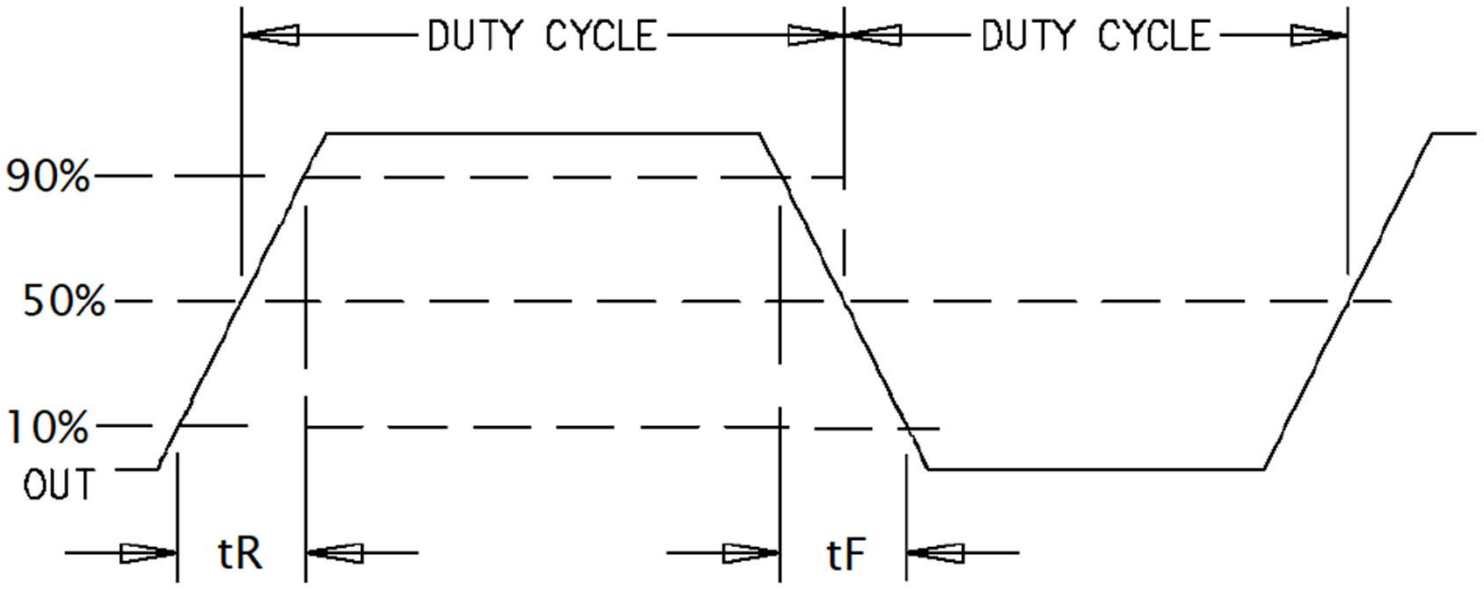
ELECTRICAL SPECIFICATIONS

Operating Voltage and Current						
Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Units**	**Conditions**
Operating Voltage	V_{CC}	3.135	3.300	3.465	V	M6271
		2.850	3.000	3.150	V	M6272
Operating Current	I_C			4.4	mA	CMOS @ 16 MHz
				5.5	mA	CMOS @ 26 MHz
				7.8	mA	CMOS @ 50 MHz
				3.5	mA	Clipped Sine @ 16 MHz
				3.9	mA	Clipped Sine @ 26 MHz
				5.0	mA	Clipped Sine @ 50 MHz
Temperature						
Operating Temperature	T_A	See ordering information			°C	
Storage Temperature	T_S	-55		+125	°C	
Notes						
Note 1	Refer to the load circuit diagram in this data sheet.					
Note 2	Contact factory for other tuning range options.					

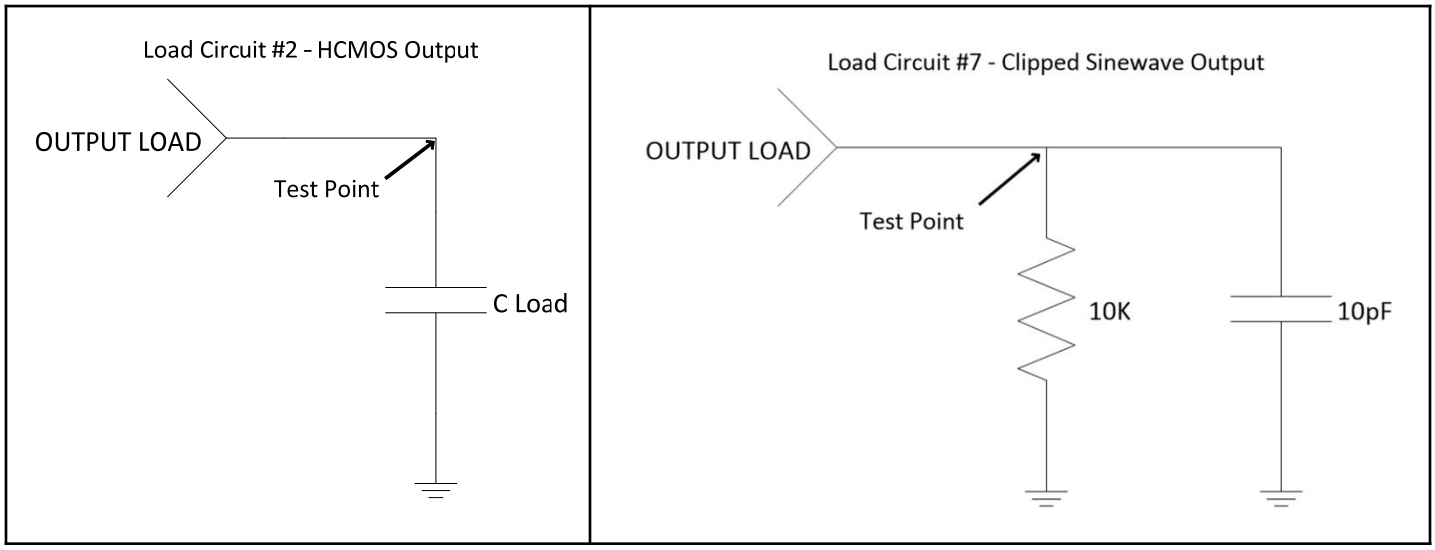
ENVIRONMENTAL CONDITIONS

Shock	Per MIL-STD-202, Method 213, Condition C
Vibration	Per MIL-STD-202, Methods 201 & 204
Solderability	Per EIAJ-STD-002
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10-8 atm cc/s of helium)
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Thermal Cycle	Per MIL-STD-883, Method 1010, Condition B

OUTPUT WAVEFORM (CMOS OUTPUT)

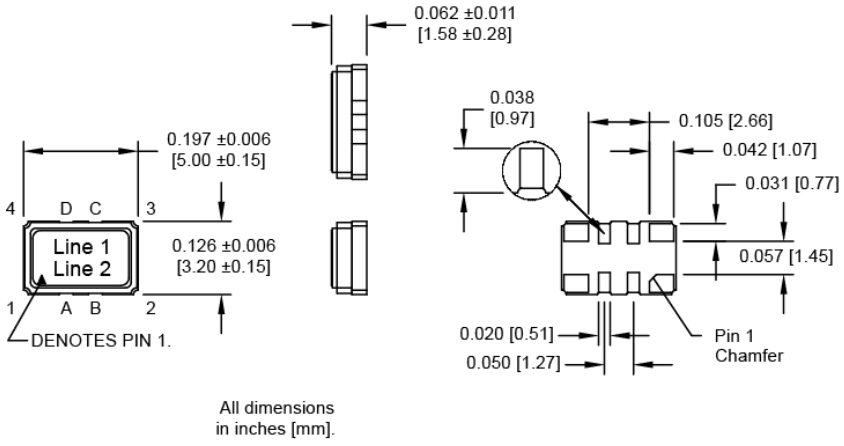


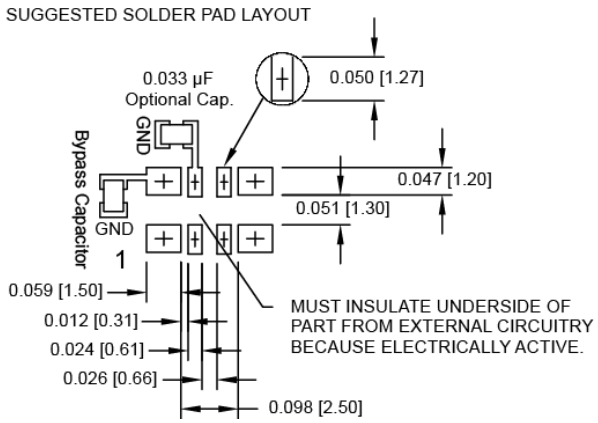
LOAD CIRCUIT DIAGRAMS



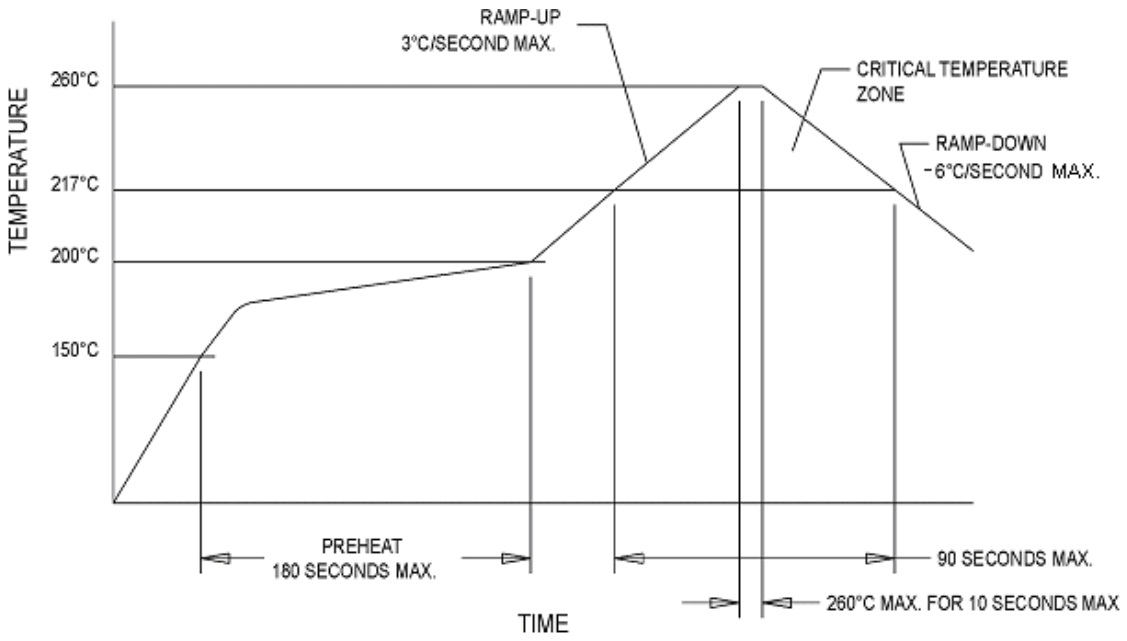
MECHANICAL AND PIN OUT INFORMATION - Package Code T (4/5 Pad)

Pad	Function
1	Voltage Control or N/C
A	N/C – Do Not Connect
B	N/C – Do Not Connect
2	Ground
3	Output
C	Tristate or N/C - Do Not Connect
D	N/C or Phase Noise Filter
D	Supply Vcc+



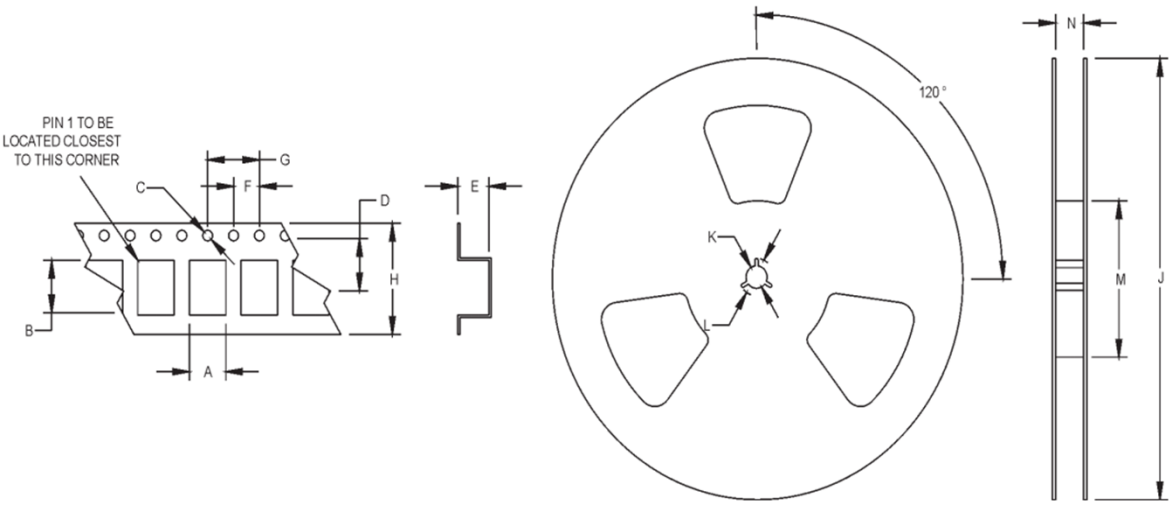


LEAD FREE SOLDER PROFILE



TAPE AND REEL SPECIFICATIONS

All units in mm



A	B	C	D	E	F	G	H	J	K	L	M
3.7	5.5		5.5	1.4	4	8	12	255			80

http://www.mtronpti.com 407-298-2000 MtronPTI 2525 Shader Road Orlando, FL 32804