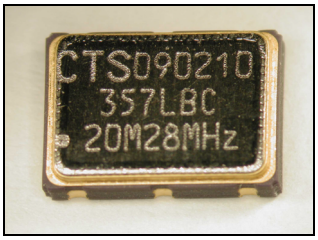
CTS COMMUNICATIONS COMPONENTS, INC.

Model 357

5x7mm Low Cost Surface Mount VCXO

- ♦ Frequency Stability to ±20 PPM
- ♦ +3.3Vdc or +5.0Vdc Operation
- ♦ HCMOS Output
- ♦ Operating Temperature to –40°C to +85°C
- ♦ Output Enable Standard
- ♦ Tape & Reel Packaging
- ♦ Pb Free



ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Output Frequency Range Model 357S, 357W Model 357L, 357V	f_O	 1.5 1.5	 - -	 80 80	 MHz MHz
Frequency Stability (Note 1) (See Ordering Information)	-	-	-	20, 25, 50	± ppm
Absolute Pull Range (Note 2) (See Ordering Information)	-	32, 50, 80, 100	-	-	± ppm
Supply Voltage Model 357S, 357W Model 357L, 357V	V_{CC}	 4.5 2.97	 5.0 3.3	 5.5 3.63	 V V
Operating Supply Current C_L = 15pf Model 357S, 357W Model 357L, 357V	I_{CC}	 - -	 - -	 40 50	 mA mA
Output load	C_L	-	-	15	pf
Control Voltage Model 357S, 357W Model 357L, 357V	V_C	 0.5 0.3	 2.5 1.65	 4.5 3.0	 V V
Output Voltage Levels					
Logic '1' Level I_{OH} = 14 mA	V_{OH}	0.9 * Vcc	-	-	V
Logic '0' Level I_{OL} = -14 mA	V_{OL}	-	-	0.1 * Vcc	V
Output Transition Times (10% to 90%)					
Rise & Fall Time C_L = 15pf	T_R, T_F	-	-	5.0	ns
Output Duty Cycle (@ 50% Level)	SYM	45	-	55	%
Start Up Time	-	-	-	10.0	ms
Phase Jitter (Bandwidth 12K – 20M Hz)	-	-	< 1	-	ps RMS
Linearity < 52 MHz > 52 MHz	L	 - -	 - -	 10 15	 %
Transfer Function	-	-	Positive	-	-
Input Impedance	Z_C	50	-	-	K Ohms
Modulation Roll-off (@ -3dB)	-	10	-	-	KHz
Tri-state – Oscillator Run Enable Input Voltage Disable Input Voltage Enable/ Disable Time	 V_{IH} V_{IL} t_{PLZ}	 2.5 - -	 - - -	 - 0.5 100	 V V ns

Notes

1. Inclusive of initial tolerance at the time of shipment, changes in supply voltage, load and operating temperature.
2. Minimum guaranteed frequency shift from f_o over variations in temperature, aging, power supply and load at an average operating temperature of +40°C for 10 years.

ORDERING INFORMATION

357 □ □ □ □ □□□ M □□□□

Supply Voltage
L = +3.3 Vdc, Pin 2 Enable (std)
S = +5.0 Vdc, Pin 2 Enable (std)
V = +3.3 Vdc, Pin 5 Enable
W = +5.0 Vdc, Pin 5 Enable

Absolute Pull Range
A = ±32 ppm (Not Available)
B = ±50 ppm (std)
C = ±80 ppm
D = ±100 ppm

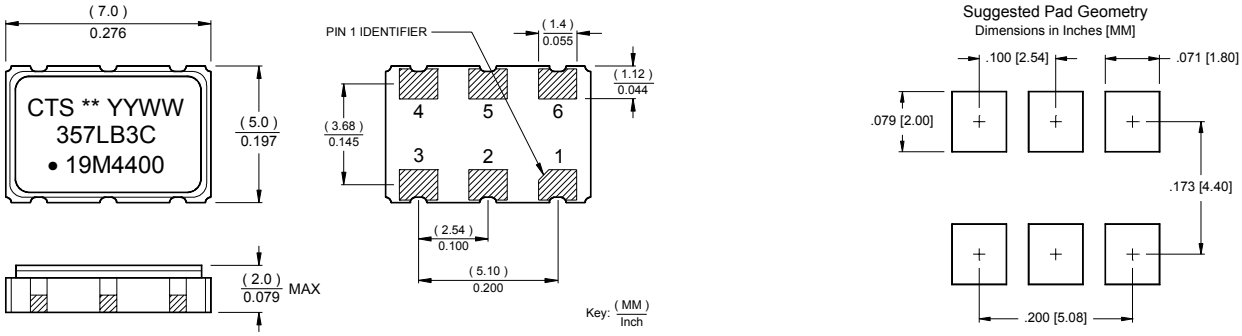
Frequency in MHz
M – Indicates decimal point and MHz. Frequency shall be recorded with all significant digits identified.

Operating Temperature Range
C = -20°C to +70°C (std)
I = -40°C to +85°C

Frequency Stability
3 = ±50 ppm (std)
5 = ±25 ppm
6 = ±20 ppm

Example P/N: 357LB3C019M4400

MECHANICAL SPECIFICATIONS



Marking Notes:
1. ** Manufacturing Site Code.
2. YY – year, WW – week.
3. Frequency shall be marked with 4 significant digits to the right of the "M".

Terminations plated with 0.3 – 1.0 um gold (Au).

Pin	Symbol	Functional Description
1	VC	Control Voltage
2	EOH	Enable
3	GND	Circuit and Package Ground
4	Output	RF Output
5	N.C.	Not Connected Internally
6	Vcc	Supply Voltage

Enable Truth Table

Pin 2	Pin 4
"1"	Output
"0"	High Imp.
Open	Output

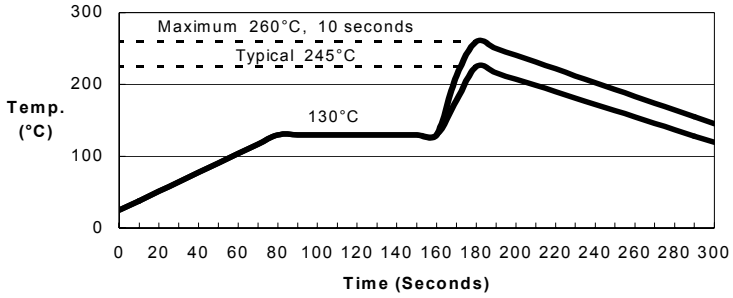
QUALITY AND RELIABILITY

Quality Systems meet or exceed the requirements of ISO 9000: 2000 standards.
Reliability Audits are performed on this or similar products with results available upon request.

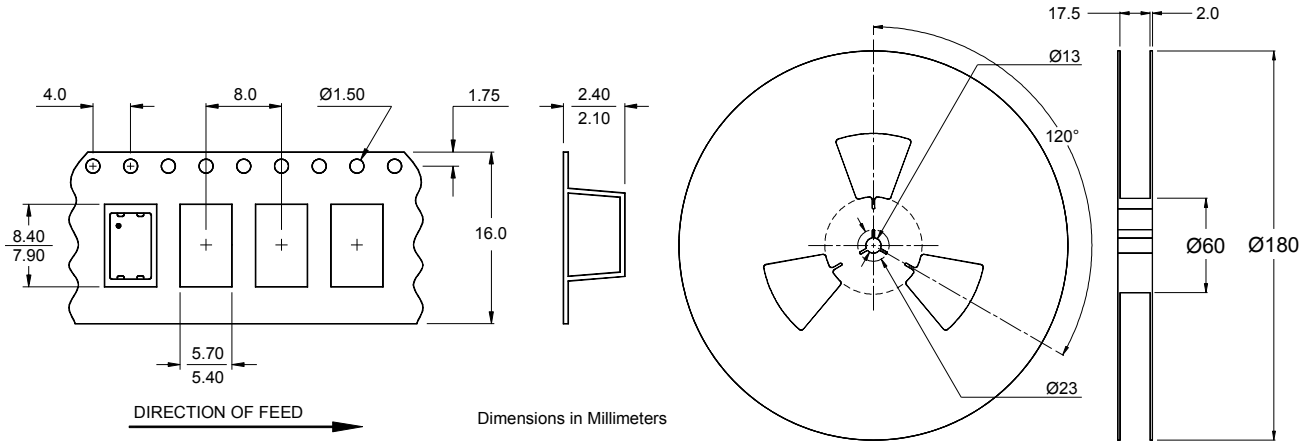
ENVIRONMENTAL SPECIFICATIONS

▪ Storage Temperature:	-55°C to +125°C.
▪ Temperature Cycle:	400 cycles, -55°C to +125°C, 10 min dwell, 1 min transfer.
▪ Mechanical Shock:	1,500g's, 0.5mS, ½ sinewave, 3 shocks each direction, in 3 planes.
▪ Sinusoidal Vibration:	0.06" D.A., 10 to 55 Hz and 20g's, 55 to 2,000 Hz, 3 cycles per plane.
▪ Gross Leak:	No leak shall appear while immersed in an FC40 or equivalent liquid at 125°C for 20 seconds.
▪ Fine Leak:	Mass spectrometer leak rates less than $2x10^{-8}$ ATM cc/sec air equivalent.
▪ Resistance to Soldering Heat:	Product must survive 3 reflows of 260°C peak, 10 seconds maximum.
▪ High Temperature Operating Bias:	2,000 hours at 125°C, disregarding frequency shift.
▪ Frequency Aging:	< 5 ppm shift in 1,000 hours at 85°C.

Suggested Reflow Profile



TAPE AND REEL INFORMATION



Device quantity shall be 1,000 pieces on a 180mm reel.