

- ◆ Frequency Stability to Stratum 3E of GR-1244
- ◆ Recommended for or use with **Zarlink** SONET/SDH System Synchronizer Chip Sets
- ◆ +3.3Vdc or +5.0Vdc Operation
- ◆ Precision Low Aging "SC" Cut Crystal
- ◆ Through-Hole or Surface Mount Configuration
- ◆ RoHS Compliant



Electrical Characteristics

Parameter	Sym	Conditions	Min	Typical	Max	Unit
Power Requirements						
Power Supply ¹	Vcc	± 5% ± 5%	3.135 4.75	3.30 5.0	3.465 5.25	Vdc Vdc
Turn-On Power	Pmax	Vcc = Max. Std. Load		3.5	4.0	W
Steady State Power	Pss	Vcc = Max Std. Load @ +25°C		1.5		W
Start-Up Time	Tsu	To 90% Amplitude			50	mSec
Warm-Up Time	Twu	To meet full spec @ +25°C			15	minutes
Frequency Stabilities						
Center Frequency	f _{nom}			20.000		MHz
Initial Tolerance	f _{cal}	Ta = +25°C (At time of Shipment)		± 0.3	± 0.5	ppm
Frequency vs. Temperature	Δf/ΔTemp	Operating Temperature ¹		± 6	± 8	ppb
Frequency vs. Voltage	Δf/ΔVcc	Vcc ± 5%		± 1		ppb
Frequency vs Time (Aging)	Δf/ΔTime	per Day 20 years		± 1	± 1.5	ppb ppm
24 Hour Holdover Stability	Δf/24Hr	Inclusive of Temperature, Supply Variation and 24 hours Aging		± 8	± 10	ppb
Total Free-Running Accuracy	Δf/Life	All Conditions for 20 years (Reference to f _{nom})			± 2.1	ppm
Waveform: HCMOS Output						
Symmetry	Sym	@ 50% Level	40	50	60	%
Amplitude	Vo	Logic "1" Logic "0"	0.9Vcc		0.1Vcc	V V
Rise/Fall Times	tr, tf	20% to 80%		4	7	nSec
Load	RL	Output to Ground		10KΩ // 15pF		
Sub-Harmonics					-25	dBc
Phase Noise		Offset = 1 Hz		-70	-60	dBc/Hz
		10 Hz		-103	-100	dBc/Hz
		100 Hz		-130	-125	dBc/Hz
		1 KHz		-140	-130	dBc/Hz
		10 KHz		-142	-135	dBc/Hz

¹ See Dash Number Table for Voltage and Operating Temperature

Dash Number Table (CTS Dash No. = -XXX)							
No Air-Flow Shield				With Air-Flow Shield			
CTS Dash No.	Package Specification	Vcc	Operating Temperature Range	CTS Dash No.	Package Specification	Vcc	Operating Temperature Range
-001	Figure 1	+5.0 Vdc	0°C to +70°C	-011	Figure 3	+5.0 Vdc	0°C to +70°C
-002	Figure 1	+5.0 Vdc	-40°C to +85°C	-012	Figure 3	+5.0 Vdc	-40°C to +85°C
-003	Figure 1	+3.3 Vdc	0°C to +70°C	-013	Figure 3	+3.3 Vdc	0°C to +70°C
-004	Figure 1	+3.3 Vdc	-40°C to +85°C	-014	Figure 3	+3.3 Vdc	-40°C to +85°C
-005	Figure 2	+5.0 Vdc	0°C to +70°C	-015	Figure 4	+5.0 Vdc	0°C to +70°C
-006	Figure 2	+5.0 Vdc	-40°C to +85°C	-016	Figure 4	+5.0 Vdc	-40°C to +85°C
-007	Figure 2	+3.3 Vdc	0°C to +70°C	-017	Figure 4	+3.3 Vdc	0°C to +70°C
-008	Figure 2	+3.3 Vdc	-40°C to +85°C	-018	Figure 4	+3.3 Vdc	-40°C to +85°C

Complete CTS orderable part number includes 1180026-XXX (where -XXX = CTS Dash No. from this table)

Environmental and Mechanical Requirements	
Storage Temperature :	-55°C to +125°C
Reflow Soldering :	Will withstand 240°C for 20 seconds
Shock :	50 G's 11 ms, Pulse, 3 shocks per axis
Vibration :	10G's Peak, 20 to 2000 Hz
Case :	Dual-in-Line
Seal :	Resistance Weld
Surface Mount Base :	High Temperature FR-4
MSL :	1
6/6 RoHS Compliance :	This product is fully compliant to RoHS Directive 2002/95/EC

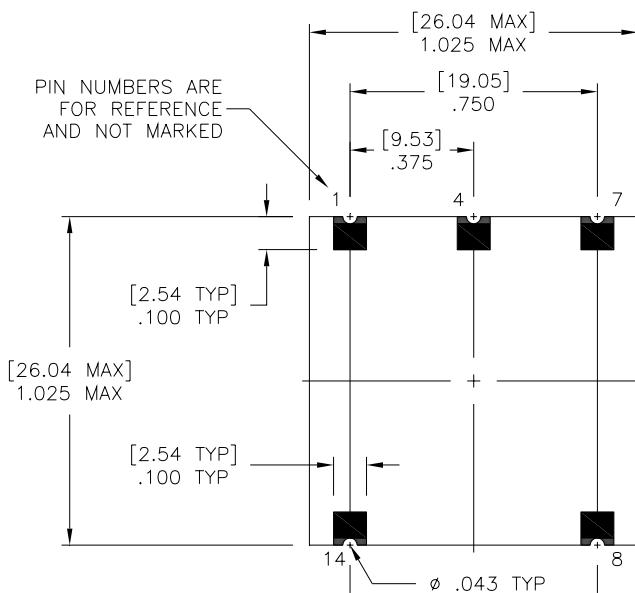
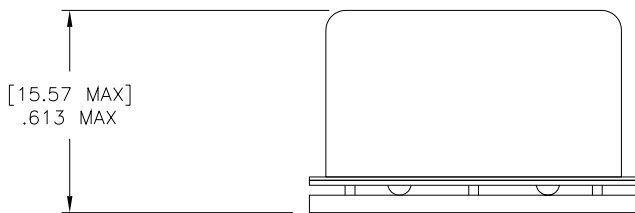
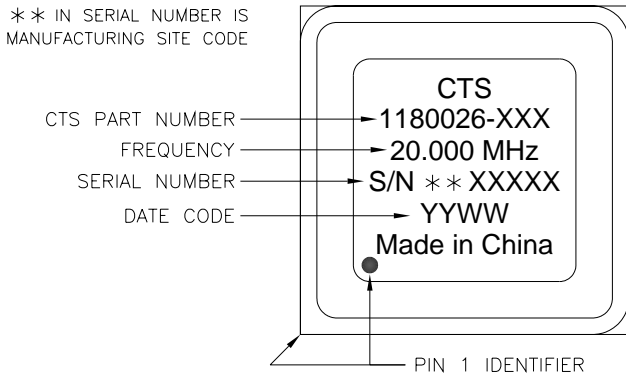
PIN #	FUNCTION
1	RF OUTPUT
4	GROUND/CASE
7	N/C
8	N/C
14	Vcc

KEY : [MM]
 INCH

TOLERANCES : [±.13]
 ±.005

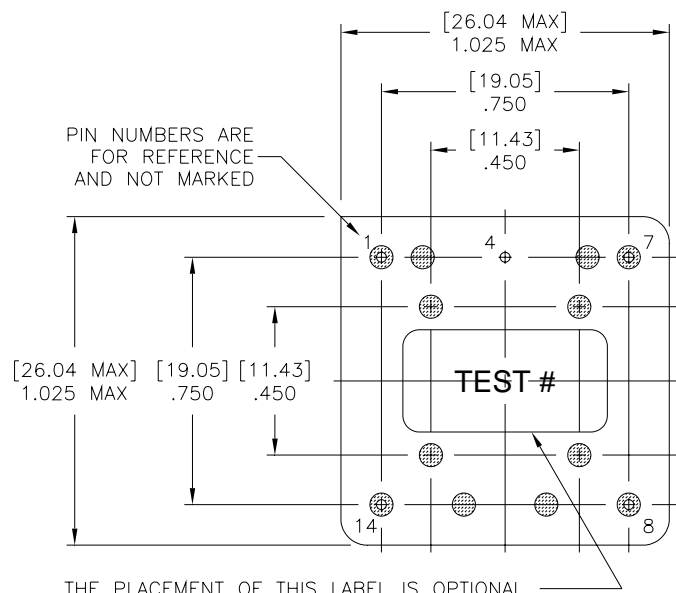
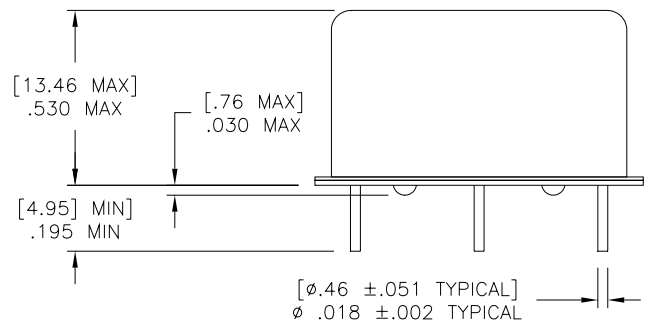
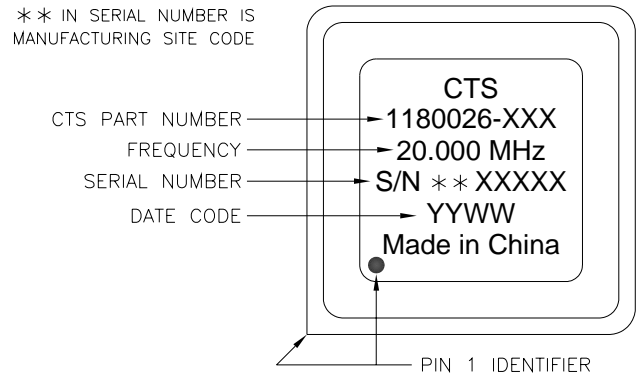
Package Specifications

Figure 1



PAD TERMINATION FINISH : GOLD PLATED,
 <10 MICRORINCH, OVER NICKEL PLATED COPPER

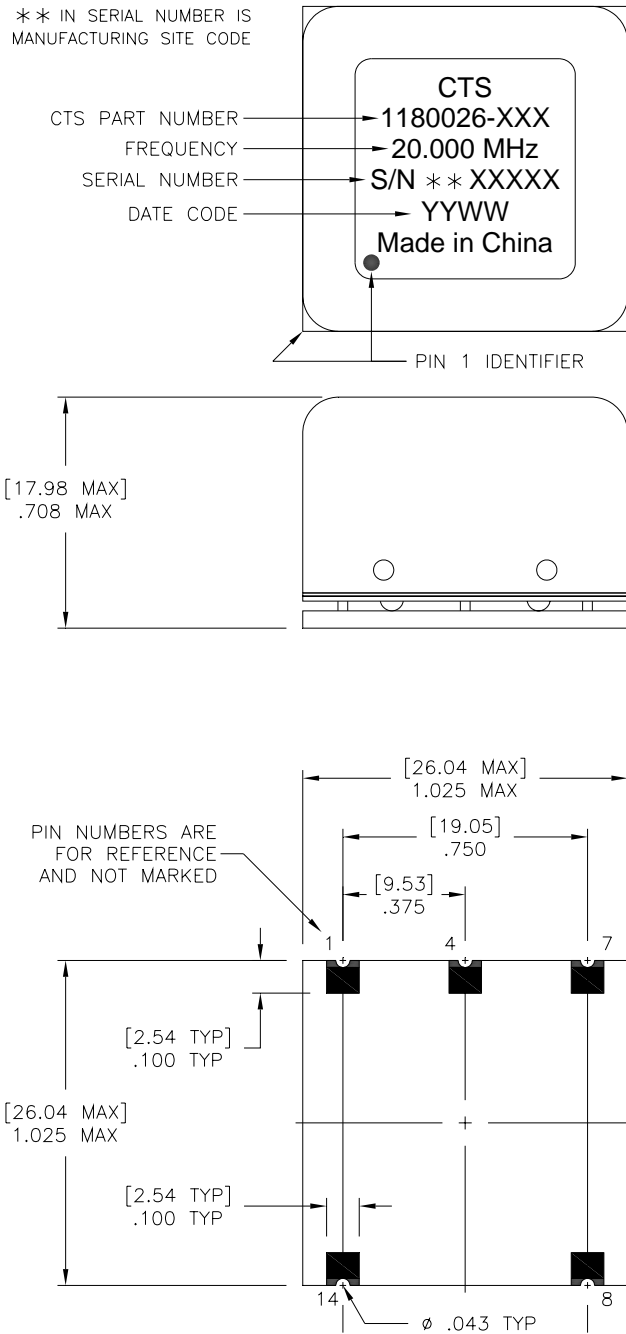
Figure 2



LEAD TERMINATION FINISH : SOLDER COATED, 96.5/3.5 Sn/Ag

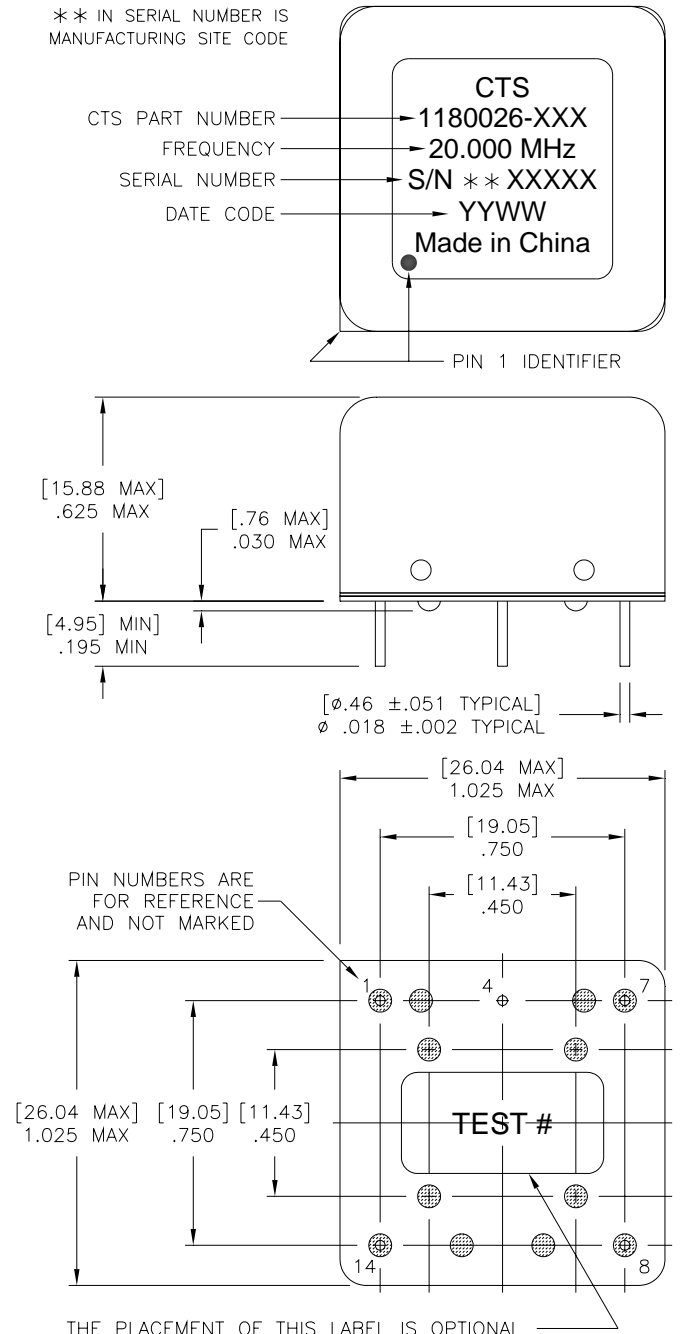
Package Specifications (continued)

Figure 3



PAD TERMINATION FINISH : GOLD PLATED,
 <10 MICROINCH, OVER NICKEL PLATED COPPER

Figure 4



LEAD TERMINATION FINISH : SOLDER COATED, 96.5/3.5 Sn/Ag