3.2 mm x 2.5 mm 6 Pads SMD TCXO or TC/VCXO Oscillator

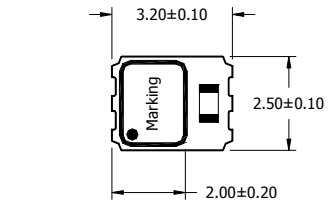
I595 / I795 Series

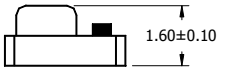
Product Features:
- Advanced PLL Technology
- 0.8 pSec Phase Jitter typ.
- Fast Delivery
- RoHS and Lead Free Compliant

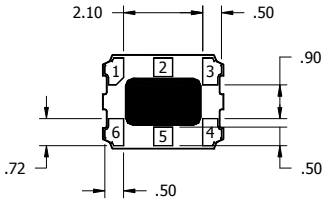
Applications:
- Server & Storage
- CDMA / WCDMA
- 802.11 / Wifi
- T1/E1. T3/E3

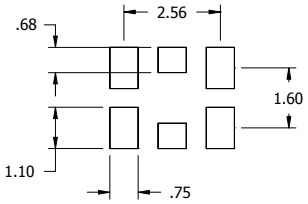
Frequency	
LVCMOS	10.000 MHz to 245.000 MHz
LVPECL	10.000 MHz to 1450.000 MHz
LVDS	10.000 MHz to 1450.000 MHz
Output Levels	
LVCMOS	Logic "0" = 10% of Vcc max Logic "1" = 90% of Vcc min
LVPECL	Logic "0" = Vcc – 1.85 Vmin, Vcc – 1.60 V max Logic "1" = Vcc – 1.03 V min, Vcc -0.60 V max
LVDS	Logic "0" = 1.10 V typ, 0.90 V min Logic "1" = 1.40 V typ, 1.60 V max
Load	
LVCMOS	15pF
LVPECL	Differential
LVDS	Differential
Duty Cycle	50% ±5% (Ref to 50% of waveform)
Rise / Fall Time	
LVCMOS	1.5 nSec typ, 3.0 nSec max (10% to 90% of waveform)
LVPECL	0.2 nSec typ, 0.5 nSec max (20% to 80% of waveform)
LVDS	0.2 nSec typ, 0.4 nSec max (20% to 80% of waveform)
Frequency Stability	
Initial Calibration Tolerance	±1.0 ppm max at +25ºC ±2ºC at time of shipment
vs. Temperature	See Stability in Part Number Guide
vs. Aging	±1.0 ppm max per year at +25ºC
vs. Voltage	±0.2 ppm max for a ±5% change in Supply Voltage (Vcc)
vs. Load	±0.2 ppm max for a ±10% change in load
vs. Reflow	±1.0 ppm max after 1 reflow and measured 24 hours after.
Start-up Time	5 mSec max
Supply Voltage (±5%)	+2.50 VDC , +3.30 VDC See Part Number Guide
Current	See table 1 sheet 2
Current with Output Disabled	18 mA typ
Phase Noise (RMS)	0.8 pSec typ (12.000 kHz to 20.000 MHz) Less than 400nSec (1.875 kHz to 21.000 MHz)
Temperature Range	
Operating	See Operating Temperature in Part Number Guide
Storage	-55ºC to +150ºC

Notes:
1. An 0.01 µF and 10 µF bypass capacitors are recommended between Vcc (Pin 6) and GND (Pin 3) to minimize power supply noise









Suggested Land Pattern

Pin Connections		
Pin 1	TCVCXO	Voltage Control
	TCXO	N/C or Ground
Pin 2	N/C or Enable / Disable	
Pin 3	Ground	
Pin 4	Output	
Pin 5	LVCMOS	N/C
	LVPECL LVDS	Complementary Output
Pin 6	Supply Voltage (Vcc)	

Dimensions in mm

Part Number Guide Sample Part Number: I595-63Q8H-20.000

Package	Input Voltage	Operating Temperature	Stability (in ppm)	Output	Enable / Disable (Pin 2)	Frequency
I595 = TCXO I795 = TCVCXO	3 = +3.3 V	1 = 0ºC to +70ºC	0 = ±1.5*	3 = LVCMOS	H = Enable	20.000 MHz
	6 = +2.5 V	2 = -40ºC to =85ºC	P = ±2.0*	8 = LVDS	O = N/C	
		3 = -20ºC to +70ºC	Q = ±2.5*	9 = LVPECL		
		5 = -30ºC to +85ºC	R = ±3.0			
			J = ±5.0			

* Not available for all temperature ranges

Pin Select Funtions

Voltage Control Function (Pin 1) I795 only	
VC Voltage Center & Range	+1.5 V ±1.0 V for both Vcc = +2.5 V & +3.3 V
Frequency Pull Range	±8.0 ppm
Linearity	±1% typ, ±10% max
Transfer Function	Positive
Absolute Voltage Vcc = +3.3 V Vcc = +2.5 V	 +3.63 V max +2.63 V max
Input Impedance	770 kΩ typ
Harmonics	-5.0 dBc max

E/D Function (Pin 2)	
E/D Control	0.7% of Vcc min or no connection enable output 0.3% of Vcc max to disable output (high impedance)
E/D Time	200 nSec max
Disable Time	50 nSec max

SSB Phase Noise

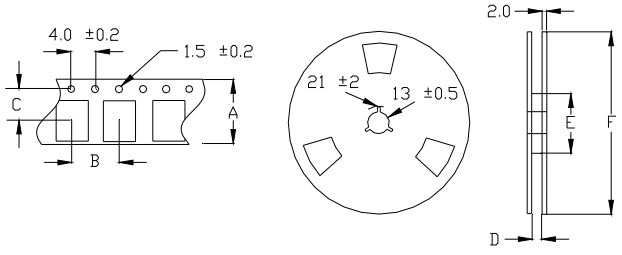
Offset	77.76	156.25	212.50	622.08	1000.00	1250.00
10 Hz	-62 dBc/Hz	-65 dBc/Hz	-61 dBc/Hz	-51 dBc/Hz	-40 dBc/Hz	-43 dBc/Hz
100 Hz	-100 dBc/Hz	-92 dBc/Hz	-90 dBc/Hz	-79 dBc/Hz	-73 dBc/Hz	-75 dBc/Hz
1 kHz	-116 dBc/Hz	-108 dBc/Hz	-106 dBc/Hz	-97 dBc/Hz	-91 dBc/Hz	-89 dBc/Hz
10 kHz	-122 dBc/Hz	-114 dBc/Hz	-110 dBc/Hz	-102 dBc/Hz	-99 dBc/Hz	-95 dBc/Hz
100 kHz	-124 dBc/Hz	-117 dBc/Hz	-112 dBc/Hz	-103 dBc/Hz	-99 dBc/Hz	-96 dBc/Hz
1 MHz	-144 dBc/Hz	-139 dBc/Hz	-133 dBc/Hz	-125 dBc/Hz	-121 dBc/Hz	-117 dBc/Hz
10 MHz	-152 dBc/Hz	-147 dBc/Hz	-142 dBc/Hz	-134 dBc/Hz	-129 dBc/Hz	-127 dBc/Hz

Supply Current

Current Consumption	LVCMOS	LVPECL	LVDS
Vcc = +2.50 VDC All values are typical an over the operating temperature.	50 MHz = 24mA 125 MHz = 28 mA 200 MHz = 30 mA	156 MHZ = 36mA 600 MHz = 40mA 800 MHz = 46mA 1.0G Hz = 50mA	156 MHZ = 22mA 600 MHz = 28mA 800 MHz = 30mA 1.0G Hz = 34mA
Vcc = +3.30 VDC All values are typical an over the operating temperature.	50 MHz = 26mA 125 MHz = 30 mA 200 MHz = 34 mA	156 MHZ = 40mA 600 MHz = 45mA 800 MHz = 48mA 1.0G Hz = 52mA	156 MHZ = 25mA 600 MHz = 30mA 800 MHz = 32mA 1.0G Hz = 36mA

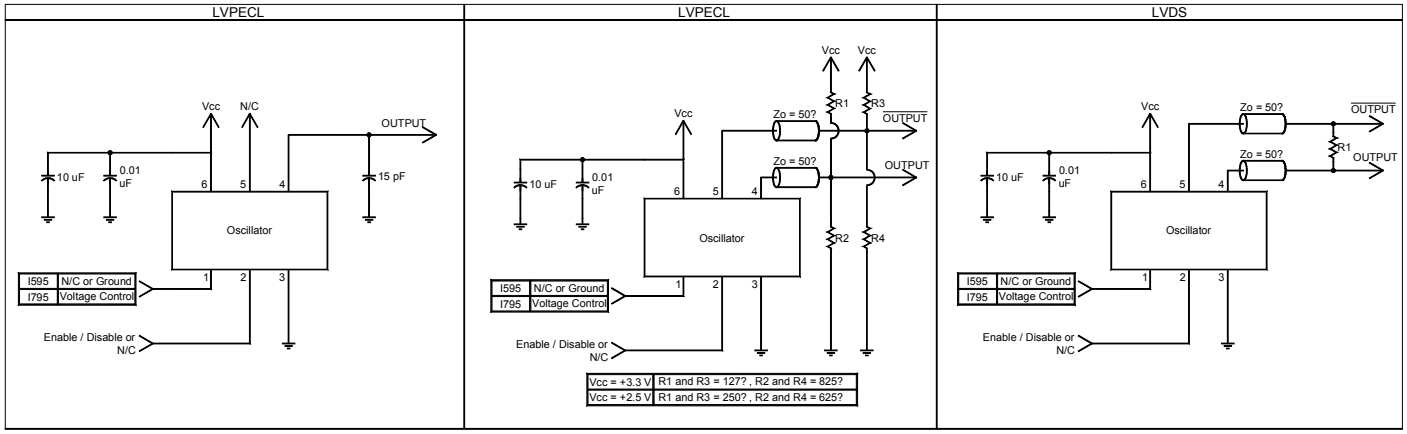
Table 1

Tape and Reel Information:



Quantity per Reel	3000
A	8.0 ±0.2
B	4.0 ±0.1
C	3.5 ±0.05
D	9.0 ±0.3
E	60 / 80
F	180 / 250

Typical Applications:



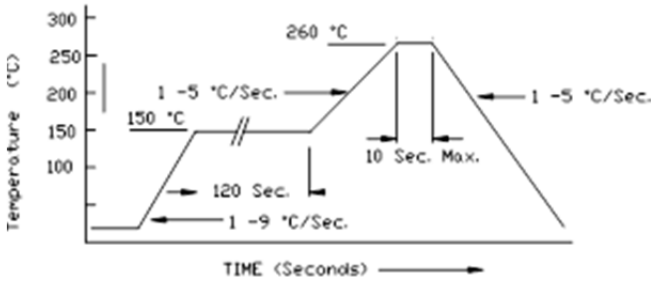
Environmental Specifications:

Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Resistance to Soldering Heat	J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)
Hazardous Substance	Pb-Free / RoHS / Green Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A2, R1=2x10-8 atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

Package Information:

MSL – N.A. (package does not contain plastic, storage life is unlimited under normal room conditions)
Termination = e4 (Au over Ni over W base metallization)

Pb Free Solder Reflow Profile:



Marking:

Line 1: I - Date Code (yww)
Line 2: Frequency

Units are backward compatible with 240ºC reflow process.

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