MTCH, MTCS, & MTCZ SERIES TCXO

O **11.7 X 9.6 SMD Package**

O **Voltage Control Option**

O **Wide Frequency Range**

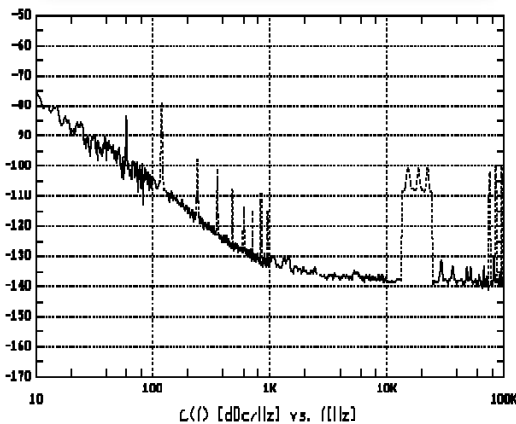O **RoHS Compliant Available**

Output	HCMOS	Clipped Sinewave	Sinewave
Frequency Range	9.600MHZ to 50.000MHZ		
Load	10k Ohms // 15pF	10k Ohms // 15pF	50 Ohms
Supply Current	35mA max	3mA max	25mA max
Output Level	Logic "1" = 90% of Vdd min Logic "0" = 10% of Vdd max	0.8V p-p min	7 dBm
Symmetry	See Part Number Guide	N/A	N/A
Freq. Stability vs Temp (Note 1)	(See Frequency Stability vs Temperature Table)		
Freq. Stability vs Aging	±1 ppm per year max		
Freq. Stability vs Voltage	±0.3 ppm with a 5% change in Vdd		
Freq. Stability vs Load	±0.3 ppm with a 10% change in Load		
Operature Temperature	(See Frequency Stability vs Temperature Table)		
Storage Temperature	-40°C to +85°C		
Supply Voltage (Vdd)	+3.3VDC ±5%		+5.0VDC ±5%
Control Voltage with VC option	+1.65VDC ±1.50VDC Positive Slope		+2.50VDC ±2.00VDC Positive Slope

Pin 1 Connection	
No Connection	No Connection
VC Option	±10 ppm min

Mechanical Trimmer	±3 ppm min

Phase Noise

L(f) [dBc/Hz] vs. f[Hz]

Marking Detail

Line 1 = MXXXXX		
M	≑	MMD
XXXXX	≑	Frequency in MHZ
Line 2 = SYYWWL		
S	≑	Internal Code
YYWW	≑	4 Digit Date Code (Year / Week)
L	≑	Denotes RoHS Compliant
Line 3 = XXXXX		
Internal use only		
May vary with lots		
Black dot to denote Pin 1		

Envir & Mech Detail

Shock	MIL-STD-883, Method 2002, Condition B
Solderability	MIL-STD-883, Method 2003
Vibration	MIL-STD-883, Method 2007, Condition A

Revision:	MTCH011011L

Revisions only with customer approval

Part Number Guide

MT | C | □ | □ | □ | □ | □ | □ | □ | — | Frequency | — | □

9.6 x 11.7 SMD

Series Option
C = C series (w/ trimmer)

Output
H = HCMOS
S = Clipped Sinewave
Z = Sinewave

Height Option
A = 3.00 [.118] max
B = 5.00 [.197] max

RoHS Compliant
Blank = Not Compliant
F = is Compliant

Supply Voltage
5 = +5 VDC
3 = +3.3 VDC
2 = +2.5 VDC

Frequency Stability
10 = ±1.0 ppm
15 = ±1.5 ppm
20 = ±2.0 ppm
25 = ±2.5 ppm
30 = ±3.0 ppm
50 = ±5.0 ppm

Operating Temperature
A = 0°C to +50°C
C = -20°C to +70°C
D = -30°C to +70°C
E = -30°C to +80°C
F = -40°C to +85°C
G = 0°C to +70°C

Pin 1 Connection
Blank = No Connect
V = Voltage Control

Symmetry
Blank = 40/60%
A = 45/55%

Packaging
Blank = Bulk
T = Tape and Reel

Please Consult with MMD Sales Department for any other Parameters or Options

Frequency Stability vs Temperature Table

Code	Stability / Temp	10 ±1.0ppm	15 ±1.5ppm	20 ±2.0ppm	25 ±2.5ppm	30 ±3.0ppm	50 ±5.0ppm
A	0°C TO +50°C	●	●	●	●	●	●
G	0°C TO +70°C		●	●	●	●	●
C	-20°C TO +70°C			●	●	●	●
D	-30°C TO +70°C				●	●	●
F	-40°C TO +85°C				●	●	●
● = Available			= Consult with the Manufacturer				

Tape & Reel Dimensions

PITCH	12.00 [.471]
TAPE WIDTH	24.00 [.945]
REEL DIA	330 [13.0]
PIN 1 ORIENT.	Q1

NOTES: UNLESS OTHERWISE SPECIFIED
1. Applicable Standards / Specifications
   ANSI Y14.5M, Dimensions and Tolerances
   EIA-481-B, 8 mm through 200mm Embossed Carrier Taping and 8 mm and 12 mm
   Punched Carrier Taping of Surface Mount Components for Automatic Handling.
2. Dimensions are in millimeters [inch].
3. Tolerances are ±0.1 [.004] mm unless otherwise specified.
4. Do not scale drawing.

Mechanical Details

9.61 [.378] MAX
A = 3.00 [.118] MAX
B = 5.00 [.197] MAX
7.00 [.276]
11.70 [0.461] MAX
7.62 [.300]
1.20 [.047]
1.40 [.055]

MXXXXX
SYYWWL
XXXXX

TRIMMER ACCESS

DIMENSION IN BRACKETS ARE IN INCHES
EXTERNAL BYPASS CAPACITOR IS RECOMMENDED
UNIT IS NOT HERMETICALLY SEALED

8.26 [.325]
7.62 [.300]
2.54 [.100]
2.54 [.100]

PIN CONNECTIONS	
PIN 1	VOLTAGE CONTROL OR NO CONNECTION
PIN 7	CASE GROUND
PIN 8	OUTPUT
PIN 14	SUPPLY VOLTAGE