

MOLDED SMD PLASTIC PACKAGE CRYSTAL (12.5 x 4.6 x 3.7mm)

FEATURES:

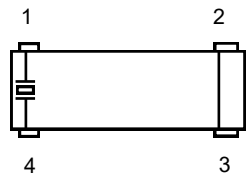
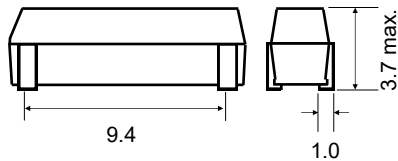
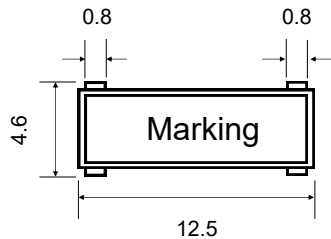
- HIGH FREQUENCY RANGE
- LOW COST
- LOW PROFILE



■ SPECIFICATION

FREQUENCY RANGE	8.000MHz ~ 70.000MHz
FREQUENCY TOLERANCE @ 25°C	±15ppm ~ ±50ppm (See P/N guide for other options)
FREQUENCY STABILITY	±20ppm ~ ±50ppm (See P/N guide for other options)
OPERATING TEMPERATURE RANGE	STD: 0°C to 70°C, Option: -40°C to 85°C (See P/N guide for other options)
STORAGE TEMPERATURE RANGE	-55°C to 125°C
LOAD CAPACITANCE	STD: 18pF (See P/N guide for other options)
SHUNT CAPACITANCE	7.0pF max.
INSULATION RESISTANCE	500MΩ min. at 100V _{DC} ± 15V _{DC}
DRIVE LEVEL	100uW max.
AGING	±5.0ppm / 1 st year max.
EQUIVALENT SERIES RESISTANCE	8.000MHz ~ 10.000MHz: 100Ω max. 10.001MHz ~ 12.000MHz: 80Ω max. Fundamental: 12.001MHz ~ 14.000MHz: 70Ω max. 14.001MHz ~ 16.000MHz: 50Ω max. 16.001MHz ~ 27.000MHz: 30Ω max.
	3 rd overtone: 27.001MHz ~ 70.000MHz: 100Ω max.
OPERATION MODE	Fundamental or 3 rd overtone

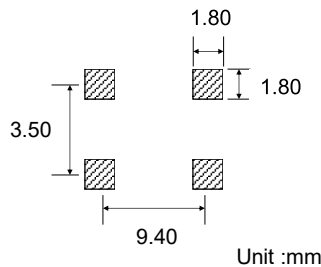
■ PACKAGE DIMENSIONS



Unit : mm

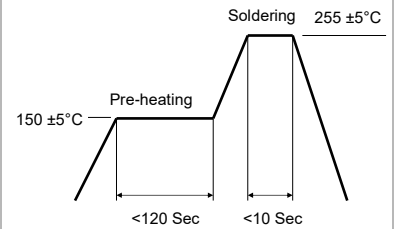
Pin Configuration	
1	Xtal
2	GND
3	GND
4	Xtal

■ SOLDER PATTERN



Unit : mm

■ REFLOW PROFILE



Note: Consult factory for detail

■ PART NUMBERING GUIDE

TS-SMD – F 00 00 HM 08 – 20.000M – TR

Mode
F: Fundamental
T: 3 rd overtone

Stability
00: ± 100ppm
50: ± 50ppm
25: ± 25ppm
15: ± 15ppm
10: ± 10ppm
XX: Two digit for Stability

Load Capacitance
08: 8pF
10: 10pF
12: 12pF
16: 16pF
18: 18pF
S: Series
20: 20pF
22: 22pF
24: 24pF
28: 28pF
32: 32pF

Other Options
TR: Tape and reel

Tolerance @ 25°C
00: ± 100ppm
50: ± 50ppm
30: ± 30ppm
25: ± 25ppm
10: ± 10ppm
XX: Two digit for Tolerance

Operating Temperature			
A: -55	F: -20	M: 70	S: 100
B: -50	G: -10	N: 75	T: 105
C: -40	H: 0	P: 80	U: 125
D: -35	J: 50	Q: 85	X: custom
E: -30	K: 60	R: 90	

Frequency
M: MHz

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