



Quartz Crystal

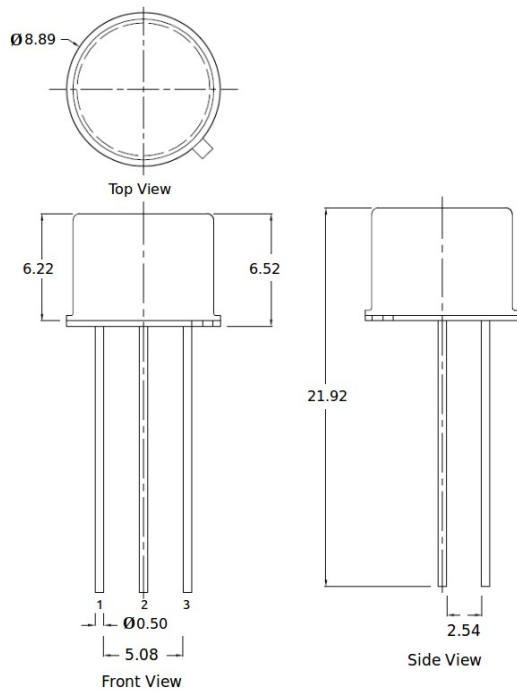
TO-5

Features

- Cold weld package
- 4 MHz ~ 125 MHz
- RoHS Compliant

Mechanical Specifications

Outline



▲ All dimensions are in mm. Tolerance is ± 0.2 mm, unless otherwise specified.

Pin Configuration:

Pin 1	Crystal
Pin 2	Case & Ground
Pin 3	Crystal

Table 1: General Specifications

Frequency Range	4 MHz ~ 125 MHz
Frequency Tolerance @ 25°C	Select from Table 4
Operating Temperature Range (OTR)	Select from Table 4
Temperature Stability	Select from Table 4
Equivalent Series Resistance (ESR)	As per Table 3
Drive Level	100 μ Watts (typical)
Shunt Capacitance, C_0	7.0 pF (max.)
Resonance Condition	XXS – Series, XXP – Parallel with xx pF (for parallel, please specify the xx value in pF)
Aging @ 25°C	± 1 ppm (max.)/ Year

Table 2: Frequency Range By Mode of Oscillation

Fundamental	3rd Overtone	5th Overtone
4.0 to 40 MHz	20 to 90 MHz	70 to 125 MHz

Table 3: Max. ESR

Frequency Range (MHz)	ESR	Frequency Range (MHz)	ESR
Fundamental		3rd Overtone	
4.0 to ≤ 6.0	150 Ω	20.0 to ≤ 27.0	80 Ω
6.0 to ≤ 8.0	100 Ω	27.0 to ≤ 34.0	70 Ω
8.0 to ≤ 10.0	50 Ω	34.0 to ≤ 45.0	45 Ω
10.0 to ≤ 13.0	40 Ω	45.0 to ≤ 90.0	35 Ω
13.0 to ≤ 18.0	30 Ω	5th Overtone	
18.0 to ≤ 25.0	25 Ω	70.0 to ≤ 125.0	70 Ω
25.0 to ≤ 40.0	20 Ω		

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Table 4: Operating Temperature Range and Frequency Tolerance/ Temperature Stability

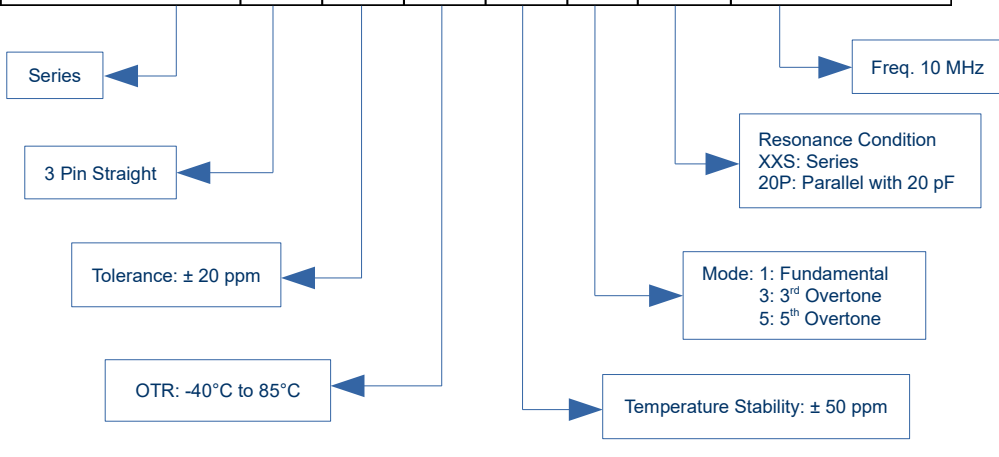
OTR Codes	Stability Codes		B	D	E	F	G	M	K
	Temperature Stability		± 5 ppm	± 10 ppm	± 15 ppm	± 20 ppm	± 25 ppm	± 50 ppm	± 100 ppm
A	Operating Temperature Range	0°C to +50°C							
B		0°C to +60°C							
F		0°C to +70°C							
D		-10°C to +60°C							
E		-10°C to +70°C							
C		-20°C to +70°C							
G		-30°C to +80°C							
H		-30°C to +85°C							
I		-40°C to +85°C							
J		-40°C to +90°C							
K		-55°C to +105°C							
L		-55°C to +125°C							

 Denotes Available  Denotes not Available

Ordering Information

Example

TO5	3	F	I	M	1	20P	010M000000
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Specifications subject to change without notice

Rev. Date: 6th July 2021

Note: Not all combination of options are available. Other specifications may be available upon request.

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