

# TF Series Crystal



- 1.5mm X 5mm Cylindrical
- 2mm X 6mm Cylindrical
- 3mm X 8mm Cylindrical
- RoHS Compliant Available



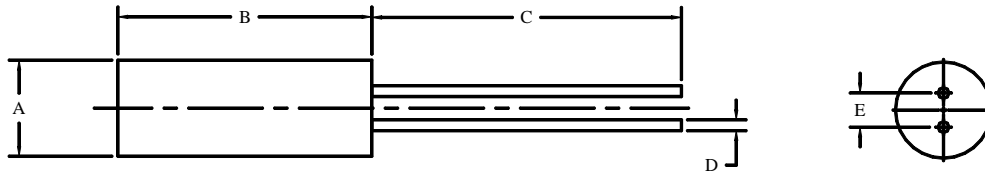
## ELECTRICAL SPECIFICATIONS:

Series	TF155	TF206	TF308
Frequency Range	32kHz to 120kHz	32kHz to 100kHz	29kHz to 40kHz
Frequency Tolerance	±30ppm to ±100ppm	±20ppm to ±100ppm	±30ppm to ±100ppm
Frequency Stability	$-.034(\pm 0.006)\text{ppm}/^\circ\text{C}^2(\text{t-to})^2$	$-.034(\pm 0.006)\text{ppm}/^\circ\text{C}^2(\text{t-to})^2$	$-.034(\pm 0.006)\text{ppm}/^\circ\text{C}^2(\text{t-to})^2$
Turnover Temperature (To)	+25°C ±5°C	+25°C ±5°C	+25°C ±5°C
Operating Temperature Range	-10°C to +60°C	-10°C to +60°C	-10°C to +60°C
Storage Temperature Range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Aging	±5ppm / 1 <sup>st</sup> yr max	±5ppm / 1 <sup>st</sup> yr max	±5ppm / 1 <sup>st</sup> yr max
Shunt Capacitance	0.8pF – 1.7pF typ*	0.8pF – 1.7pF typ*	0.8pF – 1.7pF typ*
Equivalent Series Resistance	10K ohms max	35K ohms max	35K ohms max
Load Capacitance	12.5pF of specify	12.5pF of specify	12.5pF of specify
Drive Level	1μW max	1μW max	1μW max
Motional Capacitance	1fF – 4fF*	1fF – 4fF*	1fF – 4fF*
Capacitance Ratio	425-800 typ*	425-800 typ*	425-800 typ*

\*Indicates that the spec given varies depending on frequency

Insulation Resistance	500M ohms minimum / DC 100VDC ±15VDC
Hermeticity of Seal	1 x 10 <sup>-2</sup> mPa (m <sup>3</sup> /s) max
Shock Resistance	±5ppm max (drop test onto a hard wooden board from 75cm)

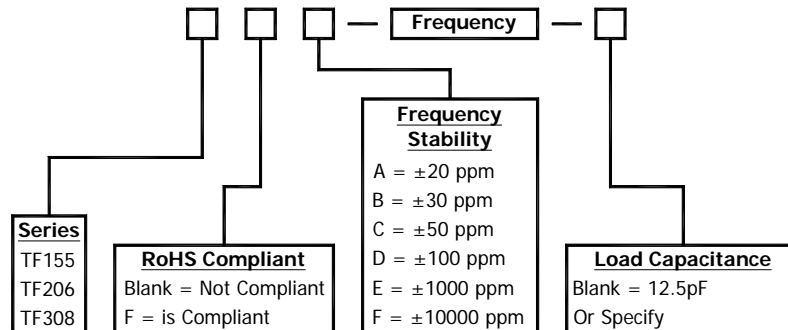
## MECHANICALS DETAIL:



DIMENSIONS IN BRACKETS ARE INCHES

Series	A	B	C	D	E
TF155	1.5 [.059]	5.1 [.201]	4.3 [.169]	0.2 [.008]	0.45 [.018]
TF206	2.1 [.083]	6.2 [.244]	10.0 [.394]	0.26 [.010]	0.7 [.028]
TF308	3.1 [.122]	8.2 [.323]	10.0 [.394]	0.3 [.012]	0.8 [.031]

## PART NUMBER GUIDE:



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

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