

# TF310 Series Crystal



- 3mm X 10mm Cylindrical
- AT Strip Cylindrical Crystal
- RoHS Compliant
- Thru-Hole Device



|                                    |  |
|------------------------------------|--|
| Frequency Range                    | 3.579545MHz to 65.000MHz                                 |
| Frequency Tolerance / Stability    | (See Part Number Guide for Options)                      |
| Operating Temperature Range        | (See Part Number Guide for Options)                      |
| Storage Temperature                | -40°C to +85°C   |
| Aging                              | ±5ppm per first year max                                 |
| Shunt Capacitance                  | 5pF Max  |
| Load Capacitance                   | 12.5pF Standard<br>(See Part Number Guide for Options)   |
| Equivalent Series Resistance (ESR) | See ESR Chart  |
| Mode of Operation                  | Fundamental or 3 <sup>rd</sup> OT                        |
| Drive Level                        | 10µW to 100µW recommended, 2mW Max                       |
| Insulation Resistance              | 500 Megaohms Min at 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) |

## Environmental & Mechanical Detail

|                    |                                   |
|--------------------|-----------------------------------|
| Shock              | MIL-STD-883, Method 2002 Cond B   |
| Solderability      | MIL-STD-883, Method 2003          |
| Solvent Resistance | MIL-STD-202, Method 215           |
| Vibration          | MIL-STD-883, Method 2007, Cond A  |
| Gross Leak Test    | MIL-STD-883, Method 1014, Cond C  |
| Fine Leak Test     | MIL-STD-883, Method 1014, Cond A2 |
| MSL                | Level 1 per IPC/JEDEC J-STD 20    |

## Marking Detail

Line 1 = Frequency



**MMD Monitor/Quartztek**  
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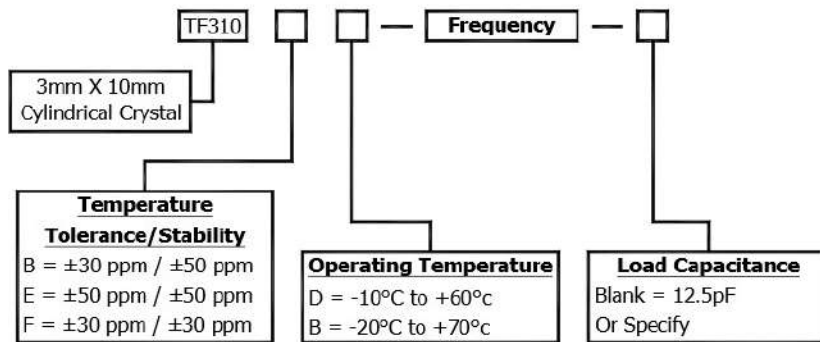
Revision: TF310091310D

Specifications are subject to change without notice.

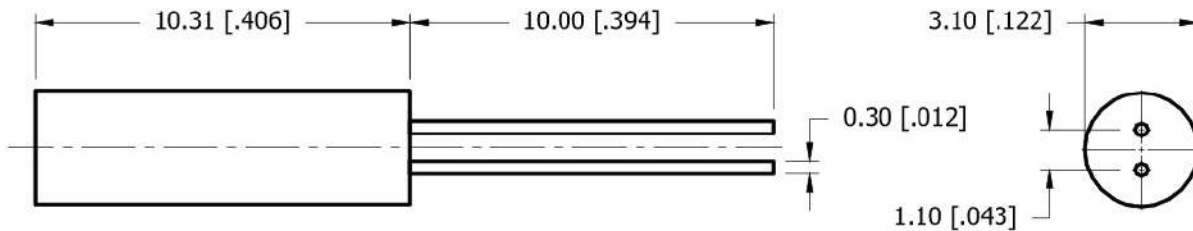
## ESR Chart

| Frequency Range        | ESR (Ohms) | Mode / Cut            |
|------------------------|------------|-----------------------|
| 3.57954MHz to 5.299MHz | 150 Max    | Fund / AT             |
| 5.500MHz to 5.999MHz   | 100 Max    | Fund / AT             |
| 6.000MHz to 9.999MHz   | 80 Max     | Fund / AT             |
| 10.000MHz to 11.999MHz | 60 Max     | Fund / AT             |
| 12.000MHz to 15.999MHz | 50 Max     | Fund / AT             |
| 16.000MHz to 36.000MHz | 40 Max     | Fund / AT             |
| 26.000MHz to 36.000MHz | 100 Max    | 3 <sup>rd</sup> OT/AT |
| 36.000MHz to 65.000MHz | 80 Max     | 3 <sup>rd</sup> OT/AT |

## Part Number Guide



## Mechanical Details



DIMENSION IN BRACKETS ARE IN INCHES



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