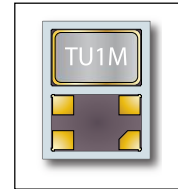


# TU1M Crystal Resonator



**FEATURES:**

**Tight Tolerance  
High Reliability and Precision**

**Seam Sealed Lid  
5.0 x 3.2 x 1.0 mm**

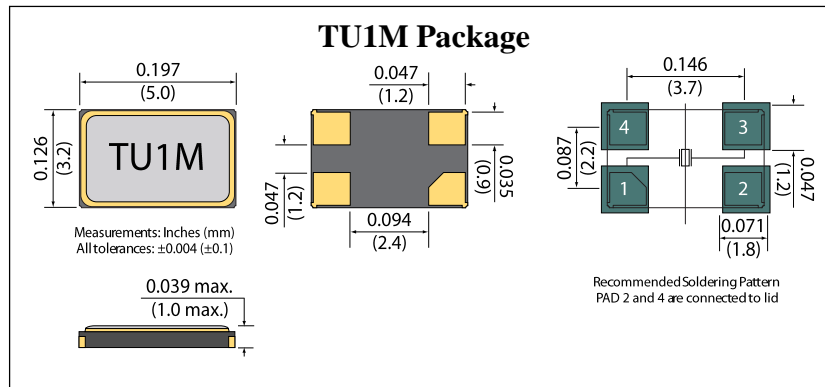
| Parameter                           | Unit | Min.      | Typ. | Max.    |
|-------------------------------------|------|-----------|------|---------|
| Frequency Range (FR)                | MHz  | 8.000     | -    | 150.000 |
| Operating Temperature Range         | °C   | See Table |      |         |
| Frequency Tolerance at 25°C         | ppm  | ±10       | -    | ±50     |
| Frequency Stability                 | ppm  | See Table |      |         |
| Load Capacitance (C <sub>L</sub> )  | pF   | 6         | -    | 32      |
| Shunt Capacitance (C <sub>0</sub> ) | pF   | -         | -    | 7       |
| Equivalent Series Resistance (R)    | Ohms | See Table |      |         |
| Drive Level                         | µW   | 10        | -    | 100     |
| Aging first year                    | ppm  | -         | -    | ±5.0    |
| Storage Temperature Range           | °C   | -40       | -    | +85     |

| Frequency (MHz)          | ESR (Ohms) max. |
|--------------------------|-----------------|
| Fundamental Mode         |                 |
| 8.000 to 10.000          | 100             |
| >10.000 to 12.000        | 80              |
| >12.000 to 20.000        | 60              |
| >20.000 to 50.000        | 40              |
| 3 <sup>rd</sup> Overtone |                 |
| >40.000 to 150.000       | 80              |

| Temperature  | Stability (ppm)              |
|--------------|------------------------------|
| -10 to +60°C | ±10, ±15, ±20, ±25, ±30, ±50 |
| -20 to +70°C | ±10, ±15, ±20, ±25, ±30, ±50 |
| -40 to +85°C | ±15, ±20, ±25, ±30, ±50      |

**Environmental**

|                    |       |
|--------------------|-------|
| Terminal Material  | W     |
| Terminal Plating   | Ni-Au |
| REACH Compliant    | Yes   |
| RoHS Compliant     | Yes   |
| RoHS Exemptions    | No    |
| Re-flow Temp. Max. | 260°C |
| MSL                | 1     |



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**Example Part Number:** TU1M-D-E-16-18-25M576

TU1M -  -  -  -  -

|                  |                  |                    |                  |                         |
|------------------|------------------|--------------------|------------------|-------------------------|
| <b>1</b>         | <b>2</b>         | <b>3</b>           | <b>4</b>         | <b>5</b>                |
| <b>Tolerance</b> | <b>Stability</b> | <b>Temp. Range</b> | <b>Load Cap.</b> | <b>Frequency</b>        |
| A = ±50          | A = ±50          | 16 = -10 to +60°C  | AA = Series      | Frequency in MHz        |
| B = ±30          | B = ±30          | 27 = -20 to +70°C  | xx = Load        | i.e. 25M456             |
| C = ±25          | C = ±25          | 48 = -40 to +85°C  | i.e. 16, 24, 32  | use M for decimal point |
| D = ±20          | D = ±20          |                    |                  |                         |
| E = ±15          | E = ±15          |                    |                  |                         |
| F = ±10          | F = ±10          |                    |                  |                         |

Note: Consult factory for additional potential options not listed.