

## SPECIFICATION FOR RoHS 6 COMPLIANT SMT CRYSTAL MtronPTI Part Number M1253S220

### Electrical Specifications:

| Parameter             | Symbol         | Min.                 | Typ.      | Max. | Units   | Conditions                     |
|-----------------------|----------------|----------------------|-----------|------|---------|--------------------------------|
| Mode of Oscillation   |                | Fundamental (AT-Cut) |           |      |         |                                |
| Frequency             | F <sub>0</sub> |                      | 48.000000 |      | MHz     | Nominal Center Frequency       |
| Frequency Tolerance   | F/F            | -10                  |           | +10  | ppm     | @ +25°C                        |
| Frequency Stability   | ΔF/F           | -15                  |           | +15  | ppm     | Deviation over Operating Temp. |
| Aging                 |                | -5                   |           | +5   | ppm/yr  | @ +25°C                        |
| Load Capacitance      | C <sub>L</sub> |                      | 8         |      | pF      |                                |
| Shunt Capacitance     | C <sub>0</sub> |                      |           | 3    | pF      |                                |
| ESR                   |                |                      |           | 50   | Ω       |                                |
| Drive Level           | D <sub>L</sub> | 10                   | 100       | 300  | μW      |                                |
| Insulation Resistance | I <sub>R</sub> | 500                  |           |      | Megohms | 100 VDC                        |

### Environmental Conditions:

|                           |                                                                               |     |  |      |    |  |
|---------------------------|-------------------------------------------------------------------------------|-----|--|------|----|--|
| Operating Temperature     | T <sub>A</sub>                                                                | -40 |  | +85  | °C |  |
| Storage Temperature       | T <sub>S</sub>                                                                | -55 |  | +125 | °C |  |
| Mechanical Shock          | Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sinewave) |     |  |      |    |  |
| Vibration                 | Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)                    |     |  |      |    |  |
| Thermal Cycle             | Per MIL-STD-883, Method 1010, B (-55°C to 125°C, 15 min. dwell, 10 cycles)    |     |  |      |    |  |
| Hermeticity               | Per MIL-STD-202, Method 112 (1 x 10 <sup>-8</sup> atm cc/s of Helium)         |     |  |      |    |  |
| Solderability             | Per EIAJ-STD-002                                                              |     |  |      |    |  |
| Max. Soldering Conditions | See solder profile, Figure 1                                                  |     |  |      |    |  |
| Termination finish        | 0.3 to 1.0 micrometers of gold                                                |     |  |      |    |  |

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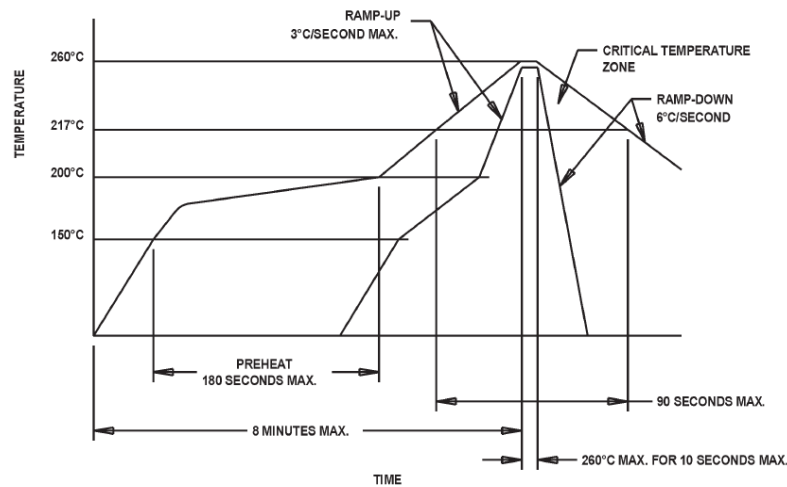
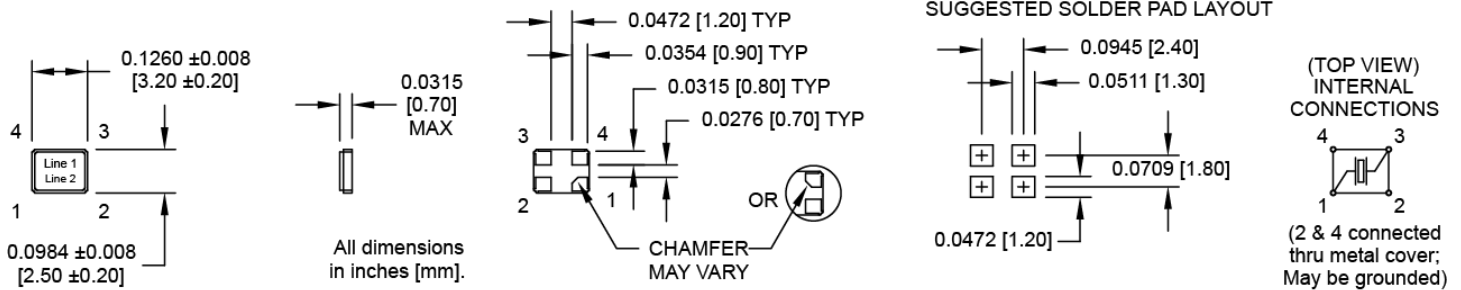
### MtronPTI Part Number M1253S220

#### Dimensions, Marking, and Pin Out Information:

| Pad | Function       |
|-----|----------------|
| 1   | Input / Output |
| 2   | Cover / Ground |
| 3   | Input / Output |
| 4   | Cover / Ground |

| Part Marking |            |
|--------------|------------|
| Line 1       | 48M0000    |
| Line 2       | M B y ww v |

| Line 2 Legend |               |
|---------------|---------------|
| M             | MtronPTI      |
| B             | Part Series   |
| y             | Year          |
| ww            | Work Week No. |
| v             | Factory code  |



#### DATA SHEET REVISION TABLE:

| Date     | Rev. | Author | Details of Revision                      |
|----------|------|--------|------------------------------------------|
| 08-06-19 | B    | BRR    | Frequency Tolerance & Stability updated. |
| 07-24-19 | A    | BRR    | Preliminary Release                      |