

## SPECIFICATION FOR RoHS 6 COMPLIANT SMT TCXO

### MtronPTI P/N M6164S020

#### Electrical Specifications:

| Parameter                                     | Symbol          | Min.   | Typ.      | Max.  | Units             | Conditions  |
|---|-----------------|--|-----------|-------|-------------------|---|
| Frequency of Operation                        | F <sub>O</sub>  |  | 32.000000 |       | MHz               |   |
| Frequency Tolerance                           |                 | -1.0   |           | +1.0  | ppm               | @ +25°C   |
| <b>Frequency Stabilities</b>                  |                 |  |           |       |                   |   |
| vs Temperature                                | ΔF/F            |  |           | 0.5   | ppm               | (F <sub>MAX</sub> -F <sub>MIN</sub> )/2<br>Over operating temperature range |
| vs Aging                                      |                 | -2.0   |           | +2.0  | ppm               | 1 <sup>st</sup> year  |
| Frequency vs. Supply                          | F <sub>VS</sub> |  | ± 0.02    | ± 0.1 | ppm               | For 5% voltage change   |
| Frequency vs. Load                            | F <sub>L</sub>  |  | ± 0.02    | ± 0.1 | ppm               | For 5% load change  |
| <b>Output</b>                                 |                 |  |           |       |                   |   |
| Output Type                                   |                 | HCMOS Compatible   |           |       |                   |   |
| Output Load                                   |                 |  |           | 15    | pF                |   |
| Symmetry (duty cycle)                         | T <sub>DC</sub> | 40   | 50        | 60    | %                 | @ 50% of VDD  |
| Output Logic Levels                           | V <sub>OL</sub> |  |           | 20    | % V <sub>CC</sub> |   |
| Output Level                                  | V <sub>OH</sub> | 80   |           |       | % V <sub>CC</sub> |   |
| Rise/Fall Time                                |                 |  |           | 6.5   | nS                | Ref. 10% and 90%  |
| Tri-state Function                            |                 | Logic "1", or floating, output Enabled.<br>Logic "0", output Disabled. |           |       |                   | Pad 8   |
| Start-up Time                                 | T <sub>SU</sub> |  |           | 10    | mS                |   |
| <b>Additional Specifications</b>              |                 |  |           |       |                   |   |
| SSB Phase Noise<br>(Under Static Conditions)  |                 |  | -90       |       | dBc/Hz            | @ 10Hz Offset   |
|   |                 |  | -118      |       |                   | @ 100Hz Offset  |
|   |                 |  | -140      |       |                   | @ 1kHz Offset   |
|   |                 |  | -154      |       |                   | @ 10kHz Offset  |
|   |                 |  | -158      |       |                   | @ 100kHz Offset   |
|   |                 |  | -158      |       |                   | @ 1MHz Offset   |
| G-sensitivity                                 |                 |  | 0.6       |       | ppb/g             |   |
| <b>Supply Voltage &amp; Power Consumption</b> |                 |  |           |       |                   |   |
| Operating Voltage                             | V <sub>DD</sub> | 3.135  | 3.3       | 3.465 | V <sub>DC</sub>   |   |
| Operating Current                             | I <sub>DD</sub> |  |           | 5     | mA                |   |

#### Environmental & Mechanical Requirements:

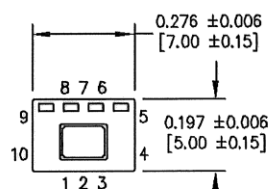
|                           |  |     |  |      |    |  |
|---------------------------|--|-----|--|------|----|--|
| Operating Temperature     | T <sub>A</sub>   | -40 |  | +85  | °C |  |
| Storage Temperature       | T <sub>S</sub>   | -55 |  | +125 | °C |  |
| Mechanical Shock          | Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sine wave) |     |  |      |    |  |
| Vibration                 | Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)                     |     |  |      |    |  |
| Solderability             | Per MIL-STD-202, Method 208, except steam aging is not required                |     |  |      |    |  |
| Max. Soldering Conditions | See solder profile, Figure 1   |     |  |      |    |  |
| Package Type              | 5.0 x 7.0 x 1.6mm, 10-pad Ceramic Leadless Chip Carrier. RoHS Compliant.       |     |  |      |    |  |

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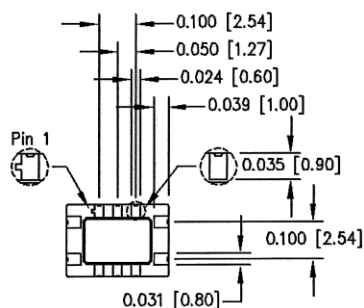
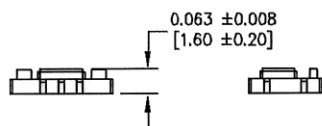
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#### Mechanical, Marking and Layout Information:

| Pad | Function         |
|-----|------------------|
| 1   | N/C              |
| 2   | N/C              |
| 3   | N/C              |
| 4   | Ground/Case      |
| 5   | Output           |
| 6   | N/C              |
| 7   | N/C              |
| 8   | Tristate         |
| 9   | +V <sub>DD</sub> |
| 10  | N/C              |



All dimensions  
in inches [mm].



#### SUGGESTED SOLDER PAD LAYOUT

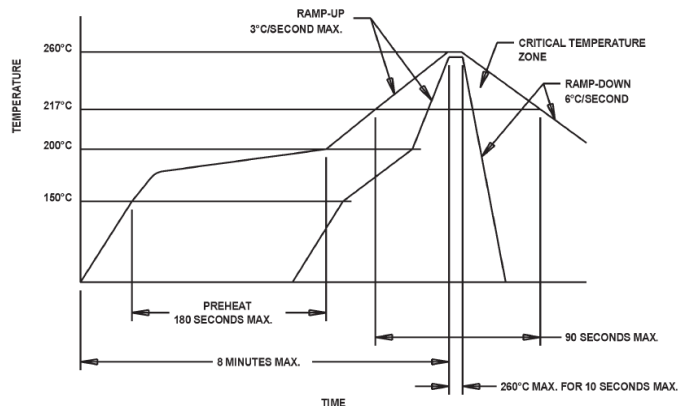
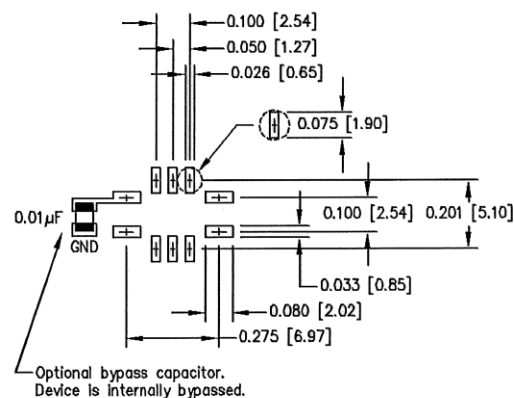


Figure 1

#### Data Sheet Revision Table:

| Date    | Rev. | Author | Details of Revision |
|---------|------|--------|---------------------|
| 10/1/14 | 0    | MM     | Original Release.   |