

## SPECIFICATION FOR SMT TCVCXO

### MtronPTI P/N M6101S025

#### Electrical Specifications:

| Parameter                                     | Symbol          | Min.                                                                   | Typ.      | Max.               | Units  | Conditions                                                                                                                                                          |
|-----------------------------------------------|-----------------|------------------------------------------------------------------------|-----------|--------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency of Operation                        | F <sub>o</sub>  |                                                                        | 10.000000 |                    | MHz    |                                                                                                                                                                     |
| Design                                        |                 | Must use Next Generation TCXO Design                                   |           |                    |        |                                                                                                                                                                     |
| Crystal                                       |                 | Must use 20 MHz Crystal                                                |           |                    |        |                                                                                                                                                                     |
| Frequency Holdover Stability Over Temperature | ΔF/F            | -0.28                                                                  |           | +0.28              | ppm    |                                                                                                                                                                     |
| Frequency Holdover                            |                 | -0.32                                                                  |           | +0.32              | ppm    | For 24 hrs. over operating temperature.                                                                                                                             |
| Overall Stability                             |                 | -4.6                                                                   |           | +4.6               | ppm    | Includes initial calibration, operating temperature, supply voltage and load variations, shock, vibration, reflow, and 20 yr. aging at +40°C operating temperature. |
| Operating Temperature                         | T <sub>A</sub>  | -40                                                                    |           | +85                | °C     |                                                                                                                                                                     |
| Storage Temperature                           | T <sub>S</sub>  | -55                                                                    |           | +125               | °C     |                                                                                                                                                                     |
| Operating Voltage                             | V <sub>S</sub>  | 3.135                                                                  | 3.3       | 3.465              | V      |                                                                                                                                                                     |
| Operating Current                             | I <sub>S</sub>  |                                                                        | 2.8       | 5.0                | mA     |                                                                                                                                                                     |
| Output Type                                   |                 | HCMOS Compatible                                                       |           |                    |        |                                                                                                                                                                     |
| Output Logic Levels                           | V <sub>OL</sub> | 10% V <sub>S</sub>                                                     |           |                    | V      |                                                                                                                                                                     |
|                                               | V <sub>OH</sub> |                                                                        |           | 90% V <sub>S</sub> |        |                                                                                                                                                                     |
| Rise/Fall Time                                |                 |                                                                        |           | 8                  | ns     | Ref. 10% and 90%                                                                                                                                                    |
| Symmetry                                      |                 | 45                                                                     |           | 55                 | %      | Ref. to ½ V <sub>S</sub>                                                                                                                                            |
| Frequency Adjust Range                        |                 | ± 4                                                                    |           |                    | ppm    | Over Control Voltage Range. Pad 10.                                                                                                                                 |
| Control Voltage Range                         |                 | 0.3                                                                    | 1.65      | 3.0                | V      | Pad 10                                                                                                                                                              |
| Linearity                                     |                 | -3                                                                     |           | + 3                | %      | Positive slope. Pad 10                                                                                                                                              |
| Input Leakage Current                         |                 | -50                                                                    |           | +50                | μA     | Pad 10                                                                                                                                                              |
| Input Resistance                              |                 | 100                                                                    |           |                    | kΩ     | Pad 10                                                                                                                                                              |
| Modulation Bandwidth                          |                 | 2                                                                      |           |                    | kHz    | Pad 10                                                                                                                                                              |
| Output Load                                   |                 |                                                                        |           | 15                 | pF     |                                                                                                                                                                     |
| Tri-state Function                            |                 | Logic "1", or floating, output Enabled.<br>Logic "0", output Disabled. |           |                    |        | Pad 8                                                                                                                                                               |
| Phase Noise                                   |                 |                                                                        | -98       |                    | dBc/Hz | @ 10 Hz                                                                                                                                                             |
|                                               |                 |                                                                        | -125      |                    | dBc/Hz | @ 100 Hz                                                                                                                                                            |
|                                               |                 |                                                                        | -145      |                    | dBc/Hz | @ 1 kHz                                                                                                                                                             |
|                                               |                 |                                                                        | -153      |                    | dBc/Hz | @ 10 kHz                                                                                                                                                            |
|                                               |                 |                                                                        | -154      |                    | dBc/Hz | @ 100 kHz                                                                                                                                                           |
|                                               |                 |                                                                        | -156      |                    | dBc/Hz | @ 1 MHz                                                                                                                                                             |
|                                               |                 |                                                                        | -158      |                    | dBc/Hz | @ 5 MHz                                                                                                                                                             |

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### Environmental & Mechanical Requirements:

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| Mechanical Shock          | Per MIL-STD-202, Method 213, Condition C.                              |
| Vibration                 | Per MIL-STD-202, Methods 201 & 204, Condition C, 10g's from 55-2000 Hz |
| Solderability             | Per EIAJ-STD-002                                                       |
| Max. Soldering Conditions | See Figure 1.                                                          |
| Package Type              | 5 X 7 X 2 mm, 10-pad leadless ceramic. RoHS compliant.                 |

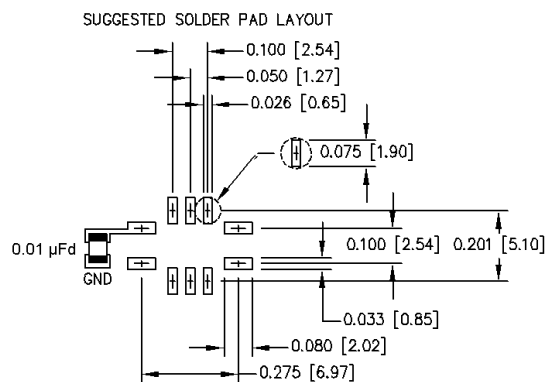
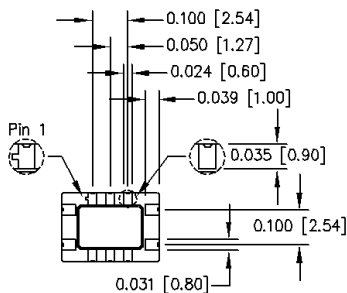
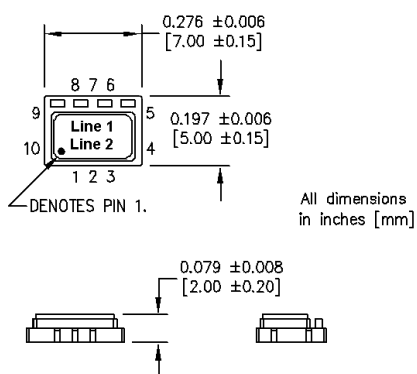
### Pin Out, and Marking Information:

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

| Part Marking |          |
|--------------|----------|
| Line 1       | M6101 ym |
| Line 2       | 10M000   |

| Legend |       |
|--------|-------|
| Y      | Year  |
| m      | Month |

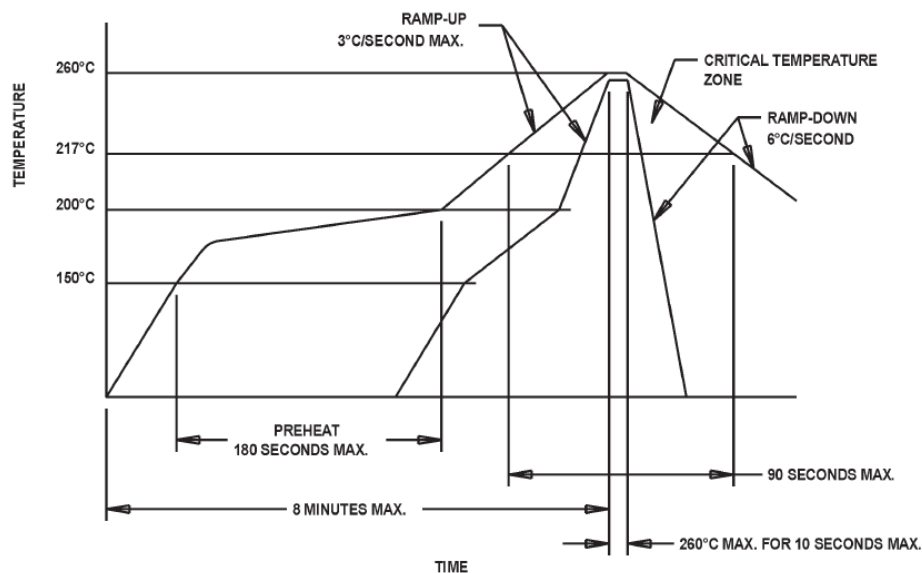
### Mechanical, Dimensions and Layout Information:





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**Figure1**

#### DATA SHEET REVISION TABLE:

| Date     | Rev. | Author | Details of Revision                              |
|----------|------|--------|--------------------------------------------------|
| 08/02/10 | 0    | MM     | Original release.                                |
| 07/03/12 | A    | LEO    | Updated vibration spec. Minor updates to layout. |
| 10/20/17 | B    | MM     | Removed preliminary marking.                     |