

## GTXO-C73 - 3.3 & 5V Stratum 3 CMOS TCXO

| Sub-Assembly      | Material           | Substance                                | CAS No     | Mass (mg) | Sub-Assembly % by mass |
|-------------------|--------------------|--|------------|-----------|------------------------|
| <b>Adhesive</b>   | Adhesive           | amorphous silicon                        | 7631-86-9  | 2.400     | 58.77                  |
|                   | Adhesive           | Hexthylhexahydrophthalic                 | 25550-51-0 | 0.200     | 4.90                   |
|                   | Adhesive           | amorphous silicon                        | 7631-86-9  | 0.200     | 4.90                   |
|                   | Adhesive           | Epoxy resin trade secret                 | 0          | 0.280     | 6.86                   |
|                   | Adhesive           | Carbon black                             | 1333-86-4  | 0.004     | 0.10                   |
|                   | Ag                 | Ag                                       | 7440-22-4  | 0.750     | 18.36                  |
|                   | Resin              | Epoxy resin trade secret                 | 0          | 0.250     | 6.12                   |
| <b>Base</b>       | Base Metalisation  | W  | 7440-33-7  | 7.270     | 7.24                   |
|                   | Ceramic            | Al <sub>2</sub> O <sub>3</sub>           | 1344-28-1  | 82.503    | 82.11                  |
|                   | Ceramic            | Cr <sub>2</sub> O <sub>3</sub> (Non hex) | 1308-38-9  | 3.667     | 3.65                   |
|                   | Ceramic            | SiO <sub>2</sub>                         | 14808-60-7 | 3.667     | 3.65                   |
|                   | Ceramic            | TiO <sub>2</sub>                         | 13463-67-7 | 1.833     | 1.82                   |
|                   | Plate              | Ni                                       | 7440-02-0  | 1.130     | 1.12                   |
|                   | Plate              | Au                                       | 7440-57-5  | 0.410     | 0.41                   |
| <b>Capacitors</b> | Ceramic            | BaTiO <sub>3</sub>                       | 12047-27-7 | 2.440     | 76.25                  |
|                   | Electrode material | Ni                                       | 7440-02-0  | 0.100     | 3.13                   |
|                   | Electrode material | Cu                                       | 7440-50-8  | 0.480     | 15.00                  |
|                   | Plate              | Ni                                       | 7440-02-0  | 0.060     | 1.88                   |
|                   | Plate              | Sn                                       | 7440-31-5  | 0.120     | 3.75                   |
| <b>Crystal</b>    | Adhesive           | Ag                                       | 7440-22-4  | 0.640     | 0.96                   |
|                   | Adhesive           | SiO <sub>2</sub>                         | 14808-60-7 | 0.080     | 0.12                   |
|                   | Adhesive           | Silicon Resin                            | 7631-86-9  | 0.080     | 0.12                   |
|                   | Base Metalisation  | W  | 7440-33-7  | 5.650     | 8.45                   |
|                   | Base Pin           | Fe                                       | 7439-89-6  | 2.878     | 4.31                   |
|                   | Base Pin           | Ni                                       | 7440-02-0  | 1.575     | 2.36                   |
|                   | Base Pin           | Co                                       | 7440-48-4  | 0.977     | 1.46                   |
|                   | Base Plate         | Au                                       | 7440-57-5  | 0.240     | 0.36                   |
|                   | Base Plate         | Ni                                       | 7440-02-0  | 0.880     | 1.32                   |
|                   | Base ceramic       | Al <sub>2</sub> O <sub>3</sub>           | 1344-28-1  | 34.758    | 52.01                  |
|                   | Base ceramic       | SiO <sub>2</sub>                         | 14808-60-7 | 2.317     | 3.47                   |
|                   | Base ceramic       | Cr <sub>2</sub> O <sub>3</sub> (Non hex) | 1308-38-9  | 0.772     | 1.16                   |
|                   | Base ceramic       | Mo                                       | 7439-98-7  | 0.772     | 1.16                   |
|                   | Blank              | SiO <sub>2</sub>                         | 14808-60-7 | 1.200     | 1.80                   |
|                   | Electrode material | Ni                                       | 7440-02-0  | 0.030     | 0.04                   |
|                   | Electrode material | Au                                       | 7440-57-5  | 0.270     | 0.40                   |
|                   | Kovar Lid          | Fe                                       | 7439-89-6  | 5.999     | 8.98                   |
|                   | Kovar Lid          | Ni                                       | 7440-02-0  | 4.469     | 6.69                   |
|                   | Kovar Lid          | Co                                       | 7440-48-4  | 0.053     | 0.08                   |
|                   | Kovar Lid          | Mn                                       | 7439-96-5  | 0.085     | 0.13                   |
|                   | Kovar Lid          | Si                                       | 7440-21-3  | 0.032     | 0.05                   |
|                   | Kovar Lid          | C  | 7440-44-0  | 0.002     | 0.00                   |
|                   | Lid plate          | Ni                                       | 7440-02-0  | 0.690     | 1.03                   |

# Material Composition Data



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| Sub-Assembly       | Material          | Substance         | CAS No    | Mass (mg)         | Sub-Assembly % by mass |
|--------------------|-------------------|-------------------|-----------|-------------------|------------------------|
| Crystal            | Solder            | Ag                | 7440-22-4 | 1.690             | 2.53                   |
|                    | Solder            | Cu                | 7440-50-8 | 0.690             | 1.03                   |
| IC                 | IC                | Si                | 7440-21-3 | 1.994             | 99.70                  |
|                    | IC                | Al                | 7429-90-5 | 0.006             | 0.30                   |
| Solder             | Antimony          | Sb                | 7440-36-0 | 0.130             | 4.33                   |
|                    | Flux trade secret | Flux trade secret | 0         | 0.330             | 11.00                  |
|                    | Tin               | Sn                | 7440-31-5 | 2.540             | 84.67                  |
| Wire               | Gold              | Au                | 7440-57-5 | 0.100             | 100.00                 |
| <b>Total Mass:</b> |                   |                   |           | <b>179.693 mg</b> |                        |

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