

**LINEAR TECHNOLOGY MATERIALS DECLARATION**

1t1086ct-3.3#pbf

(Engineering Calculation)

TO-220

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**TOTAL MASS (g) : 1.893522**

| COMPONENT MATERIAL       | VENDOR/ INDUSTRY NAMES          | CONSTITUENT NAME               | CAS NUMBER | CONSTITUENT MASS (g) | CONSTITUENT (PPM) OF MATERIAL | CONSTITUENT (PPM) OF TOTAL PKG. |                |                      |
|--------------------------|---------------------------------|--------------------------------|------------|----------------------|-------------------------------|---------------------------------|----------------|----------------------|
| Active Device            | Linear Technology               | Silicon (Si)                   | 7440-21-3  | 0.004012             | 1000000                       | 2118.80297852                   |                |                      |
| Die Coat                 | Dow Corning                     | Silicone                       | 69430-27-9 | 0.000000             | 0                             | 0                               |                |                      |
| Lead Frame               | Cu                              | Copper (Cu)                    | 7440-50-8  | 1.327316             | 998500                        | 700977.375                      |                |                      |
|                          |                                 | Iron (Fe)                      | 7439-89-6  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Phosphorus (P)                 | 7723-14-0  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Zinc (Zn)                      | 7440-66-6  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Nickel (Ni)                    | 7440-02-0  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Silicon (Si)                   | 7440-21-3  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Magnesium (Mg)                 | 7439-95-4  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Tin (Sn)                       | 7440-31-5  | 0.001994             | 1500                          | 1053.06408691                   |                |                      |
| <b>Lead Frame Total:</b> |                                 |                                |            | <b>1.329310</b>      | <b>1000000</b>                | <b>702030.5</b>                 |                |                      |
| Plating                  | PMI                             | Exter. Plating Pb              | 7439-92-1  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Exter. Plating Sn              | 7440-31-5  | 0.010641             | 1000000                       | 5619.63818359                   |                |                      |
|                          |                                 | <b>External Plating Total:</b> |            |                      |                               | <b>0.010641</b>                 | <b>1000000</b> | <b>5619.63818359</b> |
|                          |                                 | Inter. Plating Ni              | 7440-02-0  | 0.009000             | 826446.25                     | 4753.04736328                   |                |                      |
|                          |                                 | Inter. Plating Ag              | 7440-22-4  | 0.001890             | 173553.71875                  | 998.139953613                   |                |                      |
|                          |                                 | <b>Internal Plating Total:</b> |            |                      |                               | <b>0.010890</b>                 | <b>1000000</b> | <b>5751.1875</b>     |
| Die Attach               | 95Pb / 5 Sn                     | Silver (Ag)                    | 7440-22-4  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Tin (Sn)                       | 7440-31-5  | 0.000098             | 50000                         | 51.755405426                    |                |                      |
|                          |                                 | Lead (Pb)                      | 7439-92-1  | 0.001853             | 950000                        | 978.59979248                    |                |                      |
|                          |                                 | Silica (SiO2)                  | 60676-86-0 | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Indium (In)                    | 7440-74-6  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Metal Oxide                    |            | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Antimony (Sb)                  | 7440-36-0  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Resin (EP)                     |            | 0.000000             | 0                             | 0                               |                |                      |
| <b>Die Attach Total:</b> |                                 |                                |            | <b>0.001951</b>      | <b>1000000</b>                | <b>1030.35510254</b>            |                |                      |
| Encapsulation            | MULTI-AROMATIC RESIN Br/Sb FREE | Resin (EP)                     |            | 0.055248             | 103000                        | 29177.375                       |                |                      |
|                          |                                 | Bromine (Br)                   | 40039-93-8 | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Silica (SiO2)                  | 60676-86-0 | 0.480069             | 895000                        | 253532.3125                     |                |                      |
|                          |                                 | Antimony Trioxide (Sb2O3)      | 1309-64-4  | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Metal Hydroxide                |            | 0.000000             | 0                             | 0                               |                |                      |
|                          |                                 | Carbon Black (C)               | 1333-86-4  | 0.001073             | 2000                          | 566.668945312                   |                |                      |
|                          |                                 | <b>Encapsulation Total:</b>    |            |                      |                               | <b>0.536390</b>                 | <b>1000000</b> | <b>283276.375</b>    |
| Bond Wire Estimated      | AFW/TANAKA/ Kn                  | Gold (Au)                      | 7440-57-5  | 0.000328             | 1000000                       | 173.222183228                   |                |                      |
|                          |                                 |                                |            |                      | <b>TOTAL MASS (g) :</b>       | <b>1.893522</b>                 |                |                      |