

# LINEAR TECHNOLOGY MATERIALS DECLARATION

LT4320MPMSE#PBF

(Engineering Calculation)

MSOP-Exposed

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**TOTAL MASS (g): 0.037398**

| 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  | 0.002383             | 1000000                       | 63719.9414062                   |                |                      |
| Die Coat           | Dow Corning                      | Silicone                       | 69430-27-9 | 0.000000             | 0                             | 0                               |                |                      |
| Lead Frame         | Cu                               | Copper (Cu)                    | 7440-50-8  | 0.013845             | 975000                        | 370206.71875                    |                |                      |
|                    |                                  | Iron (Fe)                      | 7439-89-6  | 0.000341             | 24000                         | 9118.12890625                   |                |                      |
|                    |                                  | Phosphorus (P)                 | 7723-14-0  | 0.000004             | 300                           | 106.957511902                   |                |                      |
|                    |                                  | Zinc (Zn)                      | 7440-66-6  | 0.000010             | 700                           | 267.393798828                   |                |                      |
|                    |                                  | 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  | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | <b>Lead Frame Total:</b>       |            |                      |                               | <b>0.014200</b>                 | <b>1000000</b> | <b>379699.1875</b>   |
| Plating            | PMI                              | Exter. Plating Pb              | 7439-92-1  | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | Exter. Plating Sn              | 7440-31-5  | 0.000710             | 1000000                       | 18985.6269531                   |                |                      |
|                    |                                  | <b>External Plating Total:</b> |            |                      |                               | <b>0.000710</b>                 | <b>1000000</b> | <b>18985.6269531</b> |
|                    |                                  | Inter. Plating Ni              | 7440-02-0  | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | Inter. Plating Ag              | 7440-22-4  | 0.000086             | 1000000                       | 2299.58642578                   |                |                      |
|                    |                                  | <b>Internal Plating Total:</b> |            |                      |                               | <b>0.000086</b>                 | <b>1000000</b> | <b>2299.58642578</b> |
| Die Attach         | ELECTRICALLY CONDUCTIVE ADHESIVE | Silver (Ag)                    | 7440-22-4  | 0.000774             | 750000                        | 20696.28125                     |                |                      |
|                    |                                  | Tin (Sn)                       | 7440-31-5  | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | Lead (Pb)                      | 7439-92-1  | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | 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)                     |            | 0.000258             | 250000                        | 6898.75927734                   |                |                      |
|                    |                                  | <b>Die Attach Total:</b>       |            |                      |                               | <b>0.001032</b>                 | <b>1000000</b> | <b>27595.0371094</b> |
| Encapsulation      | MULTI-AROMATIC RESIN Br/Sb FREE  | Resin (EP)                     |            | 0.001932             | 103000                        | 51660.4804688                   |                |                      |
|                    |                                  | Bromine (Br)                   | 40039-93-8 | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | Silica (SiO2)                  | 60676-86-0 | 0.016790             | 895000                        | 448954.1875                     |                |                      |
|                    |                                  | Antimony Trioxide (Sb2O3)      | 1309-64-4  | 0.000000             | 0                             | 0                               |                |                      |
|                    |                                  | Metal Hydroxide                |            | 0.000000             | 0                             | 0                               |                |                      |

|                            |                |                             |           |                        |                |                      |
|----------------------------|----------------|-----------------------------|-----------|------------------------|----------------|----------------------|
|                            |                | Carbon Black (C)            | 1333-86-4 | 0.000038               | 2000           | 1016.09631348        |
|                            |                | <b>Encapsulation Total:</b> |           | <b>0.018760</b>        | <b>1000000</b> | <b>501630.71875</b>  |
| <b>Bond Wire Estimated</b> | AFW/TANAKA/ Kn | Gold (Au)                   | 7440-57-5 | <b>0.000227</b>        | <b>1000000</b> | <b>6069.83886719</b> |
|                            |                |                             |           | <b>TOTAL MASS (g):</b> |                | <b>0.037398</b>      |