



Material Declaration Sheet

Vishay General Semiconductor - PDD

Date 29-Jul-2022

Part / Product Family Details

| Vishay Part Number | RoHS Compliance Status | RoHS Compliance Date Code dd-mm-yyyy | Total product Weight (gm) | Resistance value | 3rd Party Lab ICP Test Report Available | Manufacturing Location | Number of Exemptions Used |
|-------------------------|------------------------|--------------------------------------|---------------------------|------------------|---|------------------------|---------------------------|
| 5KPXX(A) HE3/-E3 suffix | YES WITH EXEMPTION | 01-12-2004 | 2.776 | N/A | Yes | Taiwan | Two |

Technical Information: refer to <http://www.vishay.com/how/leadfree/#summary>

| Terminal Plating / Grid Array Material | Terminal Base Alloy | JESD-97 Pb-Free Material Code Marking | J-STD-20D MSL Rating | Reflow Peak Process Body Temperature | Reflow Maximum number of cycles | Reflow Max.Time at Peak Temperature (sec) | Soldering Compatibility (SnPb/Pb-Free) |
|--|---------------------|---------------------------------------|----------------------|--------------------------------------|---------------------------------|---|--|
| | | | | | | | |

Material Composition

| Homogenous Material Name | Material Classification | Substance Name | CAS number | Weight of Substance (gm) | With respect to Homogenous Material | | % with respect to Total Product Weight | RoHS Exemptions Used |
|--------------------------|---|--|-------------|--------------------------|-------------------------------------|---------|--|----------------------|
| | | | | | % | ppm | | |
| Chip | Electronics (e.g. pc boards, displays) | Silicon and others (business secret) | - | 0.01960 | 100.00 | 1000000 | 0.7061% | Exemption No: 7(c)-I |
| Lead Wire | Copper (e.g. copper amounts in cable harnesses) | Copper | 7440-50-8 | 0.61300 | 100.00 | 1000000 | 22.0821% | |
| Copper Slug | Copper alloys | Copper | 7440-50-8 | 0.77615 | 99.99 | 999900 | 27.9595% | |
| | | Nickel (Ni) | 7440-02-0 | 0.00008 | 0.01 | 100 | 0.0028% | |
| Solder 92.5 | Other special metals | Lead | 7439-92-1 | 0.03339 | 92.50 | 925000 | 1.2029% | Exemption No: 7(a) |
| | | Tin | 7440-31-5 | 0.00181 | 5.00 | 50000 | 0.0650% | |
| | | Silver | 7440-22-4 | 0.00090 | 2.50 | 25000 | 0.0325% | |
| Encapsulation | Other duromers | Silica, Vitreous | 60676-86-0 | 0.91217 | 70.00 | 700000 | 32.8591% | |
| | | Epichlorohydrin, o-cresol, formalde polymer | 29690-82-2 | 0.18243 | 14.00 | 140000 | 6.5718% | |
| | | Phenol-formaldehyde resin | 9003-35-4 | 0.15639 | 12.00 | 120000 | 5.6336% | |
| | | Antimony oxide (Sb2-O3) | 1309-64-4 | 0.01955 | 1.50 | 15000 | 0.7041% | |
| | | TBBA-Epichlorohydrin Oligomer | 40039-93-8 | 0.01955 | 1.50 | 15000 | 0.7041% | |
| | | Carbon-Black | 1333-86-4 | 0.01303 | 1.00 | 10000 | 0.4694% | |
| Surface finish | Other special metals | Tin | 7440-31-5 | 0.02790 | 100.00 | 1000000 | 1.0050% | |
| Marking | Electronics (e.g. pc boards, displays) | 2-Propenic, polimer with 2-ethyl-2-(hydroxymethyl) | 53192-18-0 | 0.00003 | 65.00 | 650000 | 0.0012% | |
| | | 3-Methylbutyl 4-Dimethylaminobenzoate | 21245-01-2 | 0.00001 | 10.00 | 100000 | 0.0002% | |
| | | Aluminum | 7429-90-5 | 0.00001 | 15.00 | 150000 | 0.0003% | |
| | | 1-Hydroxycyclohexyl phenyl ketone | 947-19-3 | 0.00000 | 5.00 | 50000 | 0.0001% | |
| | | Silicon dioxide | 112945-52-5 | 0.00000 | 5.00 | 50000 | 0.0001% | |

EU-RoHS Directive-2011/65/EU MCV of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and MCV of 0.01% by mass cadmium

This MDS valid for List of PN's

Exemption Used : 7(a) - Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)

2nd Exemption Used 7(c)-I - Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound

Note : (i) All information is based on data received from our vendors & subjected to change without prior notice.
(ii) Substance weight are derived from MSDS.

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Vishay General Semiconductor - PDD
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