



# Material Declaration Sheet

Vishay General Semiconductor - PDD

Date 28/Jul/20

| Part / Product Family Details   |                        |   |                              |                  |  |                           |                              |
|---|------------------------|---|------------------------------|------------------|--|---------------------------|------------------------------|
| Vishay Part Number  | RoHS Compliance Status | RoHS Compliance Date Code<br>dd-mm-yyyy | Total product<br>Weight (gm) | Resistance value | 3rd Party Lab ICP Test<br>Report Available | Manufacturing<br>Location | Number of Exemptions<br>Used |
| P6SMBnn (A) - (H) E3<br>P6SMBnn (A) HE3_A<br>SM6TnnA - (H) E3<br>SMB10Jxxx (A) - (H) E3<br>SMBGxxx (A) - (H) E3<br>SMBJxxx (A) - (H) E3<br>SMZG3nnnA - (H) E3<br>SMZJ3nnnA - (H) E3<br>P6SMBnnC (A) - (H) E3<br>SM6TnnCA - (H) E3<br>SMB8JxxxC (A) - (H) E3<br>SMBGxxxC (A) - (H) E3<br>SMBJxxxC (A) - (H) E3<br>SMBZ59nnB - (H) E3<br>SMZG3nnnB - (H) E3<br>SMZJ3nnnB - (H) E3 | YES WITH EXEMPTION     | 01-12-2004                              | 0.093                        | N/A              | Yes  | China                     | Two                          |

| Technical Information: refer to <a href="http://www.vishay.com/how/leadfree/summary">http://www.vishay.com/how/leadfree/summary</a> |                     |  |                         |  |                                       |  |   |
|---|---------------------|--|-------------------------|--|---------------------------------------|--|---|
| Terminal Plating / Grid<br>Array Material   | Terminal Base Alloy | JESD-97 Pb-Free Material Code<br>Marking | J-STD-20D MSL<br>Rating | Reflow<br>Peak Process<br>Body Temperature | Reflow<br>Maximum<br>number of cycles | Reflow<br>Max. Time at Peak<br>Temperature (sec) | Soldering Compatibility<br>(SnPb/Pb-Free) |
|   |                     |  |                         |  |                                       |  |   |

| Material Composition     |   |   |            |                             |  |         |   |                      |
|--------------------------|---|---|------------|-----------------------------|--|---------|---|----------------------|
| Homogenous Material Name | Material Classification                         | Substance Name                              | CAS number | Weight of Substance<br>(gm) | With respect to<br>Homogenous Material |         | % with respect to<br>Total Product Weight | RoHS Exemptions Used |
|                          |   |   |            |                             | %                                      | ppm     |   |                      |
| Chip                     | Electronics (e.g. pc boards, displays)          | Silicon and others (business secret)        | -          | 0.00260                     | 100.00                                 | 1000000 | 2.80                                      | Exemption No:7(c)-I  |
| Lead Frame               | Copper (e.g. copper amounts in cable harnesses) | Copper                                      | 7440-50-8  | 0.03640                     | 100.00                                 | 1000000 | 39.14                                     |                      |
| Solder 92.5              | Other special metals                            | Lead  | 7439-92-1  | 0.00315                     | 92.50                                  | 925000  | 3.38                                      | Exemption No:7(a)    |
|                          |   | Tin   | 7440-31-5  | 0.00017                     | 5.00                                   | 50000   | 0.18                                      |                      |
|                          |   | Silver                                      | 7440-22-4  | 0.00008                     | 2.50                                   | 25000   | 0.09                                      |                      |
| Encapsulation            | Other duromers                                  | Quartz (SiO2)                               | 14808-60-7 | 0.03395                     | 70.00                                  | 700000  | 36.51                                     |                      |
|                          |   | Epichlorohydrin, o-cresol, formalde polymer | 29690-82-2 | 0.00776                     | 16.00                                  | 160000  | 8.35                                      |                      |
|                          |   | Phenol-formaldehyde resin                   | 9003-35-4  | 0.00582                     | 12.00                                  | 120000  | 6.26                                      |                      |
|                          |   | Antimony oxide (SB2-O3)                     | 1309-64-4  | 0.00049                     | 1.00                                   | 10000   | 0.52                                      |                      |
|                          |   | Carbon-Black                                | 1333-86-4  | 0.00012                     | 0.25                                   | 2500    | 0.13                                      |                      |
|                          |   | Additive & know-how                         | -          | 0.00036                     | 0.75                                   | 7500    | 0.39                                      |                      |
| Surface finish           | Other special metals                            | Tin   | 7440-31-5  | 0.00210                     | 100.00                                 | 1000000 | 2.26                                      |                      |

**EU-RoHS Directive-2015/863/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, Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

This MSDS 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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