



# Material Declaration Sheet

Vishay General Semiconductor - PDD

Date 19-Jul-2018

## 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
1N6478 to 1N6484 HE3/-E3 suffix	YES WITH EXEMPTION	01-12-2004	0.116	N/A	Yes	Taiwan	One

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 inorganic compounds	-	0.00060	100.00	1000000	0.52	
Molybdenum Slug	Other special metals	Molybdenum	7439-98-7	0.03020	100.00	1000000	26.03	
Glass Powder	Ceramics / glass	Boron Trioxide (B2O3)	1303-86-2	0.00274	33.00	3300000	2.36	
		Silicon oxide (SiO2)	7631-86-9	0.00062	7.45	74500	0.53	
		Zinc oxide (ZnO)	1314-13-2	0.00460	55.00	550000	3.97	
		Lead-monoxide	1317-36-8	0.00033	4.00	40000	0.29	Exemption No: 7(c)-I
		Cerium-dioxide	1306-38-3	0.00004	0.50	5000	0.04	
		Dibismuth-trioxide	1304-76-3	0.00000	0.05	500	0.00	
Copper Slug	Copper (e.g. copper amounts in cable harnesses)	Copper	7440-50-8	0.04690	100.00	1000000	40.43	
Solder 80	Other special metals	Copper	7440-50-8	0.00024	80.00	800000	0.21	
		Silver	7440-22-4	0.00005	15.00	150000	0.04	
		Phosphorus	7723-14-0	0.00002	5.00	50000	0.01	
Encapsulation	Other duromers	Quartz (SiO2)	14808-60-7	0.02030	70.00	700000	17.50	
		Epichlorohydrin, o-cresol, formalde polymer	29690-82-2	0.00465	16.00	160000	4.01	
		Phenol-formaldehyde resin	9003-35-4	0.00348	12.00	120000	3.00	
		Antimony oxide (Sb2-O3)	1309-64-4	0.00029	1.00	10000	0.25	
		Carbon-Black	1333-86-4	0.00007	0.25	2500	0.06	
		Additive & know-how	-	0.00022	0.75	7500	0.19	
Surface finish	Other special metals	Tin	7440-31-5	0.00060	100.00	1000000	0.52	
Marking	Electronics (e.g. pc boards, displays)	2-Propenic,polimer with2-ethyl-2-(hydroxymeth	53192-18-0	0.00003	60.00	600000	0.03	
		3-Methylbutyl 4-Dimethylaminobenzoate	21245-01-2	0.00001	10.00	100000	0.00	
		Dye	-	0.00001	15.00	150000	0.01	
		1-Hydroxycyclohexyl phenyl ketone	947-19-3	0.00000	5.00	50000	0.00	
		Titanium Dioxide	13463-67-7	0.00001	10.00	100000	0.00	

**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)  
7(c)-I - Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric 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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