



Material Declaration Sheet

Vishay General Semiconductor - PDD

Date: 7/Aug/15

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
GF1A To GF1M HE3/-E3 suffix	YES WITH EXEMPTION	01-12-2004	0.12	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	-	0.00078	100.00	1000000	0.65	
Molybdenum Slug	Other special metals	Molybdenum	7439-98-7	0.02476	100.00	1000000	20.63	
Glass Powder	Ceramics / glass	Diboron-trioxide	1303-86-2	0.00540	33.00	330000	4.50	
		Silicon dioxide	7631-86-9	0.00122	7.45	74500	1.02	
		Zinc oxide	1314-13-2	0.00901	55.00	550000	7.51	
		Lead-monoxide	1317-36-8	0.00066	4.00	40000	0.55	Exemption No: 7(c)-I
		Cerium-dioxide	1306-38-3	0.00008	0.50	5000	0.07	
		Dibismuth-trioxide	1304-76-3	0.00001	0.05	500	0.01	
Lead Frame	Copper (e.g. copper amounts in cable harnesses)	Copper	7440-50-8	0.02366	100.00	1000000	19.72	
Solder 80	Other special metals	Copper	7440-50-8	0.00111	80.00	800000	0.93	
		Silver	7440-22-4	0.00021	15.00	150000	0.17	
		Phosphorus	7723-14-0	0.00007	5.00	50000	0.06	
Encapsulation	Other duromers	Quartz (SiO2)	14808-60-7	0.03599	70.00	700000	29.99	
		Epichlorohydrin,o-cresol,formalde polymer	29690-82-2	0.00822	16.00	160000	6.85	
		Phenol-formaldehyde resin	9003-35-4	0.00617	12.00	120000	5.14	
		Antimony oxide (Sb2-O3)	1309-64-4	0.00052	1.00	10000	0.43	
		Carbon-Black	1333-86-4	0.00013	0.25	2500	0.11	
		Additive & know-how	-	0.00038	0.75	7500	0.32	
Surface finish	Other special metals	Tin	7440-31-5	0.00161	100.00	1000000	1.34	

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. 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 weights are derived from MSDS.

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