



Material Declaration Sheet

Vishay General Semiconductor - PDD

Date: 28/Jul/16

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
ES3A-(H)E3 to ES3D-(H)E3 ES3F-(H)E3 to ES3G-(H)E3 ESH3B-(H)E3 to ESH3D-(H)E3 MURS320-(H)E3 to MURS360-(H)E3 RS3A-(H)E3 to RS3K-(H)E3 S3A-(H)E3 to S3M-(H)E3 S5A-(H)E3 to S5M-(H)E3 S5MS-(H)E3 CS3D, CS3G, CS3J, CS3K, CS3M-(H)E3	YES WITH EXEMPTION	01-12-2004	0.21	N/A	Yes	China	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)	-	0.00496	100.00	1000000	2.36	Exemption No:7(c)-I
Lead Frame	Copper (e.g. copper amounts in cable harnesses)	Copper	7440-50-8	0.07306	100.00	1000000	34.79	
Solder 92.5	Other special metals	Lead	7439-92-1	0.00777	92.50	925000	3.70	Exemption No:7(a)
		Tin	7440-31-5	0.00042	5.00	50000	0.20	
		Silver	7440-22-4	0.00021	2.50	25000	0.10	
Encapsulation	Other duromers	Quartz (SiO2)	14808-60-7	0.08513	70.00	700000	40.54	
		Epichlorohydrin, o-cresol, formalde polymer	29690-82-2	0.01947	16.00	160000	9.27	
		Phenol-formaldehyde resin	9003-35-4	0.01460	12.00	120000	6.95	
		Antimony oxide (Sb2-O3)	1309-64-4	0.00122	1.00	10000	0.58	
		Carbon-Black	1333-86-4	0.00029	0.25	2500	0.14	
		Additive & know-how	-	0.00090	0.75	7500	0.43	
Surface finish	Other special metals	Tin	7440-31-5	0.00196	100.00	1000000	0.93	

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 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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