



# Material Declaration Sheet

Vishay Inter-technology

Date	12/20/2021
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## Part / Product Family Details

Part / Family Series	RoHS Compliance Status	RoHS Compliance Date Code	Total product Weight (mg)	Value Range	Product Type	Manufacturing Location	Number of Exemptions Used
CRCW0603 e3 (10R to less than 10M)	YES WITH EXEMPTION	16-Oct-2004	2.1219021	10R to less than 10M	Resistor	Vishay BCcomponents Beyschlag	1

## Technical Information

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)
Tin (Sn)	Other	e3	1	260 ° C	3	40	Backward & Forward

## Material Composition

Homogenous Material Name	Material Classification	Substance Name	CAS number	Weight of Substance (mg)	With respect to Homogenous Material		% with respect to Total Product Weight	RoHS Exemptions Used
					%	ppm		
Ceramic substrate	Ceramics / glass			1.79513				
		Aluminium Oxide	1344-28-1	1.71686	95.64	956399	80.91	0 - None
		Magnesium oxide	1309-48-4	0.01777	0.99	9899	0.84	0 - None
		Silicon dioxide	7631-86-9	0.05224	2.91	29101	2.46	0 - None
		Miscellaneous	System	0.00826	0.46	4601	0.39	0 - None
EP-QD 80	Other duromers			0.04053				
		Epoxy resin	25068-38-6	0.00648	16.00	160000	0.31	0 - None
		Silicon dioxide	7631-86-9	0.03405	84.00	840000	1.60	0 - None
Glass electrical contact	Ceramics / glass			0.00170				
		Lead silicate [Glass]	10099-76-0	0.00170	99.90	999000	0.08	7(c)-I
		Miscellaneous	System	0.00000	0.10	1000	0.00	0 - None
Glass enamel	Ceramics / glass			0.01294				
		Chromium oxide (III)	1308-38-9	0.00027	2.09	20900	0.01	0 - None
		Lead silicate [Glass]	10099-76-0	0.01267	97.91	979100	0.60	7(c)-I
Glass layer	Ceramics / glass			0.00637				
		Lead silicate [Glass]	10099-76-0	0.00318	50.00	500000	0.15	7(c)-I
		Palladium	7440-05-3	0.00106	16.67	166667	0.05	0 - None
Nickel Plating	Nickel alloys			0.00212	33.33	333333	0.10	0 - None
		Ruthenium oxide	12036-10-1	0.00212	33.33	333333	0.10	0 - None
		Miscellaneous	System	0.06225	0.10	1000	0.00	0 - None
Silver electrical contact alloy	Other special metals			0.06219	99.90	999000	2.93	0 - None
		Nickel	7440-02-0	0.06219	99.90	999000	2.93	0 - None
		Miscellaneous	System	0.08312				
Silver layer	Other special metals			0.00254	3.06	30558	0.12	0 - None
		Bismuthous oxide	1304-76-3	0.00254	3.06	30558	0.12	0 - None
		Chromium	7440-47-3	0.00000	0.00	8	0.00	0 - None
		Copper	7440-50-8	0.00000	0.00	14	0.00	0 - None
		Copper oxide	1317-38-0	0.00085	1.02	10226	0.04	0 - None
Silver layer	Other special metals			0.07973	95.92	959194	3.76	0 - None
		Silver	7440-22-4	0.07973	95.92	959194	3.76	0 - None
		Miscellaneous	System	0.00424	0.10	1000	0.00	0 - None
Sn99.9	Other special metals			0.00000	0.10	1000	0.00	0 - None
		Silver	7440-22-4	0.00424	99.90	999000	0.20	0 - None
		Miscellaneous	System	0.11562				
Sn99.9	Other special metals			0.00012	0.10	1000	0.01	0 - None
		Tin	7440-31-5	0.11550	99.90	999000	5.44	0 - None

**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

**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.