Varistor

Material Data Sheet

Product Class:	**Disk Varistor S* B722xxS/P*M87**
Date	**02.03.2020**
IMDS ID if available	
Version:	**5.03**

Product Part (IMDS: semi component)	**Material Class** (IMDS: Material)	**Material (Classification)** VDA 231	**Substance**	TMPS**) [wt%]	**CAS if applicable**	**typical mass of material [wt-%]**	**Traces see 1)**
Active Part	Ceramic	3B	ZnO Bi2O3 Sb2O3 Co3O4 NiO others*)	91 4,0 2,5 1 0,5 1	1314-13-2 1304-76-3 1309-64-4 1308-06-1 1313-99-1	45	
Termination	Composite	4D	Cu or Ag	95	7440-50-8 7440-22-4	0,5	
			Glass frit (boro-silicate)	5			
Solder	Heavy Metal	1C8	Sn Ag Cu	96,5 3 0,5	7440-31-5 7440-22-4 7440-50-8	4,5	
Leads	Heavy Metal	1A	Fe	100	7439-89-6	27,5	
	Heavy Metal	1C12	Cu	100	7440-50-8	4,9	
	Heavy Metal	1C8	Sn	100	7440-31-5	1,6	
Encapsulation	Duromer	2D Halogen coating	SiO2 Epoxy Brominated epoxy Sb2O3 others*)	49 35 12 2,5 1,5	60676-86-0 25068-38-6 40039-93-8 1309-64-4	16	
		2D Halogen-free coating	Or Epoxy Resin SiO2 Glass fiber Al(OH)3 Additives*)	42,3 17,1 16,9 12,7 11	25036-25-3 60676-86-0 65997-17-3 21645-51-2		
					Sum in total:	100	

sizes [mm]	weight range [g]	material numbers	sizes [mm]	weight range [g]	material numbers	sizes [mm]	weight range[g]	material numbers
7	0.3 – 0.7	B72205S/P*M87	13.0	1.0 – 3.0	B72210S/P*M87	23.0	2.7 – 15.7	B72220S/P*M87
9	0.4 – 1.1	B72207S/P*M87	17.0	1.4 – 7.6	B72214S/P*M87			

Not part of a Product Class

Contact	Mr. Christoph Ronner	
Division	PPD Q QM	
Address	8530 Deutschlandsberg, AUSTRIA	
	Tel: +43 3462 800 2139	mailto: functional.ppd-eqpm.db@tdk-electronics.tdk.com

*) others: .(not declarable or prohibited substances acc. GADSL)

**) typical mass percentage of substance

Important remarks:

1) The declaration limit is 0.1% as defined by IEC 62474 (IEC PAS 61906). Traces are product parts, substances etc. that are below a percentage of 0.1 % by weight, if not otherwise regulated.

2) This Material Data Sheet contains typical values of the respective products set forth herein. We expressly point out that all values and statements contained herein are based on our best present knowledge and cannot be regarded as binding statements or binding product specifications, unless otherwise explicitly agreed in writing. TDK ELECTRONICS AG AND ITS AFFILIATES HEREBY EXPRESSLY DISCLAIM ANY REPRESENTATION OR WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, WITH REGARD TO THE STATEMENTS AND VALUES CONTAINED HEREIN, INCLUDING BUT NOT LIMITED TO ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR SUITABILITY FOR ANY PURPOSE.

The products set forth herein are "RoHS-compatible". RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

RoHS - Exemptions for the Product Class / Product according to Annex III: (☑ valid ☐ not valid **)**

☑ **no exemptions;**

☐ Exemption 6 (a): Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight;

☐ Exemption 6 (b): Lead as an alloying element in aluminium containing up to 0,4 % lead by weight;

☐ Exemption 6 (c): Copper alloy containing up to 4 % lead by weight;

☐ Exemption 7 (a): Lead in high melting temperature type solder (i.e. lead-based alloys containing 85 % by weight or more lead);

☐ Exemption 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;

☐ Exemption 7 (c)-II: Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher;

☐ Exemption 7 (c)-III: Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC;

☐ Exemption 15: Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages;

☐ Other Exemption than above .....

