

Varistor

Material Data Sheet

Product Class:	Disk Varistor S*T5 B722xxS/P*V87 B721xxS/P*
Date	09.03.2020
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	41,1	
Termination	Composite	4D	Cu or Ag Glass frit (boro-silicate)	95 5	7440-50-8 7440-22-4	0,5	
Solder	Heavy Metal	1C8	Sn Ag Cu	96,5 3 0,5	7440-31-5 7440-22-4 7440-50-8	4,1	
Leads	Heavy Metal	1A	Fe	100	7439-89-6	25,1	
	Heavy Metal	1C12	Cu	100	7440-50-8	4,5	
	Heavy Metal	1C8	Sn	100	7440-31-5	1,5	
Encapsulation	Duromer	2D Halogen-free coating	SiO2 Epoxy Pyromellitic dianhydride Phosphated epoxy others*)	46 40 6,5 5 2,5	60676-86-0 25036-25-3 89-32-7	14,6	
Tube Encapsulation	Thermoplastic	2A	Ethylene-vinyl acetate copolymer Magnesium Hydroxide Phosphorus Pigment	50 35 10 5	24937-78-8 1309-42-8 7723-14-0	8,6	
Sum in total:						100	

sizes [mm]	weight range [g]	material numbers	sizes [mm]	weight range [g]	material numbers
13.0	1.4 – 3.4	B72*10S/P*V87	17.0	1.8 – 8.0	B72*14S/P*V87

Not part of a Product Class	
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*) 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: (<input checked="" type="checkbox"/> valid <input type="checkbox"/> not valid)	
<input checked="" type="checkbox"/> no exemptions;	
<input type="checkbox"/> 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;
<input type="checkbox"/> Exemption 6 (b):	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight;
<input type="checkbox"/> Exemption 6 (c):	Copper alloy containing up to 4 % lead by weight;
<input type="checkbox"/> Exemption 7 (a):	Lead in high melting temperature type solder (i.e. lead-based alloys containing 85 % by weight or more lead);
<input type="checkbox"/> 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;
<input type="checkbox"/> Exemption 7 (c)-II:	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher;
<input type="checkbox"/> Exemption 7 (c)-III:	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC;
<input type="checkbox"/> Exemption 15:	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages;
<input type="checkbox"/> Other Exemption than above	