

Product Class	Heating elements B59xxxA/F/R* (Al)
Date	28.09.2021
IMDS ID if available	
Version	5.23

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	BaTiO3 PbTiO3 SrTiO3 CaTiO3 others*)	69 15 10 5 1	12047-27-7 12060-00-3 12060-59-2 12049-50-2	98,5	
Termination	Composite	4D	Al Lead-Boro-Silicate	90,6 9,4	7429-90-5	1,5	
Sum of total						100	

sizes [mm]	weight range [g]	material numbers	sizes [mm]	weight range [g]	material numbers
12 x 2	1.2	B59066A*	35.4 x 6.2 x 1.4	1.7	B59140R*
40 x 12 x 1.8	5.18	B59039D7201U010	34.9 x 5.7 x 1.1	1.2	B59141R*
8.6 x 1.0	0.34	B59086F0150B010	36.6 x 6.8 x 0.9	1.3	B59143R0170B*
16 x 1.5	1.81	B59351F0180B010	35 x 6,2 x 1,8	2,23	B59145R*
16 x 1.5	1.81	B59351F0125B010	36,2 x 5,7 x 2,3	2,85	B59183R*
35 x 4 x 1.62	1.27	B59004R0120B110	35 x 6,2 x 2	2,47	B59193R*
35.0 x 6.2 x 2.0	2.47	B59045R*	17,3 x 6,2 x2	1,22	B59196R*
17,5 x 6,2 x 1,1	0,72	B59077R0115B010	35 x 4 x 1.62	1,27	B59272R0050B010
35 x 6,2 x 2	2,47	B59102R*	30.8 x 39.2 x 1.9	12.8	B59280R*
35 x 6,2 x 2	2,47	B59103R*	28.8 x 9.8 x 2.1	3.5	B59288R*
36.2 x 5.7 x 1.8	2.2	B59105R0090B010	28.8 x 9.8 x 2.1	3.5	B59290R*
17,3 x 6,2 x2	1,22	B59106R*	28.8 x 9.8 x 2.1	3.5	B59297Rx160B010
11,6 x 6,2 x 2	0,82	B59107R*	28.8 x 6.2 x 1.42	1.4	B59326R*
35 x 6,2 x 2	2,45	B59109R*	28.8 x 6.2 x 1.42	1.4	B59335R*
35 x 6,2 x 1,4	1,73	B59115R*	35.4 x 14.5 x 2.1	6.27	B59356R0180B010
17,3 x 6,2 x1,4	0,86	B59116R*	35.4 x 14.5 x 2.1	6.03	B59356R0195B010
11,6 x 6,2 x 1,4	0,57	B59117R*	14.5 x 14.5 x 1.4	1.57	B59390R0070B10V3
17,3 x 6,2 x 2,2	1,35	B59126R*	27.3 x 13 x 1.1	2.2	B59401R0140B010
11,6 x 6,2 x 3,2	1,31	B59127R*	27.4 x13 x 1.1	2,13	B59423R0140B110
35.4 x 14.5 x 1.1	3.13	B59136R0135B010	28.8 x 9.8 x 1.1	1.8	B59430R0160B110
35.4 x 6.2 x 1.42	1.75	B59139R0165B010	40 x 12 x 1.8	5.18	B59432R0050B010
Not part of a Product Class					

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Contact	Ronner Christoph	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
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*) others: not declarable or prohibited substances acc. GADSL **) typical mass percentage of substance		

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. piezoelectric 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