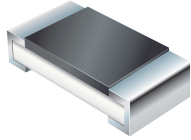


MATERIAL DECLARATION SHEET



Material Number	CR0201-AS Series			
Product Line	Chip Resistor			
Compliance Date	11/19/2015			
RoHS Compliant	Yes	MSL	1	

No.	Construction Element (subpart)	Homogeneous Material	Material weight [mg]	Homogeneous Material\ Substances	CASRN if applicable	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
1	Ceramic substrate	Alumina	0.133	Magnesium oxide	1309-48-4	1.3	1.0739	82.6087
				Crystalline silica	14808-60-7	3.0	2.4783	
				Aluminum oxide	1344-28-1	95.0	78.4783	
				Calcium oxide	1305-78-8	0.7	0.5783	
2	Rear electrode	Silver glass	0.001	Lead	7439-92-1	5.0	0.0311	0.6211
				Boron	7440-42-8	1.0	0.0062	
				Cupric oxide	1317-38-0	5.0	0.0311	
				Silver	7440-22-4	85.0	0.5280	
				Crystalline silica	14808-60-7	4.0	0.0248	
3	Surface electrode	AgPd glass	0.010	Lead	7439-92-1	2.0	0.1242	6.2112
				Boron	7440-42-8	1.0	0.0621	
				Palladium	7440-05-3	21.0	1.3043	
				Silver	7440-22-4	73.0	4.5342	
				Crystalline silica	14808-60-7	2.0	0.1242	
				Zirconium oxide	1314-23-4	1.0	0.0621	
4	Resistance Element	RuO2 glass	0.001	Lead	7439-92-1	22.0	0.1366	0.6211
				Boron	7440-42-8	3.0	0.0186	
				Cupric oxide	1317-38-0	1.0	0.0062	
				Palladium	7440-05-3	12.0	0.0745	
				Silver	7440-22-4	22.0	0.1366	
				Crystalline silica	14808-60-7	13.0	0.0807	
				Zinc oxide	1314-13-2	0.4	0.0025	
				Manganese oxide	1313-13-9	0.8	0.0050	
				Aluminum oxide	1344-28-1	0.8	0.0050	
				Ruthenium oxide	12036-10-1	25.0	0.1553	

MATERIAL DECLARATION SHEET



5	Protective Coat 1	Glass	0.001	Lead	7439-92-1	50.0	0.3106	0.6211
				Boron	7440-42-8	10.0	0.0621	
				Crystalline silica	14808-60-7	37.0	0.2298	
				Chromium oxide	1308-38-9	3.0	0.0186	
6	Protective Coat 2	Resin	0.001	Crystalline silica	14808-60-7	35.0	0.2174	0.6211
				Epoxy resin	Proprietary	65.0	0.4037	
7	Side electrode	NiCr/Cu	0.001	Nickel	7440-02-0	20.0	0.1242	0.6211
				Copper	7440-50-8	75.0	0.4658	
				Chromium	7440-47-3	5.0	0.0311	
8	Internal coating	Nickel	0.007	Nickel	7440-02-0	99.75	4.3370	4.3479
				Misc., not to declare	N/A	0.25	0.0109	
9	External coating	Tin	0.006	Tin	7440-31-5	99.75	3.7174	3.7267
				Misc., not to declare	N/A	0.25	0.0093	
Total weight			0.161					

This Document was updated on: January 5, 2017

Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.