

# MATERIAL DECLARATION SHEET



Material Number	CRS 2010 (> 1Ω)			
Product Line	High power & anti-surge chip resistors			
Compliance Date	01/27/2021			
RoHS Compliant	Yes (Lead Exemption)	MSL	N/A	

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	21.4686	Aluminum oxide	1344-28-1	96	83.688	87.174
				Silicon dioxide	14808-60-7	2	1.743	
				Magnesium oxide	1309-48-4	2	1.743	
2	Top conductor	Silver	0.3805	Silver	7440-22-4	100	1.545	1.545
3	Bottom conductor	Silver	0.1948	Silver	7440-22-4	100	0.791	0.791
4	Resistor	Ruthenium Oxide	0.2361	Silver	7440-22-4	40	0.383	0.959
				Ruthenium Dioxide	12036-10-1	20	0.192	
				Palladium	7440-05-3	15	0.144	
				Glass	65997-17-3	14.9	0.143	
				Lead-containing Glass	7439-92-1	10.1	0.097	

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5	First encapsulating	Glass	0.2277	Glass	65997-18-4	74	0.685	0.925
				Silicon dioxide	14808-60-7	12	0.111	
				Aluminum	1344-28-1	6	0.055	
				Chromium(III) oxide	1308-38-9	8	0.074	
6	Overcoat	Resin	0.5224	Resin	25036-25-3	100	2.121	2.121
7	Side conductor	Silver	0.5031	Silver	7440-22-4	85	1.737	2.043
				Resin	9003-36-5	15	0.306	
8	Plating (Middle)	Nickel	0.4246	Nickel	7440-02-0	100	1.724	1.724
9	Plating (Outer)	Tin	0.6370	Tin	7440-31-5	100	2.586	2.586
10	Marking	Resin	0.0324	Resin	29690-82-2	70	0.092	0.132
				Pigment	1317-80-2	30	0.040	
			Total weight	24.6272				

**This Document was updated on: 01/27/2021**

## Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.
  - a. **“Compliance Date”** is not the date supplier submits the MDS, but when the product was first compliant with RoHS.
  - b. **“This Document was updated on:”** is where we indicate when supplier submits the MDS. All previous MDS must be archived for traceability in the future.

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c. Material weights for components less than 100mg (most Semiconductor products) should be listed in milligrams. This avoids all those zeros and round off issues.

2. RoHS exemption: 7( c )-1 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.