

Material Data Sheet

Date : March 21, 2017
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Product P/N	ERJ3KF***V				
Product Classification	Electric/Electronic component(Passive component)				
Product Name	Chip Resistor	Substitute P/N	No	Weight TOTAL(mg)	2.159409
Pb	Pb free	Packaging Material	Not included		

Part Name	Material Name	Chemical Name	CASNo.	Remark	Weight of each chemical material in a part (mg)	Weight of a part (mg)	Rate of each chemical material in a part (%)	Rate of each chemical material in a product (wt%)	Rate of each part in a
Substrate	Ceramics	Aluminum oxide, Alumina, Corundum, Al ₂ O ₃	1344-28-1		1.7388	1.8	96.6	83.955715	80.521605
		Silica, Silicon dioxide	7631-86-9		0.0178		2.1		1.750479
		Magnesium oxide, MgO	1309-48-4		0.018		1		0.833562
		Calcium oxide, CaO	1305-78-8		0.0054		0.3		0.250069
Top Terminal	Other special metals	Silver; Ag	7440-22-4		0.012982	0.0134	96.880595	0.62068	0.601322
		Palladium; Pd	7440-05-3		0.000175		1.305971		0.008104
	Glass	Cupric oxide, CuO	1317-38-0		0.000061		0.604478		0.0003751
		Silica; Silicon dioxide	7631-86-9		0.000041		0.305971		0.001899
Bottom Terminal	Other special metals	Lead(II) oxide, Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monoxide; Lead(2+) oxide	1317-38-8		0.000121	0.01494	0.902985	0.69195	0.005604
		Silver; Ag	7440-22-4		0.014565		97.48898		0.674583
	Glass	Lead(II) oxide, Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monoxide; Lead(2+) oxide	1317-38-8		0.000225		1.506024		0.01042
		Silica; Silicon dioxide	7631-86-9		0.00015		1.804015		0.006947
Resistive Element	Glass	Lead(II) oxide, Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monoxide; Lead(2+) oxide	1317-38-8		0.003340	0.00828	43.957584	0.383486	0.16375
		Ruthenium(IV) oxide; RuO ₂	12038-10-1		0.003163		38.200483		0.146476
		Boron oxide; B ₂ O ₃	1303-86-2		0.001242		1.5		0.057516
		Other antimony compounds	-		0.000155		1.871981		0.007178
First Protective Coating	Glass	Manganese dioxide; MnO ₂	1313-13-9		0.000077	0.01484	0.929952	0.687319	0.003566
		Lead(II) oxide, Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monoxide; Lead(2+) oxide	1317-38-8		0.00016		54.936521		0.377974
		Silica; Silicon dioxide	7631-86-9		0.003789		25.599731		0.175828
		Boron oxide; B ₂ O ₃	1303-86-2		0.001915		12.904313		0.088682
Second Protective Coating	Ceramics	Zinc oxide; ZnO	1314-13-2		0.000624	0.0153	4.204852	0.70853	0.028897
		Chromium(III) oxide; Pigment green 17 (C.I.); Cr ₂ O ₃	1308-38-9		0.000342		2.304583		0.015838
		Silica; Silicon dioxide	7631-86-9		0.010251		67		0.474714
		Epichlorohydrin, or cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29890-82-2		0.00459		30		0.212559
Side Terminal	EP (Epoxy resin)	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	25068-38-8		0.000153	0.08165	1	3.781174	0.007088
		Others (Powder etc)	Carbon black; C	1333-86-4			0.000306		2
	Other special metals	Silver; Ag	7440-22-4		0.037109		45.450091		1.718226
		Others (Powder etc)	Carbon black; C	1333-86-4			0.007431		9.101941
Middle Terminal	Nickel and Nickel alloys	Nickel; Ni	7440-02-0		0.124	100	5.742312	5.742312	
Outer Terminal	Other nonferrous metals	Tin; Sn	7440-31-5		0.086999	0.086999	100	4.028834	4.028834

RoHS exemption 7c(1)
 Electric 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