

Dear Customers,

Material Data Sheet

Date : February 26, 2019
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Product P/N	ERJ1TNF@@@@@U		
Product Classification	Electric/Electronic component(Passive component)		
Product Name	Chip Resistor	Substitute P/N	No
Pb	Pb free	Packaging Material	Not included
			Weight TOTAL(mg) 40.02765

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 product(wt%)
Substrate		Ceramics	Aluminum oxide ; Alumina; Corundum; Al2O3	1344-28-1		34.5828	35.8	96.6	89.438138	86.397239
			Quartz; SiO2	14808-60-7		0.7518		2.1		1.878202
			Magnesium oxide; MgO	1309-48-4		0.358		1		0.894382
			Calcium oxide; CaO	1305-78-8		0.1074		0.3		0.268315
Top Terminal		Other special metals	Silver; Ag	7440-22-4		0.210029	0.21675	96.899191	0.541509	0.524715
			Palladium; Pd	7440-05-3		0.002818		1.300116		0.007041
		Glass	Cupric oxide; CuO	1317-38-0		0.001301		0.600231		0.003251
			Silica; Silicon dioxide	7631-86-9		0.000651		0.300346		0.001627
			Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.001951		0.900116		0.004875
	EU RoHS exemption 7(c)-I									
Bottom Terminal		Other special metals	Silver; Ag	7440-22-4		0.331558	0.34006	97.499852	0.849566	0.828325
			Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.005101		1.50003		0.012744
	EU RoHS exemption 7(c)-I	Glass	Silica; Silicon dioxide	7631-86-9		0.003401		1.000118		0.008497
Resistive Element		Glass	Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.173623	0.3946	43.999746	0.985823	0.433761
			Ruthenium(IV) oxide; RuO2	12036-10-1		0.150738		38.200203		0.376585
			Boron oxide; B2O3	1303-86-2		0.05919		15		0.147873
			Other antimony compounds (The detail is confidential. It is not Sb2O3)	-		0.007379		1.869995		0.018435
			Manganese dioxide; MnO2	1313-13-9		0.00367		0.930056		0.009169
	EU RoHS exemption 7(c)-I									
First Protective Coating		Glass	Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.097541	0.17735	54.999152	0.443075	0.243689
			Silica; Silicon dioxide	7631-86-9		0.045402		25.600226		0.113427
			Boron oxide; B2O3	1303-86-2		0.022879		12.90048		0.057158
			Zinc oxide; ZnO	1314-13-2		0.007449		4.20017		0.01861
			Chromium(III) oxide; Pigment green 17 (C.I.); Cr2O3	1308-38-9		0.004079		2.299972		0.010191
Second Protective Coating		EP (Epoxy resin)	Epichlorohydrin, o-cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2		0.680981	0.98693	68.999928	2.465624	1.701279
		Ceramics	Silica; Silicon dioxide	7631-86-9		0.226994		23.000011		0.567093
		Others (Powder,etc)	Carbon black; C	1333-86-4		0.078955		8.000061		0.197252
Marking 1		EP (Epoxy resin)	Epichlorohydrin, o-cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2		0.004684	0.00768	60.989582	0.019191	0.011705
		Ceramics	Silica; Silicon dioxide	7631-86-9		0.002343		30.507813		0.005854
		Others (Powder,etc)	Titanium dioxide; Pigment white 6; TiO2	13463-67-7		0.000653		8.502605		0.001632
Side Terminal		Other special metals	Silver; Ag	7440-22-4		0.210012	0.44028	47.699645	1.099947	0.524673
			EP (Epoxy resin)	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	25068-38-6			0.183597		41.700055
		Others (Powder,etc)	Carbon black; C	1333-86-4		0.025977		5.900109		0.064898
			Other nonferrous metals	Potassium titanate; Potassium titanium oxide; K2Ti6O13	12056-51-8			0.020694		4.700191
Middle Terminal		Nickel and Nickel alloys	Nickel; Ni	7440-02-0		0.9	0.9	100	2.248446	2.248446
Outer Terminal		Other nonferrous metals	Tin; Sn	7440-31-5		0.764	0.764	100	1.908681	1.908681

EU RoHS 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