

Dear Customers,

# Material Data Sheet

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Product P/N	ERJS03F@@@V				
Product Classification	Electric/Electronic component(Passive component)				
Product Name	Chip resistor	Substitute P/N	No	Weight TOTAL(mg)	2.194959
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 product(wt%)	
Substrate		Ceramics	Aluminum oxide ; Alumina; Corundum; Al2O3	1344-28-1		1.7388	1.8	96.6	82.005436	79.217228	
			Quartz; SiO2	14808-60-7	0.0378	2.1		1.722128			
			Magnesium oxide; MgO	1309-48-4	0.018	1		0.820061			
			Calcium oxide; CaO	1305-78-8	0.0054	0.3		0.246019			
Top Terminal	EU RoHS exemption 7(c)-I	Gold	Gold; Au	7440-57-5		0.033001	0.03496	94.396452	1.592833	1.503582	
			Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8	0.001329	3.801488		0.060548			
		Glass	Cupric oxide; CuO	1317-38-0		0.00042		1.201373		0.019135	
			Boron oxide; B2O3	1303-86-2		0.00021		0.600687		0.009568	
Bottom Terminal	EU RoHS exemption 7(c)-I	Other special metals	Silver; Ag	7440-22-4		0.014565	0.01494	97.48996	0.680742	0.663657	
			Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8	0.000225	1.506024		0.010251			
		Glass	Silica; Silicon dioxide	7631-86-9		0.00015		1.004016		0.006834	
Resistive Element	EU RoHS exemption 7(c)-I	Glass	Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.004464	0.01015	43.980293	0.462517	0.203467	
			Ruthenium(IV) oxide; RuO2	12036-10-1		0.003878		38.206897		0.176678	
			Boron oxide; B2O3	1303-86-2		0.001523		15.004927		0.069387	
			Other antimony compounds	-		0.00019		1.871922		0.008657	
			Manganese dioxide; MnO2	1313-13-9		0.000095		0.935961		0.004328	
First Protective Coating	EU RoHS exemption 7(c)-I	Glass	Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.00816	0.01484	54.986521	0.676188	0.371852	
			Silica; Silicon dioxide	7631-86-9		0.003799		25.599731		0.173079	
			Boron oxide; B2O3	1303-86-2		0.001915		12.904313		0.087246	
			Zinc oxide; ZnO	1314-13-2		0.000624		4.204852		0.028429	
			Chromium(III) oxide; Pigment green 17 (C.I.); Cr2O3	1308-38-9		0.000342		2.304583		0.015582	
Re-top Terminal		Other special metals	Silver; Ag	7440-22-4		0.00865	0.01041	83.093179	0.474315	0.394131	
			EP (Epoxy resin)	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	25068-38-6			0.00176		16.906821	0.080184
Second Protective Coating		Ceramics	Silica; Silicon dioxide	7631-86-9		0.010322	0.0153	67.464052	0.697099	0.470305	
			EP (Epoxy resin)	Epichlorohydrin, o-cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2			0.004609		30.124183	0.209982
			Others (Powder,etc)	Carbon black; C	1333-86-4			0.000369		2.411765	0.016812
Marking 1		EP (Epoxy resin)	Epichlorohydrin, o-cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2		0.000789	0.00171	46.140349	0.078044	0.036083	
			Ceramics	Kaolin; Aluminum silicate hydroxide	1332-58-7			0.000399		23.333334	0.018178
		Others (Powder,etc)	Silica; Silicon dioxide	7631-86-9		0.000112		6.549708		0.005103	
			Titanium dioxide; Pigment white 6; TiO2	13463-67-7		0.000399		23.333334		0.018178	
			Copper phthalocyanine; Phthalocyanine copper; Phthalocyanine blue; Pigment blue 15	147-14-8		0.000011		0.643275		0.000502	
Side Terminal		EP (Epoxy resin)	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	25068-38-6		0.03711	0.08165	45.450091	3.719935	1.690693	
			Other special metals	Silver; Ag	7440-22-4			0.037109		45.448868	1.690693
			Others (Powder,etc)	Carbon black; C	1333-86-4			0.007431		9.101041	0.338549
Middle Terminal		Nickel and Nickel alloys	Nickel; Ni	7440-02-0		0.124	0.124	100	5.649309	5.649309	
Outer Terminal		Other nonferrous metals	Tin; Sn	7440-31-5		0.086999	0.086999	100	3.963582	3.963582	

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