

Material Data Sheet

Date : Apr/13/2012  
 Company : Industrial Devices Company, Panasonic Corporation  
 Address : 401 Sadamasa-cho, Fukui City, Fukui Japan  
 Department : Circuit Components Business Unit, Environment Management Team  
 Approved by : Keiichi Noi  
 Prepared by : Yasuo Katsuki  
 Telephone : +81-776-56-8028

Product P/N	ERJ6RQF@@@V				
Product Classification	Electric/Electronic component(Passive component)				
Product Name	Chip Resistor	Substitute P/N	No	Weight TOTAL(mg)	5.08221
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%)	EU RoHS exemption	
Substrate	Ceramics	Aluminum oxide ; Alumina; Corundum; Al2O3	1344-28-1		4.0572	4.2	96.6	82.641004	79.831201		
		Silica; Silicon dioxide	7631-86-9		0.0882		2.1			1.735466	
		Magnesium oxide; MgO	1309-48-4		0.042		1			0.826413	
		Calcium oxide; CaO	1305-78-8		0.0126		0.3			0.247924	
Top Terminal	Other special metals	Silver; Ag	7440-22-4		0.032982	0.03404	96.891889	0.669848	0.649029		
		Palladium; Pd	7440-05-3		0.000443		1.301411			0.008717	
		Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.000307		0.901881			0.006041	
	Cupric oxide; CuO	1317-38-0		0.000205	0.602233		0.004034				
	Silica; Silicon dioxide	7631-86-9		0.000103	0.302586		0.002027				
Bottom Terminal	Other special metals	Silver; Ag	7440-22-4		0.027845	0.02856	97.496498	0.561982	0.547912		
		Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.000429		1.502101			0.008442	
	Glass	Silica; Silicon dioxide	7631-86-9		0.000286		1.001401			0.005628	
Resistive Element	Other special metals	Palladium; Pd	7440-05-3		0.012585	0.01724	72.998839	0.339245	0.247649		
		Ruthenium(IV) oxide; RuO2	12036-10-1		0.002707		15.701857			0.053265	
	Glass	Boron oxide; B2O3	1303-86-2		0.000862		5			0.018962	
	Other special metals	Silver; Ag	7440-22-4		0.000724		4.199536			0.014246	
	Glass	Manganese dioxide; MnO2	1313-13-9		0.000362		2.099768			0.007123	
First Protective Coating	Glass	Lead(II) oxide; Lead oxide (PbO); C.I. Pigment Yellow 46; Lead monooxide; Lead(2+) oxide	1317-36-8		0.009832	0.01788	54.988813	0.351856	0.193499	7 (C)-1	
		Silica; Silicon dioxide	7631-86-9		0.004578		25.604027				0.090079
		Boron oxide; B2O3	1303-86-2		0.002307		12.902685				0.045394
		Zinc oxide; ZnO	1314-13-2		0.000751		4.200224				0.014777
		Chromium(III) oxide; Pigment green 17 (C.I.); Cr2O3	1308-38-9		0.000412		2.304251				0.008107
Second Protective Coating	EP (Epoxy resin)	Epichlorohydrin, o-cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2		0.027945	0.0405	69	0.796899	0.54986		
		Silica; Silicon dioxide	7631-86-9		0.009315		23			0.183287	
		Others (Powder.etc)	Carbon black; C	1333-86-4			0.00324			8	0.063752
Marking 1	EP (Epoxy resin)	Epichlorohydrin, o-cresol, formaldehyde polymer; Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol	29690-82-2		0.001701	0.00279	60.967741	0.054918	0.03349		
		Ceramics	Silica; Silicon dioxide	7631-86-9			0.000851			30.501793	0.016745
		Others (Powder.etc)	Titanium dioxide; Pigment white 6; TiO2	13463-67-7			0.000238			8.530466	0.004683
Side Terminal	Other special metals	Silver; Ag	7440-22-4		0.026949	0.0565	47.697345	1.111762	0.530301		
		EP (Epoxy resin)	Bisphenol A, epichlorohydrin polymer; Epoxy resin; Epon 820; Araldite GY 250	25068-38-6			0.023561			41.700885	0.463598
		Others (Powder.etc)	Carbon black; C	1333-86-4			0.003334			5.900885	0.065602
Middle Terminal (cu)	Other nonferrous metals	Potassium titanate; Potassium titanium oxide; K2Ti6O13	12056-51-8		0.002656	0.3057	4.700885	6.0151	6.0151		
		Copper alloys	Copper; Cu	7440-50-8			0.3057			100	
Middle Terminal (ni)	Nickel and Nickel alloys	Nickel; Ni	7440-02-0		0.223	0.223	100	4.387855	4.387855		
Outer Terminal (sn)	Other nonferrous metals	Tin; Sn	7440-31-5		0.156	0.156	100	3.069531	3.069531		