

RESISTOR Material Composition

The contents of this specification may change without notice 1/23/2014

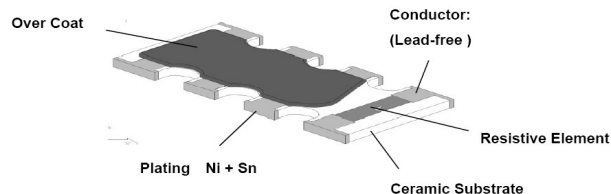


CRN Series - Thick Film Chip Resistor Arrays

This statement pertains to the following directive 2011/65/EC of the European Parliament and of the Council of the European Union on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

The definition of LEAD-FREE products is external terminal meet Lead Free.

RoHS exemption 7 (c)-1, Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronics devices, or in a glass or ceramic matrix compound (2011/65/EU)



CAS no.	Material	Substance	CRN10-2V		CRN10-4V		CRN16-8V		CRN16-2V		CRN16-4V		CRN16-8SU	
			Mass mg	%	Mass mg	%	Mass mg	%	Mass mg	%	Mass mg	%	Mass mg	%
1344-28-1	Ceramic Substrate	Al2O3	0.7861	76.05%	2.2865	83.91%	7.9098	82.94%	3.6690	83.39%	7.0191	80.42%	6.6999	77.12%
60676-86-0		SiO2	0.0328	3.17%	0.0953	3.50%	0.3296	3.46%	0.1529	3.47%	0.2925	3.35%	0.2792	3.21%
7440-22-4	Conductor Layer	Ag	0.0371	3.59%	0.0730	2.68%	0.0339	2.67%	0.0652	1.48%	0.1036	1.19%	0.1956	2.25%
65997-17-3		Glass	0.0020	0.19%	0.0038	0.14%	0.0018	0.14%	0.0034	0.08%	0.0055	0.06%	0.0103	0.12%
12036-10-1	Resistive Element	RuO2	0.0065	0.63%	0.0160	0.59%	0.0580	0.60%	0.0114	0.26%	0.0210	0.24%	0.0243	0.28%
7440-22-4		Ag	0.0103	1.00%	0.0256	0.94%	0.0927	0.96%	0.0183	0.42%	0.0336	0.38%	0.0389	0.45%
1317-36-8		Pb	0.0039	0.38%	0.0096	0.35%	0.0348	0.36%	0.0069	0.16%	0.0126	0.14%	0.0146	0.17%
65997-17-3		Glass	0.0052	0.50%	0.0128	0.47%	0.0464	0.48%	0.0092	0.21%	0.0168	0.19%	0.0195	0.22%
25068-38-6	Over-Coating	Epoxy	0.0247	2.39%	0.0304	1.12%	0.2295	1.62%	0.0590	1.34%	0.1226	1.40%	0.1251	1.44%
25068-38-6	Marking	Epoxy	0.0000	0.00%	0.0031	0.12%	0.1549	0.06%	0.0057	0.13%	0.0044	0.05%	0.0035	0.04%
7440-02-0	End Terminal	Ni	0.0296	2.86%	0.0020	0.07%	0.0055	1.64%	0.0792	1.80%	0.2212	2.54%	0.2057	2.37%
7440-47-3		Cr	0.0074	0.72%	0.0005	0.02%	0.1957	0.41%	0.0198	0.45%	0.0553	0.63%	0.0514	0.59%
7440-02-0	Ni Plating	Ni	0.0484	4.68%	0.0877	3.22%	0.2440	2.55%	0.1650	3.75%	0.4506	5.16%	0.5604	6.45%
7440-31-5	Sn Plating	Sn	0.0397	3.84%	0.0783	2.87%	0.2000	2.10%	0.1351	3.07%	0.3695	4.24%	0.4596	5.29%
All of the above are approximate values by the component parts of the material			1.0337	100	2.7246	100	9.5366	100	4.4001	100	8.7283	100	8.6880	100

CAS no.	Material	Substance	CRN31
			Mass mg
1344-28-1	Ceramic Subs	Al2O3	52.9485
60676-86-0		SiO2	1.2659
1309-48-4		MgO	0.8256
7440-22-4	Conductor Layer	Ag	0.4395
65997-17-3		Glass	0.1850
12036-10-1	Resistive Eler	RuO2	0.0579
7440-22-4		Ag	0.1496
1317-36-8		Pb	0.0511
65997-17-3		Glass	0.2513
25068-38-6	Over-Coating	Expoxy	0.4120
25068-38-6	Marking	Epoxy	0.0027
7440-22-4	End Terminal	Ag	0.0005
1308-38-9		Cr	0.0005
7440-02-0	Ni Plating	Ni	4.0755
7440-31-5	Sn Plating	Sn	3.3345
All of the above are approximate values by the component parts of the material			64.0000



I-15SU
%
82.73%
1.98%
1.29%
0.69%
0.29%
0.09%
0.23%
0.08%
0.39%
0.64%
0.00%
0.00%
0.00%
6.37%
5.21%
100

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