

AUTOMOTIVE THICK FILM CHIP RESISTORS

- CNA SERIES -



NO.	BREAKDOWN OF COMPONENT	MATERIAL NAME	CAS NO.	SUBSTANCE MASS (mg/pc)	PERCENTAGE OF HOMOGENEOUS MATERIAL	REMARK
1	Substrate	Aluminum Trioxide	1344-28-1	0.4235232	96%	
		Silicon Dioxide	14808-60-7	0.0088234	2%	
		Magnesium Oxide	1309-48-4	0.0088234	2%	
2	Termination Inner (C1)	Silver	7440-22-4	0.0364140	95.65%	
		Glass	65997-18-4	0.0016560	4.35%	
3	Termination Inner (C2)	Silver	7440-22-4	0.0182529	86.96%	
		Glass	65997-18-4	0.0027371	13.04%	
4	Termination Inner (C3)	Silver	7440-22-4	0.0179983	80.71%	
		Epoxy Resin	25068-38-6	0.0029570	13.26%	
		Phenolic Resin	9003-35-4	0.0001383	0.62%	
		Carbon	7782-42-5	0.0012064	5.41%	
5	Resistive Element	Ruthenium Oxide	12036-10-1	0.0004580	5.00%	RoHS Exemption No.: 7(c)-I (Pb in glass of electronic components)
		Silver	7440-22-4	0.0022900	25.00%	
		Palladium	7440-05-3	0.0009160	10.00%	
		Glass	65997-18-4	0.0054960	60.00%	
6	Protective Coating (G1)	Glass	65997-18-4	0.0150616	67%	
		Ethyl Cellulose	9004-57-3	0.0006744	3%	
		Turpentine Alcoholize	10482-56-1	0.0067440	30%	
7	Protective Coating (G2)	Resin	25068-38-6	0.0116064	48.00%	
		Color Pigment	68186-91-4	0.0032232	13.33%	
		Silicon Dioxide	60676-86-0	0.0080592	33.33%	
		Talc	14807-96-6	0.0012912	5.34%	
8	Termination Between	Nickel	7440-02-0	0.0971800	100%	
9	Termination Outer	Tin	7440-31-5	0.0956600	100%	
TOTAL				0.771190		

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1	Substrate	Aluminum Trioxide	1344-28-1	4.3178150	90.67%	
		Silicon Dioxide	14808-60-7	0.0799500	1.68%	
		Magnesium Oxide	1309-48-4	0.3555300	7.46%	
		Calcium Oxide	1305-78-8	0.0088840	0.19%	
2	Termination Inner (C1)	Silver	7440-22-4	0.0436600	91.55%	
		Palladium	7440-05-3	0.0006700	1.40%	
		Glass	65997-18-4	0.0033600	7.05%	
3	Termination Inner (C2)	Silver	7440-22-4	0.0125660	86.96%	
		Glass	65997-18-4	0.0018850	13.04%	
4	Termination Inner (C3)	Silver	7440-22-4	0.0000560	100.00%	
5	Resistive Element	Silver	7440-22-4	0.0072730	25.16%	RoHS Exemption No.: 7(c)-I (Pb in glass of electronic components)
		Palladium	7440-05-3	0.0036365	12.58%	
		Ruthenium Oxide	12036-10-1	0.0054547	18.87%	
		Glass Frits	65997-18-4	0.0109094	37.74%	
		Copper Oxide	1317-38-0	0.0001818	0.64%	
		Manganese Oxide	1317-35-7	0.0003636	1.26%	
		Niobium Pentoxide	1313-96-8	0.0005455	1.89%	
		Tantalum Pentoxide	1314-61-0	0.0005455	1.89%	
6	Protective Coating (G1)	Glass	1304-76-3	0.0266070	63.49%	
		Silicon dioxide	14808-60-7	0.0133030	31.75%	
		Chromium(III) Oxide	1308-38-9	0.0019950	4.76%	
7	Protective Coating (G2)	Resin	25068-38-6	0.0227880	38.46%	
		Silica	60676-86-0	0.0273450	46.15%	
		Talc	14807-96-6	0.0091150	15.38%	
8	Termination Between	Nickel	7440-02-0	0.0356000	100%	
9	Termination Outer	Tin	7440-31-5	0.0350400	100%	
TOTAL				5.02508		



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1	Substrate	Aluminum Trioxide	1344-28-1	7.3084800	96%	
		Silicon Dioxide	14808-60-7	0.1522600	2%	
		Magnesium Dioxide	1309-48-4	0.1522600	2%	
2	Termination Inner (C1)	Silver	7440-22-4	0.0522632	95.65%	
		Glass	65997-18-4	0.0023768	4.35%	
3	Termination Inner (C2)	Silver	7440-22-4	0.0315317	86.96%	
		Glass	65997-18-4	0.0047283	13.04%	
4	Termination Inner (C3)	Silver	7440-22-4	0.0364000	80.71%	
		Epoxy Resin	25068-38-6	0.0059800	13.26%	
		Phenolic Resin	9003-35-4	0.0002800	0.62%	
		Carbon	7782-42-5	0.0024400	5.41%	
5	Resistive Element	Ruthenium Oxide	12036-10-1	0.0009325	5.00%	RoHS Exemption No.: 7(c)-I (Pb in glass of electronic components)
		Silver	7440-22-4	0.0046625	25.00%	
		Palladium	7440-05-3	0.0018650	10.00%	
		Glass	65997-18-4	0.0111900	60.00%	
6	Protective Coating (G1)	Glass	65997-18-4	0.0484410	67%	
		Ethyl Cellulose	9004-57-3	0.0021690	3%	
		Turpentine Alcoholize	10482-56-1	0.0216900	30%	
7	Protective Coating (G2)	Resin	25068-38-6	0.0346224	48.00%	
		Color Pigment	68186-91-4	0.0096149	13.33%	
		Silicon Dioxide	60676-86-0	0.0240409	33.33%	
		Talc	14807-96-6	0.0038517	5.34%	
8	Termination Between	Nickel	7440-02-0	0.1958000	100%	
9	Termination Outer	Tin	7440-31-5	0.1927000	100%	
10	Marking	Epoxy Resin	25085-99-8	0.0000700	52.63%	
		Barium Sulfate	7727-43-7	0.0000210	15.79%	
		Titanium Dioxide	13463-67-7	0.0000420	31.58%	
TOTAL				8.300713		