

MATERIAL DECLARATION SHEET



Material Number	4612X			
Product Line	Thick Film Conformal SIP			
Compliance Date	2022/9/7			
RoHS Compliant	YES	MSL	1	

No.	Construction Element(subpart)	Homogeneous Material	Material weight [g]	Homogeneous Material\ Substances	CASRN if applicable	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
1	Alumina Substrate	Alumina	0.19524	Aluminum oxide	1344-28-1	96.60	30.051	31.109
				Silicon dioxide	14808-60-7	2.10	0.653	
				Magnesium oxide	1309-48-4	1.10	0.342	
				Calcium	1305-78-8	0.20	0.062	
2	Protective Coating (G1)	admixture	0.00156	Bismuth	1304-76-3	60.00	0.149	0.249
				Silicon dioxide	14808-60-7	35.00	0.087	
				Chromium(III) oxide	1308-38-9	5.00	0.012	
3	Resistive Element	admixture	0.00408	Silver	7440-22-4	25.15	0.1635	0.650
				Palladium	7440-05-3	12.57	0.0817	
				Ruthenium(IV) oxide	12036-10-1	18.86	0.1226	
				Lead-containing glass	7439-92-1	37.73	0.2453	
				Copper oxide	1317-38-0	0.64	0.0042	
				Manganese(II, III)	1317-35-7	1.27	0.0083	
				Niobium(V) oxide	1313-96-8	1.89	0.0123	
				Tantalum(V) oxide	1314-61-0	1.89	0.0123	
4	Termination Ag/Pd	Metal	0.00708	Silver	7440-22-4	93.60	1.056	1.129
				Palladium	7440-5-3	1.00	0.012	
				Glass	65997-17-3	5.40	0.061	
5	Lead Frame	Metal	0.1104	Iron	7439-89-6	85.86	15.103	17.591
				Tin	7440-31-5	14.14	2.487	
6	Sn	Solder ball	0.03996	Tin	7440-31-5	98.50	6.272	6.637

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				Silver	7440-22-4	1.00	0.064	
				Copper	7440-50-8	0.50	0.032	
7	Encapsulation	powder	0.26928	epoxy resin	1675-54-3	30.00	12.879	42.906
				silica	14464-46-1	45.00	19.308	
				Flame Retardant	/	17.00	7.294	
				Pigment (Titanium dioxide)	13463-67-7	4.00	1.7165	
				Pigment (Pigment Yellow 17)	4531-49-1	4.00	1.7165	
		Total weight	0.6276					

This Document was updated on: 2022. 9. 7

Important remarks:

1. RoHS exemptions: 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.

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