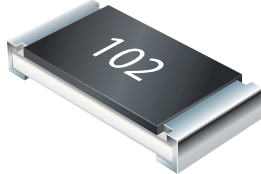


# MATERIAL DECLARATION SHEET



Material Number	CR0603-PF Series (100ohm above)			
Product Line	Thick Film Resistors (Ultra-low lead content)			
Compliance Date	2017.12.06			
RoHS Compliant	Yes	MSL	1	

No.	Construction Element(subpart)	Homogeneous Material	Material weight [mg]	Homogeneous Material\ Substances	CASRN if applicable	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
1	Ceramic Substrate	CR****	1.66179	Aluminum oxide	1344-28-1	96%	82.49%	85.93%
				Silicon dioxide	14808-60-7	4%	3.44%	
2	Conductor Layer	5***	0.04467	Silver	7440-22-4	100%	2.31%	2.31%
3	Resistive Element	R-U	0.02553	Ruthenium oxide	12036-10-1	30%	0.40%	1.32%
				Silver	7440-22-4	45%	0.59%	
				Glass (non-lead)	65997-17-3	25%	0.33%	
4	Over Coating	1***	0.03036	Epoxy	25068-38-6	100%	1.57%	1.57%
5	Marking	ZSR-1**	0.00309	Epoxy	25085-99-8	100%	0.16%	0.16%
6	End Terminal	NI-CR	0.00251	Nickel	7440-02-0	80%	0.10%	0.13%
				Chromium	7440-47-3	20%	0.03%	
7	Ni Plating	Ni	0.08780	Nickel	7440-02-0	100%	4.54%	4.54%
8	Sn Plating	Sn	0.07813	Tin	7440-31-5	100%	4.04%	4.04%
			Total weight	1.93388				

This Document was updated on: 2017/12/6