



# Material Declaration Data Sheet

## ASR14 (Formerly ASR 1/4)

**Anti-Surge Resistor**



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (g): **0.2183**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic core	aluminum oxide	1344-28-1	0.1139	521,760	96.00%	0.1186	54.35%
	silicon oxide	7631-86-9	0.0024	10,870	2.00%		
	magnesium oxide	1309-48-4	0.0012	5,435	1.00%		
	calcium oxide	1305-78-8	0.0012	5,435	1.00%		
Resistive element	tin-dioxide	18282-10-5	0.0001	400	100.00%	0.0001	0.04%
Cap and lead assembly	iron	7439-89-6	0.0281	128,802	34.94%	0.0805	36.86%
	copper	7440-50-8	0.0442	202,688	54.99%		
	tin	7440-31-5	0.0081	37,110	10.07%		
Over-coat / marking	silicone resin	9016-00-6	0.0159	72,917	83.33%	0.0191	8.75%
	silicone dioxide	14808-60-7	0.0015	6,973	7.97%		
	xylene	1330-20-7	0.0002	737	0.84%		
	aromatic solvent	64742-94-5	0.0015	6,874	7.86%		
Total Weight			0.2183				

\* Weights are approximate.



# Material Declaration Data Sheet

## ASRM12 (Formerly ASRM 1/2)

Mini - Anti-Surge Resistor

Date: **November 7, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.4734**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic core	aluminum oxide	1344-28-1	0.2505	529,152	96.00%	0.2609	55.12%
	silicon oxide	7631-86-9	0.0052	11,024	2.00%		
	magnesium oxide	1309-48-4	0.0026	5,512	1.00%		
	calcium oxide	1305-78-8	0.0026	5,512	1.00%		
Resistive element	tin-dioxide	18282-10-5	0.0002	400	100.00%	0.0002	0.04%
Cap and lead assembly	iron	7439-89-6	0.0585	123,597	34.93%	0.1675	35.38%
	copper	7440-50-8	0.0921	194,595	55.00%		
	tin	7440-31-5	0.0169	35,607	10.06%		
Over-coat / marking	silicone resin	9016-00-6	0.0389	82,178	86.87%	0.0448	9.46%
	silicone dioxide	14808-60-7	0.0033	6,999	7.40%		
	xylene	1330-20-7	0.0002	508	0.54%		
	aromatic solvent	64742-94-5	0.0023	4,915	5.20%		
Total Weight			0.4734				

\* Weights are approximate.



# Material Declaration Data Sheet

## ASRM1 (Formerly ASRM 1)

Mini - Anti-Surge Resistor

Date: **November 7, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.4819**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic core	aluminum oxide	1344-28-1	0.2413	500,640	96.00%	0.2513	52.15%
	silicon oxide	7631-86-9	0.0050	10,430	2.00%		
	magnesium oxide	1309-48-4	0.0025	5,215	1.00%		
	calcium oxide	1305-78-8	0.0025	5,215	1.00%		
Resistive element	tin-dioxide	18282-10-5	0.0002	400	100.00%	0.0002	0.04%
Cap and lead assembly	iron	7439-89-6	0.0646	133,973	34.93%	0.1848	38.35%
	copper	7440-50-8	0.1016	210,931	55.00%		
	tin	7440-31-5	0.0186	38,596	10.06%		
Over-coat / marking	silicone resin	9016-00-6	0.0396	82,178	86.87%	0.0456	9.46%
	silicone dioxide	14808-60-7	0.0034	6,999	7.40%		
	xylene	1330-20-7	0.0002	508	0.54%		
	aromatic solvent	64742-94-5	0.0024	4,915	5.20%		
Total Weight			0.4819				

\* Weights are approximate.



# Material Declaration Data Sheet

## ASR1 (Formerly ASR 1)

**Anti-Surge Resistor**



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (g): **0.5670**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic core	aluminum oxide	1344-28-1	0.3222	568,224	96.00%	0.3356	59.19%
	silicon oxide	7631-86-9	0.0067	11,838	2.00%		
	magnesium oxide	1309-48-4	0.0034	5,919	1.00%		
	calcium oxide	1305-78-8	0.0034	5,919	1.00%		
Resistive element	tin-dioxide	18282-10-5	0.0002	300	100.00%	0.0002	0.03%
Cap and lead assembly	iron	7439-89-6	0.0657	115,897	34.93%	0.1881	33.18%
	copper	7440-50-8	0.1035	182,507	55.00%		
	tin	7440-31-5	0.0189	33,397	10.07%		
Over-coat / marking	silicone resin	9016-00-6	0.0379	66,791	87.88%	0.0431	7.60%
	silicone dioxide	14808-60-7	0.0032	5,689	7.49%		
	xylene	1330-20-7	0.0014	2,493	3.28%		
	aromatic solvent	64742-94-5	0.0006	1,027	1.35%		
Total Weight			0.5670				

\* Weights are approximate.



# Material Declaration Data Sheet

## ASRM2 (Formerly ASRM 2)

Mini - Anti-Surge Resistor

Date: **November 7, 2012**

Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)

Component Weight (g): **0.5670**

BOM Item	Material	CAS Number	Material Weight (g)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (g)	BOM Item % of Component
Ceramic core	aluminum oxide	1344-28-1	0.3222	568,224	96.00%	0.3356	59.19%
	silicon oxide	7631-86-9	0.0067	11,838	2.00%		
	magnesium oxide	1309-48-4	0.0034	5,919	1.00%		
	calcium oxide	1305-78-8	0.0034	5,919	1.00%		
Resistive element	tin-dioxide	18282-10-5	0.0002	300	100.00%	0.0002	0.03%
Cap and lead assembly	iron	7439-89-6	0.0657	115,897	34.93%	0.1881	33.18%
	copper	7440-50-8	0.1035	182,507	55.00%		
	tin	7440-31-5	0.0189	33,397	10.07%		
Over-coat / marking	silicone resin	9016-00-6	0.0379	66,791	87.88%	0.0431	7.60%
	silicone dioxide	14808-60-7	0.0032	5,689	7.49%		
	xylene	1330-20-7	0.0014	2,493	3.28%		
	aromatic solvent	64742-94-5	0.0006	1,027	1.35%		
Total Weight			0.5670				

\* Weights are approximate.