



Material Declaration Data Sheet

WW1 (Formerly WW 1)

General Purpose and Precision Wirewound Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (g): **0.3505**

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	0.0787	224,568	96.00%	0.0820	23.39%
	silicon oxide	7631-86-9	0.0016	4,678	2.00%		
	magnesium oxide	1309-48-4	0.0008	2,339	1.00%		
	calcium oxide	1305-78-8	0.0008	2,339	1.00%		
Resistive element	nickel	7440-02-0	0.0145	41,365	53.70%	0.0270	7.70%
	chromium	7440-47-3	0.0125	35,659	46.30%		
Cap and lead assembly	steel	7439-89-6	0.0774	220,802	37.59%	0.2059	58.74%
	copper	7440-50-8	0.1218	347,464	59.15%		
	tin	7440-31-5	0.0067	19,113	3.25%		
Over-coat / marking	silicone resin	9016-00-6	0.0297	84,726	83.33%	0.0356	10.17%
	silicone dioxide	14808-60-7	0.0028	8,102	7.97%		
	xylene	1330-20-7	0.0003	856	0.84%		
	aromatic solvent	64742-94-5	0.0028	7,988	7.86%		
Total Weight			0.3505				

* Weights are approximate.



Material Declaration Data Sheet

WW2 (Formerly WW 2)

General Purpose and Precision Wirewound Resistor

Date: **November 7, 2012**
 Component Weight (g): **0.5833**

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

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	0.1891	324,224	96.00%	0.1970	33.77%
	silicon oxide	7631-86-9	0.0039	6,755	2.00%		
	magnesium oxide	1309-48-4	0.0020	3,377	1.00%		
	calcium oxide	1305-78-8	0.0020	3,377	1.00%		
Resistive element	nickel	7440-02-0	0.0420	72,004	50.60%	0.0830	14.23%
	chromium	7440-47-3	0.0410	70,290	49.40%		
Cap and lead assembly	steel	7439-89-6	0.1120	192,011	43.38%	0.2582	44.27%
	copper	7440-50-8	0.1380	236,585	53.45%		
	tin	7440-31-5	0.0082	14,058	3.18%		
Over-coat / marking	silicone resin	9016-00-6	0.0383	65,661	84.92%	0.0451	7.73%
	silicone dioxide	14808-60-7	0.0032	5,486	7.10%		
	xylene	1330-20-7	0.0005	857	1.11%		
	aromatic solvent	64742-94-5	0.0031	5,315	6.87%		
Total Weight			0.5833				

* Weights are approximate.



Material Declaration Data Sheet

WW3 (Formerly WW 3)

General Purpose and Precision Wirewound Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (g): **0.7763**

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	0.2934	377,918	96.00%	0.3056	39.37%
	silicon oxide	7631-86-9	0.0061	7,873	2.00%		
	magnesium oxide	1309-48-4	0.0031	3,937	1.00%		
	calcium oxide	1305-78-8	0.0031	3,937	1.00%		
Resistive element	nickel	7440-02-0	0.0651	83,859	50.58%	0.1287	16.58%
	chromium	7440-47-3	0.0636	81,927	49.42%		
Cap and lead assembly	steel	7439-89-6	0.1190	153,291	43.75%	0.2720	35.04%
	copper	7440-50-8	0.1420	182,918	52.21%		
	tin	7440-31-5	0.0110	14,170	4.04%		
Over-coat / marking	silicone resin	9016-00-6	0.0594	76,517	84.86%	0.0700	9.02%
	silicone dioxide	14808-60-7	0.0050	6,441	7.14%		
	xylene	1330-20-7	0.0008	1,031	1.14%		
	aromatic solvent	64742-94-5	0.0048	6,183	6.86%		
Total Weight			0.7763				

* Weights are approximate.



Material Declaration Data Sheet

WW5 (Formerly WW 5)

General Purpose and Precision Wirewound Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (g): **2.7607**

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	1.0433	377,918	96.00%	1.0868	39.37%
	silicon oxide	7631-86-9	0.0217	7,873	2.00%		
	magnesium oxide	1309-48-4	0.0109	3,937	1.00%		
	calcium oxide	1305-78-8	0.0109	3,937	1.00%		
Resistive element	nickel	7440-02-0	0.2458	89,033	53.70%	0.4577	16.58%
	chromium	7440-47-3	0.2119	76,753	46.30%		
Cap and lead assembly	steel	7439-89-6	0.3636	131,711	37.59%	0.9673	35.04%
	copper	7440-50-8	0.5722	207,266	59.15%		
	tin	7440-31-5	0.0315	11,401	3.25%		
Over-coat / marking	silicone resin	9016-00-6	0.2074	75,142	83.33%	0.2489	9.02%
	silicone dioxide	14808-60-7	0.0198	7,185	7.97%		
	xylene	1330-20-7	0.0021	759	0.84%		
	aromatic solvent	64742-94-5	0.0196	7,084	7.86%		
Total Weight			2.7607				

* Weights are approximate.



Material Declaration Data Sheet

WW10 (Formerly WW 10)

General Purpose and Precision Wirewound Resistor

Date: **November 7, 2012**
 Component Weight (g): **6.7297**

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

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	2.5433	377,918	96.00%	2.6492	39.37%
	silicon oxide	7631-86-9	0.0530	7,873	2.00%		
	magnesium oxide	1309-48-4	0.0265	3,937	1.00%		
	calcium oxide	1305-78-8	0.0265	3,937	1.00%		
Resistive element	nickel	7440-02-0	0.5992	89,033	53.70%	1.1157	16.58%
	chromium	7440-47-3	0.5165	76,753	46.30%		
Cap and lead assembly	steel	7439-89-6	0.8864	131,711	37.59%	2.3579	35.04%
	copper	7440-50-8	1.3948	207,266	59.15%		
	tin	7440-31-5	0.0767	11,401	3.25%		
Over-coat / marking	silicone resin	9016-00-6	0.5057	75,142	83.33%	0.6068	9.02%
	silicone dioxide	14808-60-7	0.0484	7,185	7.97%		
	xylene	1330-20-7	0.0051	759	0.84%		
	aromatic solvent	64742-94-5	0.0477	7,084	7.86%		
Total Weight			6.7297				

* Weights are approximate.