



# Material Declaration Data Sheet

## CSS1206

### Ultra Precision Current Sensing Chip Resistors



Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **7.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	1.54	219,889	99.90%	1.54	22.01%
		7723-14-0	0.00	220	0.10%		
Overcoating phase	amorphous silicon	7631-86-9	0.14	19,990	100.00%	0.14	2.00%
CS metal	copper	7440-50-8	2.81	400,512	75.00%	3.74	53.40%
		iron	0.09	13,350	2.50%		
		aluminium	0.09	13,350	2.50%		
		chromium	0.75	106,803	20.00%		
Solder plating	tin	7440-31-5	0.91	129,934	100.00%	0.91	12.99%
Ni plating	nickel	7440-02-0	0.56	79,960	100.00%	0.56	8.00%
Screen printing ink	epoxy resin	N/A	0.03	3,998	50.00%	0.06	0.80%
		N/A	0.00	320	4.00%		
		N/A	0.03	3,598	45.00%		
		N/A	0.00	80	1.00%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.03	4,798	60.00%	0.06	0.80%
		N/A	0.02	2,799	35.00%		
		N/A	0.00	400	5.00%		
Total Weight			7.00				

Weights listed are approximate.



# Material Declaration Data Sheet

## CSS1810

### Ultra Precision Current Sensing Chip Resistors



Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **22.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	5.440	247,237	99.97%	5.44	24.73%
		7723-14-0	0.002	85	0.03%		
Overcoating phase	amorphous silicon	7631-86-9	0.750	34,086	100.00%	0.75	3.41%
CS metal	copper	7440-50-8	9.400	427,211	75.00%	10.34	46.97%
		iron	0.094	4,249	2.50%		
		aluminium	0.094	4,249	2.50%		
		chromium	0.748	33,995	20.00%		
Solder plating	tin	7440-31-5	3.600	163,613	100.00%	3.60	16.36%
Ni plating	nickel	7440-02-0	1.670	75,898	100.00%	1.67	7.59%
Screen printing ink	epoxy resin	N/A	0.045	2,045	50.72%	0.09	0.40%
		N/A	0.004	179	4.44%		
		N/A	0.039	1,768	43.85%		
		N/A	0.001	40	0.99%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.058	2,627	49.15%	0.12	0.53%
		N/A	0.053	2,418	45.24%		
		N/A	0.007	300	5.61%		
Total Weight			22.00				

Weights listed are approximate.



# Material Declaration Data Sheet

## CSS2010

### Ultra Precision Current Sensing Chip Resistors

Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **40.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	8.79	219,780	99.90%	8.80	22.00%
	phosphorus	7723-14-0	0.01	220	0.10%		
Overcoating phase	amorphous silicon	7631-86-9	0.80	20,000	100.00%	0.80	2.00%
CS metal	copper	7440-50-8	16.02	400,500	75.00%	21.36	53.40%
	iron	7439-89-6	0.53	13,350	2.50%		
	aluminium	7429-90-5	0.53	13,350	2.50%		
	chromium	7440-47-3	4.27	106,800	20.00%		
Solder plating	tin	7440-31-5	5.20	130,000	100.00%	5.20	13.00%
Ni plating	nickel	7440-02-0	3.20	80,000	100.00%	3.20	8.00%
Screen printing ink	epoxy resin	N/A	0.16	4,000	50.00%	0.32	0.80%
	diethylene	N/A	0.01	320	4.00%		
	naphtha	N/A	0.14	3,600	45.00%		
	additive	N/A	0.00	80	1.00%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.19	4,800	60.00%	0.32	0.80%
	filler	N/A	0.11	2,800	35.00%		
	ethylene glycol monobutyl ether	N/A	0.02	400	5.00%		
Total Weight			40.00				

Weights listed are approximate.



# Material Declaration Data Sheet

## CSS2512

### Ultra Precision Current Sensing Chip Resistors



Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **100.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component	
Terminal	copper	7440-50-8	21.98	219,800	99.91%	22.00	22.00%	
		7723-14-0	0.02	200	0.09%			
Overcoating phase	amorphous silicon	7631-86-9	2.00	20,000	100.00%	2.00	2.00%	
CS metal	copper	7440-50-8	40.05	400,500	75.00%	53.40	53.40%	
		iron	7439-89-6	1.34	13,350			2.50%
		aluminium	7429-90-5	1.34	13,350			2.50%
		chromium	7440-47-3	10.68	106,800			20.00%
Solder plating	tin	7440-31-5	13.00	130,000	100.00%	13.00	13.00%	
Ni plating	nickel	7440-02-0	8.00	80,000	100.00%	8.00	8.00%	
Screen printing ink	epoxy resin	N/A	0.40	4,000	50.00%	0.80	0.80%	
		diethylene	N/A	0.03	300			3.75%
		naphtha	N/A	0.36	3,600			45.00%
		additive	N/A	0.01	100			1.25%
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.48	4,800	60.00%	0.80	0.80%	
		filler	N/A	0.28	2,800			35.00%
		ethylene glycol monobutyl ether	N/A	0.04	400			5.00%
Total Weight			100.00					

Weights listed are approximate.



# Material Declaration Data Sheet

## CSSH2512

### Ultra Precision Current Sensing Chip Resistors

Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **100.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	21.98	219,800	99.91%	22.00	22.00%
	phosphorus	7723-14-0	0.02	200	0.09%		
Overcoating phase	amorphous silicon	7631-86-9	2.00	20,000	100.00%	2.00	2.00%
CS metal	copper	7440-50-8	40.05	400,500	75.00%	53.40	53.40%
	iron	7439-89-6	1.34	13,350	2.50%		
	aluminium	7429-90-5	1.34	13,350	2.50%		
	chromium	7440-47-3	10.68	106,800	20.00%		
Solder plating	tin	7440-31-5	13.00	130,000	100.00%	13.00	13.00%
Ni plating	nickel	7440-02-0	8.00	80,000	100.00%	8.00	8.00%
Screen printing ink	epoxy resin	N/A	0.40	4,000	50.00%	0.80	0.80%
	diethylene	N/A	0.03	300	3.75%		
	naphtha	N/A	0.36	3,600	45.00%		
	additive	N/A	0.01	100	1.25%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.48	4,800	60.00%	0.80	0.80%
	filler	N/A	0.28	2,800	35.00%		
	ethylene glycol monobutyl ether	N/A	0.04	400	5.00%		
Total Weight			100.00				

Weights listed are approximate.



# Material Declaration Data Sheet

**CSS2725**

**Ultra Precision Current Sensing Chip Resistors**

Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **120.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	26.37	219,780	99.90%	26.40	22.00%
	phosphorus	7723-14-0	0.03	220	0.10%		
Overcoating phase	amorphous silicon	7631-86-9	2.40	20,000	100.00%	2.40	2.00%
CS metal	copper	7440-50-8	48.06	400,500	75.00%	64.08	53.40%
	iron	7439-89-6	1.60	13,350	2.50%		
	aluminium	7429-90-5	1.60	13,350	2.50%		
	chromium	7440-47-3	12.82	106,800	20.00%		
Solder plating	tin	7440-31-5	15.60	130,000	100.00%	15.60	13.00%
Ni plating	nickel	7440-02-0	9.60	80,000	100.00%	9.60	8.00%
Screen printing ink	epoxy resin	N/A	0.48	4,000	50.00%	0.96	0.80%
	diethylene	N/A	0.04	320	4.00%		
	naphtha	N/A	0.43	3,600	45.00%		
	additive	N/A	0.01	80	1.00%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.58	4,800	60.00%	0.96	0.80%
	filler	N/A	0.34	2,800	35.00%		
	ethylene glycol monobutyl ether	N/A	0.05	400	5.00%		
Total Weight			120.00				

Weights listed are approximate.



# Material Declaration Data Sheet

**CSS2728**

**Ultra Precision Current Sensing Chip Resistors**

Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **140.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	30.77	219,780	99.90%	30.80	22.00%
	phosphorus	7723-14-0	0.03	220	0.10%		
Overcoating phase	amorphous silicon	7631-86-9	2.80	20,000	100.00%	2.80	2.00%
CS metal	copper	7440-50-8	56.07	400,500	75.00%	74.76	53.40%
	iron	7439-89-6	1.87	13,350	2.50%		
	aluminium	7429-90-5	1.87	13,350	2.50%		
	chromium	7440-47-3	14.95	106,800	20.00%		
Solder plating	tin	7440-31-5	18.20	130,000	100.00%	18.20	13.00%
Ni plating	nickel	7440-02-0	11.20	80,000	100.00%	11.20	8.00%
Screen printing ink	epoxy resin	N/A	0.56	4,000	50.00%	1.12	0.80%
	diethylene	N/A	0.04	320	4.00%		
	naphtha	N/A	0.50	3,600	45.00%		
	additive	N/A	0.01	80	1.00%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.67	4,800	60.00%	1.12	0.80%
	filler	N/A	0.39	2,800	35.00%		
	ethylene glycol monobutyl ether	N/A	0.06	400	5.00%		
Total Weight			140.00				

Weights listed are approximate.



# Material Declaration Data Sheet

## CSSH2728

### Ultra Precision Current Sensing Chip Resistors

Date: **May 28, 2013** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)  
 Component Weight (mg): **140.00**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Terminal	copper	7440-50-8	30.77	219,780	99.90%	30.80	22.00%
	phosphorus	7723-14-0	0.03	220	0.10%		
Overcoating phase	amorphous silicon	7631-86-9	2.80	20,000	100.00%	2.80	2.00%
CS metal	copper	7440-50-8	56.07	400,500	75.00%	74.76	53.40%
	iron	7439-89-6	1.87	13,350	2.50%		
	aluminium	7429-90-5	1.87	13,350	2.50%		
	chromium	7440-47-3	14.95	106,800	20.00%		
Solder plating	tin	7440-31-5	18.20	130,000	100.00%	18.20	13.00%
Ni plating	nickel	7440-02-0	11.20	80,000	100.00%	11.20	8.00%
Screen printing ink	epoxy resin	N/A	0.56	4,000	50.00%	1.12	0.80%
	diethylene	N/A	0.04	320	4.00%		
	naphtha	N/A	0.50	3,600	45.00%		
	additive	N/A	0.01	80	1.00%		
Screen printing Ink - Catalyst	polyamine adduct	N/A	0.67	4,800	60.00%	1.12	0.80%
	filler	N/A	0.39	2,800	35.00%		
	ethylene glycol monobutyl ether	N/A	0.06	400	5.00%		
Total Weight			140.00				

Weights listed are approximate.