



Material Declaration Data Sheet

RNCS0402 (Formerly RNCS 10)

Anti-Corrosive Tantalum Nitride Replacement Resistor

Date: **November 7, 2012**
 Component Weight (mg): **0.5492**

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

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Ceramic substrate	aluminum oxide	1344-28-1	0.499200	908,958	96.00%	0.5200	94.68%
	silicon oxide	7631-86-9	0.010400	18,937	2.00%		
	magnesium oxide	1309-48-4	0.005200	9,468	1.00%		
	calcium oxide	1305-78-8	0.005200	9,468	1.00%		
Inner termination layer	silver	7440-22-4	0.012380	22,542	100.00%	0.0124	2.25%
Resistive element	nickel	7440-02-0	0.001595	2,904	55.00%	0.0029	0.53%
	chromium	7440-47-3	0.001305	2,376	45.00%		
Passivation	silicon nitride	12033-89-5	0.004180	7,611	100.00%	0.0042	0.76%
Over-coat	synthetic resin	25265-77-4	0.004080	7,429	100.00%	0.0041	0.74%
Marking	ethyl cellulose	9004-57-3	0.002180	3,969	100.00%	0.0022	0.40%
Side termination	nickel	7440-02-0	0.000007	13	55.00%	0.0000	0.00%
	chromium	7440-47-3	0.000006	11	45.00%		
Middle termination layer	nickel	7440-02-0	0.000987	1,797	100.00%	0.0010	0.18%
Outer termination layer	tin	7440-31-5	0.002480	4,516	100.00%	0.0025	0.45%
Total Weight			0.5492				

* Weights are approximate.



Material Declaration Data Sheet

RNCS0603 (Formerly RNCS 16)

Anti-Corrosive Tantalum Nitride Replacement Resistor

Date: **November 7, 2012**
 Component Weight (mg): **1.8690**

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

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Ceramic substrate	aluminum oxide	1344-28-1	1.680000	898,876	96.00%	1.7500	93.63%
	silicon oxide	7631-86-9	0.035000	18,727	2.00%		
	magnesium oxide	1309-48-4	0.017500	9,363	1.00%		
	calcium oxide	1305-78-8	0.017500	9,363	1.00%		
Inner termination layer	silver	7440-22-4	0.047300	25,308	100.00%	0.0473	2.53%
Resistive element	nickel	7440-02-0	0.006518	3,487	55.00%	0.0119	0.63%
	chromium	7440-47-3	0.005333	2,853	45.00%		
Passivation	silicon nitride	12033-89-5	0.019000	10,166	100.00%	0.0190	1.02%
Over-coat	synthetic resin	25265-77-4	0.016200	8,668	100.00%	0.0162	0.87%
Marking	ethyl cellulose	9004-57-3	0.010000	5,350	100.00%	0.0100	0.54%
Side termination	nickel	7440-02-0	0.000028	15	55.00%	0.0001	0.00%
	chromium	7440-47-3	0.000023	12	45.00%		
Middle termination layer	nickel	7440-02-0	0.005150	2,755	100.00%	0.0052	0.28%
Outer termination layer	tin	7440-31-5	0.009450	5,056	100.00%	0.0095	0.51%
Total Weight			1.8690				

* Weights are approximate.



Material Declaration Data Sheet

RNCS0805 (Formerly RNCS 20)

Anti-Corrosive Tantalum Nitride Replacement Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (mg): **4.7540**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Ceramic substrate	aluminum oxide	1344-28-1	4.310400	906,689	96.00%	4.4900	94.45%
	silicon oxide	7631-86-9	0.089800	18,889	2.00%		
	magnesium oxide	1309-48-4	0.044900	9,445	1.00%		
	calcium oxide	1305-78-8	0.044900	9,445	1.00%		
Inner termination layer	silver	7440-22-4	0.119800	25,200	100.00%	0.1198	2.52%
Resistive element	nickel	7440-02-0	0.016720	3,517	55.00%	0.0304	0.64%
	chromium	7440-47-3	0.013680	2,878	45.00%		
Passivation	silicon nitride	12033-89-5	0.004000	841	100.00%	0.0040	0.08%
Over-coat	synthetic resin	25265-77-4	0.043330	9,114	100.00%	0.0433	0.91%
Marking	ethyl cellulose	9004-57-3	0.023750	4,996	100.00%	0.0238	0.50%
Side termination	nickel	7440-02-0	0.000099	21	55.00%	0.0002	0.00%
	chromium	7440-47-3	0.000081	17	45.00%		
Middle termination layer	nickel	7440-02-0	0.012720	2,676	100.00%	0.0127	0.27%
Outer termination layer	tin	7440-31-5	0.029820	6,273	100.00%	0.0298	0.63%
Total Weight			4.7540				

* Weights are approximate.



Material Declaration Data Sheet

RNCS1206 (Formerly RNCS 32)

Anti-Corrosive Tantalum Nitride Replacement Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (mg): **9.1900**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Ceramic substrate	aluminum oxide	1344-28-1	8.265600	899,412	96.00%	8.6100	93.69%
	silicon oxide	7631-86-9	0.172200	18,738	2.00%		
	magnesium oxide	1309-48-4	0.086100	9,369	1.00%		
	calcium oxide	1305-78-8	0.086100	9,369	1.00%		
Inner termination layer	silver	7440-22-4	0.228400	24,853	100.00%	0.2284	2.49%
Resistive element	nickel	7440-02-0	0.030910	3,363	55.00%	0.0562	0.61%
	chromium	7440-47-3	0.025290	2,752	45.00%		
Passivation	silicon nitride	12033-89-5	0.090000	9,793	100.00%	0.0900	0.98%
Over-coat	synthetic resin	25265-77-4	0.082200	8,945	100.00%	0.0822	0.89%
Marking	ethyl cellulose	9004-57-3	0.043500	4,733	100.00%	0.0435	0.47%
Side termination	nickel	7440-02-0	0.000165	18	55.00%	0.0003	0.00%
	chromium	7440-47-3	0.000135	15	45.00%		
Middle termination layer	nickel	7440-02-0	0.024000	2,612	100.00%	0.0240	0.26%
Outer termination layer	tin	7440-31-5	0.055400	6,028	100.00%	0.0554	0.60%
Total Weight			9.1900				

* Weights are approximate.



Material Declaration Data Sheet

RNCS2010 (Formerly RNCS 57)

Anti-Corrosive Tantalum Nitride Replacement Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (mg): **24.0000**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Ceramic substrate	aluminum oxide	1344-28-1	21.792000	908,000	96.00%	22.7000	94.58%
	silicon oxide	7631-86-9	0.454000	18,917	2.00%		
	magnesium oxide	1309-48-4	0.227000	9,458	1.00%		
	calcium oxide	1305-78-8	0.227000	9,458	1.00%		
Inner termination layer	silver	7440-22-4	0.533700	22,238	100.00%	0.5337	2.22%
Resistive element	nickel	7440-02-0	0.068200	2,842	55.00%	0.1240	0.52%
	chromium	7440-47-3	0.055800	2,325	45.00%		
Passivation	silicon nitride	12033-89-5	0.210000	8,750	100.00%	0.2100	0.88%
Over-coat	synthetic resin	25265-77-4	0.186800	7,783	100.00%	0.1868	0.78%
Marking	ethyl cellulose	9004-57-3	0.090700	3,779	100.00%	0.0907	0.38%
Side termination	nickel	7440-02-0	0.000385	16	55.00%	0.0007	0.00%
	chromium	7440-47-3	0.000315	13	45.00%		
Middle termination layer	nickel	7440-02-0	0.034400	1,433	100.00%	0.0344	0.14%
Outer termination layer	tin	7440-31-5	0.119700	4,988	100.00%	0.1197	0.50%
Total Weight			24.0000				

* Weights are approximate.



Material Declaration Data Sheet

RNCS2512 (Formerly RNCS 63)

Anti-Corrosive Tantalum Nitride Replacement Resistor



Date: **November 7, 2012** Max Temp: **260°C** (Contact factory for detailed soldering recommendations.)
 Component Weight (mg): **38.8000**

BOM Item	Material	CAS Number	Material Weight (mg)	Material PPM of Component	Material % of BOM Item	BOM Item Weight (mg)	BOM Item % of Component
Ceramic substrate	aluminum oxide	1344-28-1	34.886400	899,134	96.00%	36.3400	93.66%
	silicon oxide	7631-86-9	0.726800	18,732	2.00%		
	magnesium oxide	1309-48-4	0.363400	9,366	1.00%		
	calcium oxide	1305-78-8	0.363400	9,366	1.00%		
Inner termination layer	silver	7440-22-4	0.958500	24,704	100.00%	0.9585	2.47%
Resistive element	nickel	7440-02-0	0.132440	3,413	55.00%	0.2408	0.62%
	chromium	7440-47-3	0.108360	2,793	45.00%		
Passivation	silicon nitride	12033-89-5	0.400000	10,309	100.00%	0.4000	1.03%
Over-coat	synthetic resin	25265-77-4	0.342000	8,814	100.00%	0.3420	0.88%
Marking	ethyl cellulose	9004-57-3	0.187000	4,820	100.00%	0.1870	0.48%
Side termination	nickel	7440-02-0	0.000825	21	55.00%	0.0015	0.00%
	chromium	7440-47-3	0.000675	17	45.00%		
Middle termination layer	nickel	7440-02-0	0.096400	2,485	100.00%	0.0964	0.25%
Outer termination layer	tin	7440-31-5	0.233800	6,026	100.00%	0.2338	0.60%
Total Weight			38.8000				

* Weights are approximate.