

# Material Declaration



Package Type	Half
Package Size	13.2 x 13.2 mm
Terminal Finish	Matte Tin
Finish Thickness	8 microns
Weight (mg)	2200.000
MSL	1

Series	CPPL
--------	------

Item	Material	Element	Content (mg)	Content (wt%)	CAS #
Cover	Stainless Steel	Nickel (Ni)	40.222	1.828%	7440-02-0
		Chromium (Cr)	89.689	4.077%	7740-47-3
		Iron (Fe)	354.004	16.091%	7439-89-6
		Manganese (Mn)	5.114	0.232%	7439-96-5
		Silicon (Si)	2.360	0.107%	7440-21-3
		Carbon (C)	0.216	0.010%	7440-44-0
		Sulphur (S)	0.005	0.0002%	7704-34-9
		Phosphorus (P)	0.103	0.005%	7723-14-0
Header	Iron Alloy	Iron (Fe)	1350.727	61.397%	7439-89-6
		Carbon (C)	0.676	0.031%	7440-44-0
		Silicon (Si)	0.135	0.006%	7440-21-3
		Manganese (Mn)	3.116	0.142%	7439-96-5
		Phosphorus (P)	0.189	0.009%	7723-14-0
		Sulphur (S)	0.068	0.003%	7704-34-9
	PTH Glass	Glass Frit	8.236	0.374%	65997-18-4
	Standoff Glass	Glass Frit	28.765	1.308%	65997-18-4
	Kovar	Iron (Fe)	15.520	0.705%	7439-89-6
		Nickel (Ni)	8.574	0.390%	7440-02-0
		Cobalt (Co)	5.040	0.229%	7440-48-4
	Solder Dip	Tin (Sn)	2.966	0.135%	7440-31-5
		Silver (Ag)	0.092	0.004%	7440-22-4
Copper (Cu)		0.015	0.001%	7440-50-8	
Cover	Kovar	Nickel (Ni)	6.774	0.308%	7440-02-0
		Cobalt (Co)	3.943	0.179%	7440-48-4
		Iron (Fe)	12.666	0.576%	7439-89-6
Base	Ceramic	Alumina (Al2O3)	86.460	3.930%	1344-28-1
		Silicon Dioxide (SiO2)	3.436	0.156%	14808-60-7
		Chromium Oxide (Cr2O3)	3.690	0.168%	1308-38-9
		Titanium Oxide (TiO2)	0.958	0.044%	13463-67-7
		Calcium Oxide (CaO)	0.330	0.015%	1305-79-9
		Magnesium Oxide (MgO)	0.474	0.022%	1309-48-4
		Tungsten (W)	13.107	0.596%	7440-33-7
		Seal Ring	Nickel (Ni)	5.122	0.233%
	Gold (Au)		0.584	0.027%	7440-57-5
	Iron (Fe)		6.399	0.291%	7439-89-6
	Cobalt (Co)		2.434	0.111%	7440-48-4
	Silver Solder	Silver (Ag)	1.872	0.085%	7440-22-4
		Copper (Cu)	0.330	0.015%	7440-50-8
	IC	IC	Aluminum (Al)	0.003	0.0001%
Titanium (Ti)			0.001	0.0001%	7440-32-6

		Silicon (Si)	1.057	0.048%	7440-21-3	
	Gold	Gold (Au)	0.316	0.014%	7440-57-5	
	Adhesive	Silver (Ag)	0.00021	0.000009%	7440-22-4	
		Epoxy	0.00007	0.000003%		
<b>Capacitor</b>	Body	Nickel (Ni)	0.010	0.0005%	7440-02-0	
		BaTiO3	0.830	0.038%	12047-27-7	
	Termination	Nickel (Ni)	0.013	0.001%	7440-02-0	
		Tin (Sn)	0.019	0.001%	7440-31-5	
		Copper (Cu)	0.025	0.001%	7440-50-8	
<b>Crystal</b>	Crystal	Silicon Dioxide (SiO2)	1.123	0.051%	14808-60-7	
	Electrode	Silver (Ag)	0.021	0.001%	7440-22-4	
		Nickel (Ni)	0.00018	0.000008%	7440-02-0	
	Adhesive	Silver (Ag)	0.00041	0.000019%	7440-22-4	
		Silicon (Si)	0.00014	0.000006%	7440-21-3	
<b>Circuit Board</b>	FR-4	Phenol, 4,4'-(1-methylethylidene)bis(2,6-dibromo-,polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis(phenol)	42.510	1.932%	26265-08-7	
		Copper (Cu)	23.187	1.054%	7440-50-8	
		GF-Fibre	63.121	2.869%		
	Copper Anode	Copper (Cu)	2.153	0.098%	7440-50-8	
	Soldermask	Bisphenol A, epichlorohydrin polymer	0.358	0.016%	25068-38-6	
		(2-Methoxymethylethoxy)propanol	0.090	0.004%	34590-94-8	
		Barium sulphate	0.313	0.014%	7727-43-7	
		2-Methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	0.090	0.004%	71868-10-5	
		Dipropylene glycol ethyl ether	0.045	0.002%	15764-24-6	
		Nickel				
	ENIG	bis(sulphamidate)	0.289	0.013%	13770-89-3	
		Gold (Au)	0.009	0.0004%	7440-57-5	
	<b>Total</b>			<b>2200.000</b>	<b>100.000%</b>	



Cardinal Components, Inc.  
145 Rt. 46 West  
Wayne, NJ 07470

TEL: (973)785-1333  
E-MAIL: sales@cardinalxtal.com  
WEB: http://www.cardinalxtal.com