

AUTO GRADE CURRENT SENSING CHIP RESISTOR

- PWR SERIES -

■ PWR06 (0603) | PWR10 (0805)

NO.	BREAKDOWN OF PART	MATERIAL NAME	SUBSTANCE NAME	CAS NO.	%	PWR06 (0603)				PWR10 (0805)			
						TOTAL (g)		0.0020		TOTAL (g)		0.0044	
						WEIGHT (mg)	SUBSTANCE MASS (mg/pc)	PERCENTAGE (%)	SUBSTANCE PERCENTAGE (%)	WEIGHT (mg)	SUBSTANCE MASS (mg/pc)	PERCENTAGE (%)	SUBSTANCE PERCENTAGE (%)
1	Substrate	Ceramics	Al ₂ O ₃	1344-28-1	96	1.81154	1.73908	88.72	85.17	3.88001	3.72481	88.82	85.27
			SiO ₂	14808-60-7	3		0.05435		2.66		0.11640		2.66
			MgO	1309-48-4	1		0.01812		0.89		0.03880		0.89
2	Upside Electrode	Paste	Ag	7440-22-4	99	0.02480	0.02455	1.21	1.20	0.06792	0.06724	1.56	1.54
			Pd	7440-05-3	1		0.00025		0.01		0.00068		0.02
3	Backside Electrode	Paste	Ag	7440-22-4	100	0.00582	0.00582	0.28	0.28	0.01802	0.01802	0.41	0.41
4	Edge Electrode	Alloy	Ni	7440-02-0	55	0.00058	0.00032	0.03	0.02	0.00100	0.00055	0.02	0.01
			Cr	7440-47-3	45		0.00026		0.01		0.00045		0.01
5	Resistive Element	Paste	R ₂ O ₂	12036-10-1	33	0.01370	0.00452	0.67	0.22	0.02879	0.00950	0.66	0.22
			PbO	1317-36-8	13		0.00178		0.09		0.00374		0.09
			Ag	7440-22-4	27		0.00370		0.18		0.00777		0.18
			Silicon Dioxide	7631-86-9	27		0.00370		0.18		0.00777		0.18
6	Nickel Plating	Nickel	Ni	7440-02-0	100	0.05317	0.05317	3.63	3.63	0.16788	0.16788	3.48	3.48
7	Tin Plating	Tin	Sn	7440-31-5	100	0.05317	0.05317	3.63	3.63	0.16788	0.16788	3.48	3.48
8	Primary Overcoat	Paste	Glass Frit	65997-18-4	100	0.00750	0.00750	0.37	0.37	0.01239	0.01239	0.28	0.28
9	Secondary Overcoat	Paste	Bisphenol A Type Epoxy Resin	25068-38-6	38	0.02772	0.01053	1.36	0.52	0.05411	0.02056	1.24	0.47
			Carbon black	1333-86-4	6		0.00166		0.08		0.00325		0.07
			Silicon Dioxide	60676-86-0	50		0.01386		0.68		0.02706		0.62
			Trade Secret	-	6		0.00166		0.08		0.00325		0.07
10	Marking	Ink	Bisphenol A Type Epoxy Resin	25068-38-6	80	0.00200	0.00160	0.10	0.08	0.00200	0.00160	0.05	0.04
			TiO ₂	13463-67-7	20		0.00040		0.02		0.00040		0.01

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- PWR SERIES -

■ PWR12 (1206) | PWR14 (1210)

NO.	BREAKDOWN OF PART	MATERIAL NAME	SUBSTANCE NAME	CAS NO.	%	PWR12 (1206)				PWR14 (1210)			
						TOTAL (g)		0.0089		TOTAL (g)		0.0160	
						WEIGHT (mg)	SUBSTANCE MASS (mg/pc)	PERCENTAGE (%)	SUBSTANCE PERCENTAGE (%)	WEIGHT (mg)	SUBSTANCE MASS (mg/pc)	PERCENTAGE (%)	SUBSTANCE PERCENTAGE (%)
1	Substrate	Ceramics	Al ₂ O ₃	1344-28-1	96	8.14207	7.81639	91.01	87.37	14.23706	13.66758	89.22	85.65
			SiO ₂	14808-60-7	3		0.24426		2.73		0.42711		2.68
			MgO	1309-48-4	1		0.08142		0.91		0.14237		0.89
2	Upside Electrode	Paste	Ag	7440-22-4	99	0.08061	0.07980	0.90	0.89	0.25712	0.25455	1.61	1.59
			Pd	7440-05-3	1		0.00081		0.01		0.00257		0.02
3	Backside Electrode	Paste	Ag	7440-22-4	100	0.03609	0.03609	0.40	0.40	0.08206	0.08206	0.51	0.51
4	Edge Electrode	Alloy	Ni	7440-02-0	55	0.00137	0.00075	0.02	0.01	0.00224	0.00123	0.01	0.006
			Cr	7440-47-3	45		0.00062		0.01		0.00101		0.005
5	Resistive Element	Paste	R ₂ O ₂	12036-10-1	33	0.03994	0.01318	0.84	0.28	0.20447	0.06748	1.02	0.34
			PbO	1317-36-8	13		0.00519		0.11		0.02658		0.13
			Ag	7440-22-4	27		0.01078		0.23		0.05521		0.28
			Silicon Dioxide	7631-86-9	27		0.01078		0.23		0.05521		0.28
6	Nickel Plating	Nickel	Ni	7440-02-0	100	0.23353	0.23353	2.61	2.61	0.47005	0.47005	2.95	2.95
7	Tin Plating	Tin	Sn	7440-31-5	100	0.23353	0.23353	2.61	2.61	0.47005	0.47005	2.95	2.95
8	Primary Overcoat	Paste	Glass Frit	65997-18-4	100	0.04136	0.04136	0.46	0.46	0.08684	0.08684	0.54	0.54
9	Secondary Overcoat	Paste	Bisphenol A Type Epoxy Resin	25068-38-6	38	0.08750	0.03325	1.11	0.42	0.18200	0.06916	1.14	0.43
			Carbon black	1333-86-4	6		0.00525		0.07		0.01092		0.07
			Silicon Dioxide	60676-86-0	50		0.04375		0.56		0.09100		0.57
			Trade Secret	-	6		0.00525		0.07		0.01092		0.07
10	Marking	Ink	Bisphenol A Type Epoxy Resin	25068-38-6	80	0.00400	0.00320	0.04	0.03	0.00811	0.00649	0.05	0.04
			TiO ₂	13463-67-7	20		0.00080		0.01		0.00162		0.01



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- PWR SERIES -

■ PWR20 (2010) | PWR25 (2512)

NO.	BREAKDOWN OF PART	MATERIAL NAME	SUBSTANCE NAME	CAS NO.	%	PWR20 (2010)				PWR25 (2512)			
						TOTAL (g)		0.0242		TOTAL (g)		0.0394	
						WEIGHT (mg)	SUBSTANCE MASS (mg/pc)	PERCENTAGE (%)	SUBSTANCE PERCENTAGE (%)	WEIGHT (mg)	SUBSTANCE MASS (mg/pc)	PERCENTAGE (%)	SUBSTANCE PERCENTAGE (%)
1	Substrate	Ceramics	Al ₂ O ₃	1344-28-1	96	22.07801	21.19489	91.07	87.43	36.14776	34.70185	91.64	87.97
			SiO ₂	14808-60-7	3		0.66234		2.73		1.08443		2.75
			MgO	1309-48-4	1		0.22078		0.91		0.36148		0.92
2	Upside Electrode	Paste	Ag	7440-22-4	99	0.26177	0.25915	1.20	1.19	0.44658	0.44211	1.16	1.15
			Pd	7440-05-3	1		0.00262		0.01		0.00447		0.01
3	Backside Electrode	Paste	Ag	7440-22-4	100	0.08152	0.08152	0.34	0.34	0.10433	0.10433	0.26	0.26
4	Edge Electrode	Alloy	Ni	7440-02-0	55	0.00219	0.00120	0.01	0.006	0.00281	0.00155	0.01	0.006
			Cr	7440-47-3	45		0.00099		0.005		0.00126		0.005
5	Resistive Element	Paste	R _u O ₂	12036-10-1	33	0.27655	0.09126	1.27	0.42	0.56647	0.18694	1.47	0.49
			PbO	1317-36-8	13		0.03595		0.17		0.07364		0.19
			Ag	7440-22-4	27		0.07467		0.34		0.15295		0.40
			Silicon Dioxide	7631-86-9	27		0.07467		0.34		0.15295		0.40
6	Nickel Plating	Nickel	Ni	7440-02-0	100	0.47881	0.47881	1.98	1.98	0.61182	0.61182	1.55	1.55
7	Tin Plating	Tin	Sn	7440-31-5	100	0.47881	0.47881	1.98	1.98	0.61182	0.61182	1.55	1.55
8	Primary Overcoat	Paste	Glass Frit	65997-18-4	100	0.25796	0.25796	0.86	0.86	0.47556	0.47556	0.95	0.95
9	Secondary Overcoat	Paste	Bisphenol A Type Epoxy Resin	25068-38-6	38	0.27630	0.10499	1.26	0.48	0.41975	0.15951	1.38	0.52
			Carbon black	1333-86-4	6		0.01658		0.08		0.02519		0.08
			Silicon Dioxide	60676-86-0	50		0.13815		0.63		0.20988		0.69
			Trade Secret	-	6		0.01658		0.08		0.02519		0.08
10	Marking	Ink	Bisphenol A Type Epoxy Resin	25068-38-6	80	0.00808	0.00646	0.03	0.02	0.01310	0.01048	0.03	0.02
			TiO ₂	13463-67-7	20		0.00162		0.01		0.00262		0.01