



Semiconductor Device Type: QVC-PBGA-484-23x23x2.44mm-SnPb						Package Homogeneous Materials				
Sub-Component	Basic Substance	CAS Number	% Total Weight	mg/part	ppm	44.46	(mg) Total	Die	% of Total Weight	2.13
Die	Silicon	7440-21-3	2.13	44.46	21268		Silicon	7440-21-3	100.00	
Substrate	Glass oxide	65997-17-3	9.00	188.09	89977		Total		100.00	
Substrate	Silicon dioxide	7631-86-9	4.27	89.29	42716					
Substrate	Bismaleimide-Triazine resin	Trade Secret	2.20	45.98	21994	647.20	(mg) Total	Substrate	% of Total Weight	30.96
Substrate	Epoxy Resin	Trade Secret	1.53	31.92	15269		Glass oxide	65997-17-3	29.06	
Substrate	Other	Trade Secret	1.18	24.70	11815		Silicon dioxide	7631-86-9	13.80	
Substrate	Glass oxide	65997-17-3	2.78	58.05	27770		Bismaleimide-Triazine resin	Trade Secret	7.10	
Substrate	Silicon dioxide	7631-86-9	1.32	27.56	13184		Epoxy Resin	Trade Secret	4.93	
Substrate	Bismaleimide-Triazine resin	Trade Secret	0.68	14.19	6788		Other	Trade Secret	3.82	
Substrate	Epoxy Resin	Trade Secret	0.47	9.85	4713		Glass oxide	65997-17-3	8.97	
Substrate	Other	Trade Secret	0.36	7.62	3647		Silicon dioxide	7631-86-9	4.26	
Substrate	Copper	7440-50-8	3.25	68.02	32540		Bismaleimide-Triazine resin	Trade Secret	2.19	
Substrate	Cured Resin	Trade Secret	2.54	53.12	25409		Epoxy Resin	Trade Secret	1.52	
Substrate	Phthalocyanine Blue	147-14-8	0.01	0.14	67		Other	Trade Secret	1.18	
Substrate	Organic Pigment	Trade Secret	0.01	0.14	67		Copper	7440-57-5	10.51	
Substrate	Silica	7631-86-9	0.02	0.35	168		Cured Resin	Trade Secret	8.21	
Substrate	Barium sulfate	7727-43-7	0.70	14.63	7000		Phthalocyanine Blue	147-14-8	0.02	
Substrate	Talc	14807-96-6	0.07	1.48	707		Organic Pigment	Trade Secret	0.02	
Substrate	Antifoamer and Leveling Agent	Trade Secret	0.02	0.49	236		Silica	7631-86-9	0.05	
Substrate	Nickel	7440-02-0	0.50	10.55	5047		Barium sulfate	7727-43-7	2.26	
Substrate	Gold	7440-57-5	0.05	1.04	495		Talc	14807-96-6	0.23	
Die Attach	Silver	7440-22-4	0.08	1.59	762		Antifoamer and Leveling Agent	Trade Secret	0.08	
Die Attach	Tetramethylene dimethacrylate	2082-81-7	0.01	0.11	53		Nickel	7440-02-0	1.63	
Die Attach	Difunctional Acrylic Esters	Trade Secret	0.00	0.01	4		Gold	7440-57-5	0.16	
Bonding Wire	Gold	7440-57-5	1.65	34.50	16505		Total		100.00	
Bonding Wire	Palladium	7440-05-3	0.02	0.35	167					
Mold Compound	Solid Epoxy Resin	85954-11-6	2.08	43.53	20823	1.71	(mg) Total	Die Attach	% of Total Weight	0.08
Mold Compound	Hardener	Trade Secret	1.89	39.57	18930		Silver	7440-22-4	93.00	
Mold Compound	Fused Silica	60676-86-0	33.32	696.43	333162		Tetramethylene dimethacrylate	2082-81-7	6.50	
Mold Compound	Carbon Black	1333-86-4	0.19	3.96	1893		Difunctional Acrylic Esters	Trade Secret	0.50	
Mold Compound	Metal Hydroxide	Trade Secret	0.19	3.96	1893		Total		100.00	
Mold Compound	Other	Trade Secret	0.19	3.96	1893					
Solder Ball	Tin	7440-31-5	17.20	359.57	172014	34.85	(mg) Total	Bonding Wire	% of Total Weight	1.67
Solder Ball	Lead	7439-92-1	10.10	211.18	101024		Gold	7440-57-5	99.00	
TOTALS:			100.00	2090.38	1,000,000		Palladium	7440-05-3	1.00	
2090.38 mg Total Mass							Total		100.00	
						791.40	(mg) Total	Mold Compound	% of Total Weight	37.86
							Solid Epoxy Resin	85954-11-6	5.50	
							Hardener	Trade Secret	5.00	
							Fused Silica	60676-86-0	88.00	
							Carbon Black	1333-86-4	0.50	
							Metal Hydroxide	Trade Secret	0.50	
							Other	Trade Secret	0.50	
							Total		100.00	
						570.75	(mg) Total	Solder Ball	% of Total Weight	27.30
							Tin	7440-31-5	63.00	
							Lead	7439-92-1	37.00	
						2090.38	Total		100.00	100.00

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