

Product / Package Information	
Package	LGA_CAV- SiP/ Module
Body Size	5X5
Lead Count	24
Terminal Finish	NiPdAu

Environmental Compliance Information	
RoHS Compliant	Yes
High Temperature Compliant	Yes
Halogen Free Compliant	Yes
REACH SVHC Compliant	Yes

Materials Declaration

Substrate							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Copper & its alloy	Copper	7440-50-8	1.51 E-02	67.64	676400	28.47494	284749
Other organic materials	Thermosetting resin	Trade secret	2.03 E-03	9.09	90900	3.82669	38267
Other inorganic materials	Glass cloth	65997-17-3	1.60 E-03	7.17	71700	3.01841	30184
Other organic materials	Acrylate resin	Trade secret	1.17 E-03	5.244	52440	2.20761	22076
Other organic materials	Epoxy resin	Trade secret	5.08 E-04	2.28	22800	0.95983	9598
Other inorganic materials	Barium Sulfate	7727-43-7	5.08 E-04	2.28	22800	0.95983	9598
Other inorganic materials	Silica	Trade secret	5.08 E-04	2.28	22800	0.95983	9598
Other inorganic materials	Acrylicestermonomer	Trade secret	2.37 E-04	1.064	10640	0.44792	4479
Other inorganic materials	Organic pigments	Trade secret	1.69 E-05	0.076	760	0.03199	320
Other inorganic materials	Phthalocyanineblue	Trade secret	1.69 E-05	0.076	760	0.03199	320
Other inorganic materials	Talc(containing no asbest fibers)	14807-96-6	8.47 E-05	0.38	3800	0.15997	1600
Other inorganic materials	Photoinitiator	Trade secret	8.47 E-05	0.38	3800	0.15997	1600
Other inorganic materials	Amine compounds	Trade secret	8.47 E-05	0.38	3800	0.15997	1600
Other inorganic materials	Additives	Trade secret	8.47 E-05	0.38	3800	0.15997	1600
Other inorganic materials	Defoamers/leveling agent etc.	Trade secret	8.47 E-05	0.38	3800	0.15997	1600
Nickel & its alloys	Nickel	7440-02-0	1.12 E-04	0.5	5000	0.21049	2105
Precious Metals	Palladium	7440-05-3	4.46 E-05	0.2	2000	0.08420	842
Precious Metals	Gold	7440-57-5	4.46 E-05	0.2	2000	0.08420	842
Subtotal			2.23 E-02	100.00	1000000	42.09778	420978

Chip							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Gallium Arsenide	1303-00-0	1.24E-03	100.00	1000000	2.34988	23499

Bond Wire							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Precious metals	Gold	7440-57-5	5.70 E-05	99.00	990000	0.10767	1077
Precious metals	Palladium	7440-05-3	5.76 E-07	1.00	10000	0.00109	11
Subtotal			5.76 E-05	100.00	1000000	0.10876	1088

Lid Shield material							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other organic materials	Liquid Crystal Polynmer	Proprietary	2.76 E-04	70.00	700000	0.52039	5204
Other organic materials	Glass Fiber	Proprietary	1.18 E-04	30.00	300000	0.22302	2230
Subtotal			3.94 E-04	100.00	1000000	0.74341	7434

Lid Shield Attach material							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Silicon dioxide	60676-86-0	7.15 E-04	48.30	1815236	1.34947	13495
Other organic materials	Bismaleimide monomer	TS #10049	4.63 E-04	31.25	1174454	0.87310	8731
Other organic materials	Acrylate monomer	TS #10050	1.26 E-04	8.52	320203	0.23804	2380
Thermoset	Epoxy resin	TS #10042	1.26 E-04	8.52	320203	0.23804	2380
Other organic materials	Acrylic resin	TS #10051	5.05 E-05	3.41	128156	0.09527	953
Subtotal			1.48 E-03	100.00	3758253	2.79393	27939

Terminal Finish							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Nickel & its alloys	Nickel	7440-02-0	1.42 E-02	81.91	819149	26.75429	267543
Precious Metals	Pallidium	7440-05-3	2.21 E-03	12.77	127660	4.16950	41695
Precious Metals	Gold	7440-57-5	9.20 E-04	5.32	53191	1.73729	17373
Subtotal			1.73 E-02	100.00	1000000	32.66108	326611

Die Attach 1							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Precious metals	Silver	7440-22-4	9.22 E-05	75.0	750000	0.17400	1740
Others	Diluent, proprietary	Trade Secret	6.14 E-06	5.0	50000	0.01160	116
Other organic materials	Epoxy, proprietary	Trade Secret	1.23 E-05	10.0	100000	0.02320	232
Other organic materials	Resin, proprietary	Trade Secret	1.23 E-05	10.0	100000	0.02320	232
Subtotal			1.23 E-04	100.00	1000000	0.23200	2320

Resistors							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Ceramic substrate	Aluminum oxide	1344-28-1	1.09 E-04	96.00	900000	0.20533	205331
	Silicon dioxide	14808-60-7	3.40 E-06	3.00	30000	0.00642	64.17
	Magnesium oxide	1309-48-4	1.13 E-06	1.00	10000	0.00214	21.39
	Subtotal		1.13 E-04	100.00	1000000	0.21389	2138.87
Inner termination - top side	Silver	7440-22-4	4.04 E-06	68.47	684700	0.00763	76.26
	Terrineol	8000-41-7	5.12 E-07	8.67	86700	0.00097	9.66
	Carbon black	1333-86-4	1.95 E-08	0.33	3300	0.00004	0.37
	Solvent naohtha	64742-95-6	1.95 E-08	0.33	3300	0.00004	0.37
	Nickel	7440-02-0	3.66 E-07	6.20	62000	0.00069	6.91
	Diethvlene olvcol monoethvl etheracetate	112-15-2	5.42 E-07	9.18	91800	0.00102	10.22
	Epichlorohydrin resin	25068-38-6	1.16 E-07	1.96	19600	0.00022	2.18
	Glvcidoxvoroavl trimethoxv silane	2530-83-8	1.53 E-08	0.26	2600	0.00003	0.29
	o-Crezol novolac epoxv	29690-82-2	2.33 E-07	3.95	39500	0.00044	4.40
	Ouaternarv ammonium compound	61789-80-8	3.84 E-08	0.65	6500	0.00007	0.72
	Subtotal		5.90 E-06	100.00	1000000	0.01114	111.58
Inner termination - bottom side	Silver	7440-22-4	1.50 E-06	50.00	500000	0.00283	28.32
	Glass frit	65997-18-4	6.00 E-08	2.00	20000	0.00011	1.13
	Epoxv resin	25928-94-3	2.25 E-07	7.50	75000	0.00042	4.25
	Resins	9004-57-3	2.40 E-07	8.00	80000	0.00045	4.53
	Terrineol	8000-41-7	6.00 E-07	20.00	200000	0.00113	11.33
	Butvl carbitol	112-34-5	3.75 E-07	12.50	125000	0.00071	7.08
Resistive element	Subtotal		3.00 E-06	100.00	1000000	0.00566	56.63
	Ruthenium oxide	12036-10-1	7.50 E-07	25.00	250000	0.00142	14.16
	Resin	9004-57-3	9.00 E-07	30.00	300000	0.00170	16.99
	Lead borosilicate glass	undefined	1.35 E-06	45.00	450000	0.00255	25.49
Pre-coat	Subtotal		3.00 E-06	100.00	1000000	0.00566	56.63
	Glass frit	65997-18-4	1.13 E-06	75.00	750000	0.00212	21.24
	Terrineol	8000-41-7	3.75 E-07	25.00	250000	0.00071	7.08
	Subtotal		1.50 E-06	100.00	1000000	0.00283	28.32
Over-coat	Epoxy	9016-00-6	1.44 E-06	60.00	600000	0.00272	27.18
	Silicon dioxide	60676-86-0	5.52 E-07	23.00	230000	0.00104	10.42
	Talc	14807-96-6	4.08 E-07	17.00	170000	0.00077	7.70
	Subtotal		2.40 E-06	100.00	1000000	0.00453	45.31
Middle termination	Nickel	7440-02-0	6.90 E-06	100.00	1000000	0.01303	130.26
Side termination	Nickel	7440-02-0	1.20 E-06	80.00	800000	0.00227	22.65
	Chromium	7440-47-3	3.00 E-07	20.00	200000	0.00057	5.66
	Subtotal		1.50 E-06	100.00	1000000	0.00283	28.32
Outer termination	Tin	7440-31-5	6.30 E-06	100.00	1000000	0.01189	118.93
Subtotal			1.44E-04	100.00	1000000	0.27146	2714.85

Capacitor 1							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Calcium zirconium oxide (CaZrO3)	12013-47-7	8.90 E-04	74.17	741667	1.68014	16801
Other inorganic materials	Miscellaneous	Proprietarv	1.60 E-04	13.33	133333	0.30205	3020
Nickel & its alloys	Nickel	7440-02-0	9.00 E-05	7.50	75000	0.16990	1699
Copper & its alloy	Copper	7440-50-8	1.00 E-05	0.83	8333	0.01888	189
Tin & its alloys	Tin	7440-31-5	5.00 E-05	4.17	41667	0.09439	944
Subtotal			1.20 E-03	100.00	1000000	2.26535	22654

Capacitor 2							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other inorganic materials	Ceramic	66402-68-4	1.78 E-03	68.46	684615	3.36027	33603
Nickel & its alloys	Nickel	7440-02-0	3.60 E-04	13.85	138462	0.67961	6796
Copper & its alloy	Copper	7440-50-8	4.00 E-04	15.38	153846	0.75512	7551
Nickel & its alloys	Nickel	7440-02-0	3.00 E-05	1.15	11538	0.05663	566
Tin & its alloys	Tin	7440-31-5	3.00 E-05	1.15	11538	0.05663	566
Subtotal			2.60 E-03	100.00	1000000	4.90826	49083

Inductor							
Description	Substance	CAS#	Weight (g)	Homogeneous Material Level		Component Level	
				Percentage (%)	PPM	Percentage (%)	PPM
Other organic materials	Ceramic	1309-37-1	1.97 E-04	56.00	560000	0.37164	3716
Other organic materials	Iron(III) oxide	1314-13-2	5.98 E-05	17.00	170000	0.11282	1128
Other organic materials	Zinc oxide	1313-99-1	5.98 E-05	17.00	170000	0.16282	1628
Other organic materials	Nickel oxide	1317-38-0	2.46 E-05	7.00	70000	0.04645	465
Other organic materials	Copper oxide	Misc	3.52 E-06	1.00	10000	0.00664	66
Other organic materials	Bismuth oxide	1304-76-3	3.52 E-06	1.00	10000	0.00664	66
Other organic materials	Tin dioxide	18282-10-5	3.52 E-06	1.00	10000	0.00664	66
Others	Subtotal		3.52 E-04	100.00	1000000	0.66364	6636
	Outer Electrode						
	Silver	7440-22-4	1.63 E-03	100.00	1000000	3.08444	30844
	Glass						
Glass	Silicon dioxide	7631-86-9	2.17 E-04	90.00	900000	0.40909	4091
	diboron trioxide	1303-86-2	2.41 E-05	10.00	100000	0.04545	455
Copper and its alloys	Subtotal		2.41 E-04	100.00	1000000	0.45455	4545
	Inner Electrode						
	Silver	7440-22-4	6.13 E-03	100.00	1000000	11.56808	115681
	Nickel	7440-02-0	2.51 E-04	100.00	1000000	0.47338	4734
Tin and its alloys	Tin	7440-31-5	4.16 E-04	100.00	1000000	0.78572	7857
	Subtotal		6.13 E-03			11.56808	115681

Package Totals			Weight (g)	Percentage (%)	PPM
			5.30 E-02	100	1000000

Control ID:MS013677C_Module

Note: The information provided in this declaration are true to the best of ADI's knowledge.

ADI derived most of the information listed in this declaration from documents provided by third parties, and assumes no liability to any inaccuracy of such information.



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