Device Material Content

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Package: 81 csBGA
Total Device Weight 0.040 Grams

Package Code: CB81
Products: ICE40LP

Assembly: ASEM
Size (mm): 5 x 5
Lead pitch (mm): 0.5
MSL: 3
Reflow max (^{o}C): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	9.05%	0.0036	9.05%	0.0036	Silicon chip	7440-21-3	100.00%	Die size: 1.50 x 1.50mm
Mold Compound	58.98%	0.0236	51.61%	0.0206	Silica	60676-86-0	87.50%	Mold Compound: KEG1250 LKDS
			3.83%	0.0015	Epoxy resin	-	6.50%	
			3.24%	0.0013	Phenol Resin	-	5.50%	
			0.29%	0.0001	Carbon Black	1333-86-4	0.50%	
D/A Tape	0.44%	0.00018	0.07%	0.000026	Epoxy Resin	-	15.00%	TAPE FH-900T-25_HR9004
			0.07%	0.000026	Phenol Resin	-	15.00%	
			0.02%	0.000009	SiO2 Filler	99439-28-8	5.00%	
			0.29%	0.000114	(Meta)Acrylic Copolymer	-	65.00%	
Wire	1.42%	0.00057	1.41%	0.00056	Copper	7440-50-8	99.00%	0.7 MIL Pd COATED Cu
			0.01%	0.00001	Palladium	7440-05-3	1.00%	
Solder Balls	1.74%	0.00070	1.72%	0.000687	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.02%	0.000007	Silver (Ag)	7440-22-4	1.00%	
			0.01%	0.000003	Copper (Cu)	7440-50-8	0.50%	
Substrate	16.73%	0.0067	5.35%	0.0021	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			11.38%	0.0045	Glass fiber	65997-17-3	68.00%	
Foil	7.61%	0.0030	6.24%	0.00249	Copper	7440-50-8	82.00%	
			1.15%	0.00046	Nickel plating	7440-02-0	15.10%	
			0.22%	0.00009	Gold plating	7440-57-5	2.91%	
Solder Mask	4.02%	0.0016	2.18%	0.00087	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.29%	0.00012	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.13%	0.00005	Morpholine derivative	71868-10-5	3.32%	
			0.12%	0.00005	Silicon dioxide	7631-86-9	3.00%	
			0.12%	0.00005	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.000004	Carbon black	1333-86-4	0.24%	
			1.15%	0.00046	Trade secret ingredients	-	28.74%	

Notes: * 0.17% max. concentration (of total pkg wt.) of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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