



Device Material Content

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Assembly: ASEM

Size (mm): 4 x 4

Lead pitch (mm): 0.4

MSL: 3

Reflow max (°C): 260

Package: 81 ucBGA

Package Code:

CM81

Total Device Weight 0.026 Grams

Products:

ICE40LP, LIF-UC

June, 2020

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	4.95%	0.0013	4.95%	0.0013	Silicon chip	7440-21-3	100.00%	Die size: 1.50 x 1.50 mm
Mold Compound	62.85%	0.0163	54.99%	0.0143	Silica	60676-86-0	87.50%	Mold Compound: KE-G1250LKDS
			4.09%	0.00106	Epoxy resin	-	6.50%	
			3.46%	0.00090	Phenol Resin	-	5.50%	
			0.31%	0.00008	Carbon Black	1333-86-4	0.50%	
D/A Tape	0.15%	0.00004	0.12%	0.00003	Silver	7440-22-4	80.00%	TAPE FH-900T-25_HR9004
			0.03%	0.00001	Esters & resins	-	20.00%	
Wire	1.05%	0.00027	1.02%	0.000266	Copper	7440-50-8	97.30%	0.7 MIL Pd coated Cu
			0.03%	0.000007	Palladium	7440-05-3	2.70%	
Solder Balls	2.66%	0.0007	2.62%	0.000681	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.03%	0.000007	Silver (Ag)	7440-22-4	1.00%	
			0.01%	0.000003	Copper (Cu)	7440-50-8	0.50%	
Substrate	18.39%	0.0048	5.70%	0.0015	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			12.50%	0.0033	Glass fiber	65997-17-3	68.00%	
			0.18%	0.0000	Bisphenol A	80-05-7	1.00%	
Foil	4.09%	0.0011	3.03%	0.00079	Copper	7440-50-8	74.07%	
			1.01%	0.00026	Nickel plating	7440-02-0	24.69%	
			0.05%	0.00001	Gold plating	7440-57-5	1.24%	
Solder Mask	5.81%	0.0015	3.27%	0.000849	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.93%	0.000242	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			1.28%	0.000332	Barium Sulfate	7727-43-7	22.00%	
			0.17%	0.000045	Talc	14807-96-6	3.00%	
			0.03%	0.000008	Naphthalene	91-20-3	0.50%	
			0.13%	0.000035	Trade secret ingredients	-	2.30%	

Notes: SVHC: * 0.18% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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