Device Material Content

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April, 2018

Package: 121 ucBGA
Total Device Weight 41.84 **Milligrams**

Package Code: CM121
Products: ICE40LP

Assembly: ASEM
Size (mm): 5 x 5
Lead pitch (mm): 0.4
MSL: 3
Reflow max (^oC): 260

	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	3.10%	1.298	3.10%	1.298	Silicon chip	7440-21-3	100.00%	Die size: 1.5 x 1.5mm
Mold Compound	53.98%	22.585	47.23%	19.762	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KE-G1250 series
			3.51%	1.468	Epoxy resin	-	6.50%	
			2.97%	1.242	Phenol Resin	-	5.50%	
			0.27%	0.113	Carbon Black	1333-86-4	0.50%	
D/A Tape	0.15%	0.063	0.02%	0.009	Epoxy Resin	-	15.00%	Die Attach (tape): Hitachi FH-900 HR-9004 series
			0.02%	0.009	Phenol Resin	-	15.00%	
			0.01%	0.003	SiO2 Filler	99439-28-8	5.00%	
			0.10%	0.041	(Meta)Acrylic Copolymer	-	65.00%	
Wire	1.39%	0.582	1.35%	0.566	Copper	7440-50-8	97.30%	0.7 mil diameter; 1 wire per solder ball
			0.04%	0.016	Palladium	7440-05-3	2.70%	
Solder Balls	2.49%	1.042	2.45%	1.026	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.02%	0.010	Silver (Ag)	7440-22-4	1.00%	
			0.01%	0.005	Copper (Cu)	7440-50-8	0.50%	
Substrate	38.88%	16.267	18.51%	7.747	Laminate*	-	47.62%	BT Resin CCL-HL832NX-A
			5.56%	2.325	Solder mask PSR4000 AUS 308	-	14.29%	
			11.76%	4.919	Copper	7440-50-8	30.24%	
			2.78%	1.161	Nickel plating	7440-02-0	7.14%	
			0.28%	0.115	Gold plating	7440-57-5	0.71%	

Notes: * 0.19% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

The values listed above are nominal values based on studies of representatives of this particular package type, and are believed to be as accurate as possible.
Constituent substances and proportions in epoxy materials are before curing.
The information provided above is representative of the package as of the date listed, and is subject to change at any time.
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Rev. B1