



Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@latticesemi.com

Assembly: ASEM

Size (mm): 5 x 5

Lead pitch (mm): 0.4

MSL: 3

Reflow max (°C): 260

November, 2020

Package: 121 ucBGA
Total Device Weight 41.84 Milligrams

Package Code:
CM121

Products:
ICE40LP

	% 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	18.51%	7.7465	5.92%	2.4789	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A
			12.59%	5.2676	Glass fiber	65997-17-3	68.00%	
Foil	14.81%	6.1962	11.76%	4.9193	Copper	7440-50-8	79.39%	
			2.78%	1.1615	Nickel plating	7440-02-0	18.75%	
			0.28%	0.1155	Gold plating	7440-57-5	1.86%	
Solder Mask	5.56%	2.3246	3.12%	1.3064	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.89%	0.3719	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			1.22%	0.5114	Barium Sulfate	7727-43-7	22.00%	
			0.17%	0.0697	Talc	14807-96-6	3.00%	
			0.03%	0.0116	Naphthalene	91-20-3	0.50%	
			0.13%	0.0535	Trade secret ingredients	-	2.30%	

Lattice regards this materials information to be correct but makes no guarantee as to its accuracy or completeness, including, but not limited to, with respect to its compliance with applicable environmental laws and regulations. Lattice subcontracts the production, test and assembly of hardware devices to independent third-party vendors and materials suppliers ("Contractors"). All data provided hereunder is based on information received from Contractors. Lattice has not independently verified the accuracy or completeness of this information which is provided solely for your reference in connection with the use of Lattice products.

www.latticesemi.com

