LATTICE SEMICONDUCTOR

Device Material Content

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

June, 2022

Package: 64 ucBGA
Total Device Weight 0.03 Grams

Package Code: UMG64
Products: XO2

Assembly: ASEM
Size (mm): 4 x 4
Lead pitch (mm): 0.4
MSL: 3
Reflow max (ºC): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	7.09%	0.0021	7.09%	0.0021	Silicon chip	7440-21-3	100.00%	Die size: 1.7 x 1.91 mm
Mold Compound	47.43%	0.0142	2.37%	0.00071	Epoxy Resin A	-	5.00%	Mold Compound: Sumitomo G750SE (ULA)
			0.71%	0.00021	Epoxy Resin B	-	1.50%	
			2.37%	0.00071	Phenol Novolac	9003-35-4	5.00%	
			2.37%	0.00071	Metal Hydroxide	-	5.00%	
			0.14%	0.00004	Carbon Black	1333-86-4	0.30%	
			39.46%	0.01184	Silica Fused	60676-86-0	83.20%	
D/A Epoxy	1.14%	0.0003	0.91%	0.00027	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.23%	0.00007	Esters & resins	-	20.00%	
Wire	1.85%	0.0006	1.82%	0.00055	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.03%	0.00001	Palladium	7440-05-3	1.50%	
Solder Balls	12.99%	0.0039	12.80%	0.00384	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.13%	0.00004	Silver (Ag)	7440-22-4	1.00%	
			0.06%	0.00002	Copper (Cu)	7440-50-8	0.50%	
Substrate	19.01%	0.0057	6.08%	0.00182	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A
			12.93%	0.00388	Glass fiber	65997-17-3	68.00%	
Foil	4.44%	0.0013	3.16%	0.0009	Copper	7440-50-8	71.12%	
			1.05%	0.0003	Nickel	7440-02-0	23.71%	
			0.23%	0.00007	Gold	7440-57-5	5.18%	
Solder Mask	6.06%	0.0018	3.40%	0.00102	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.97%	0.00029	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			1.33%	0.00040	Barium Sulfate	7727-43-7	22.00%	
			0.18%	0.00005	Talc (containing no asbestiform fibers)	14807-96-6	3.00%	
			0.17%	0.000051	Trade secret ingredients	-	2.80%	

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Br/Cl/Sb

Pb lead-free ✓ RoHS

Rev. R1

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Mold Compound	47.43%	0.0142	41.50%	0.01245	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KE-G2250 series (ULA)
			3.08%	0.00092	Epoxy resin	-	6.50%	
			2.61%	0.00078	Phenol Resin	-	5.50%	
			0.24%	0.00007	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	1.14%	0.0003	0.91%	0.00027	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.23%	0.00007	Esters & resins	-	20.00%	
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