



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com		Package: 64 ucBGA Total Device Weight 0.03 Grams			Package Code: UMG64	Assembly: ASEM Size (mm): 4 x 4 Lead pitch (mm): 0.4 MSL: 3 Reflow max (°C): 260		
June, 2022					Products: XO2			
	% 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% 0.71% 2.37% 2.37% 0.14% 39.46%	0.00071 0.00021 0.00071 0.00071 0.00004 0.01184	Epoxy Resin A Epoxy Resin B Phenol Novolac Metal Hydroxide Carbon Black Silica Fused	- - 9003-35-4 - 1333-86-4 60676-86-0	5.00% 1.50% 5.00% 5.00% 0.30% 83.20%	Mold Compound: Sumitomo G750SE (ULA)
D/A Epoxy	1.14%	0.0003	0.91% 0.23%	0.00027 0.00007	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A
Wire	1.85%	0.0006	1.82% 0.03%	0.00055 0.00001	Copper Palladium	7440-50-8 7440-05-3	98.50% 1.50%	0.8 mil diameter; 1 wire per solder ball
Solder Balls	12.99%	0.0039	12.80% 0.13% 0.06%	0.00384 0.00004 0.00002	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	98.50% 1.00% 0.50%	SAC105
Substrate	19.01%	0.0057	6.08% 12.93%	0.00182 0.00388	BT Resins Glass fiber	- 65997-17-3	32.00% 68.00%	BT Resin CCL-HL832NX-A
Foil	4.44%	0.0013	3.16% 1.05% 0.23%	0.0009 0.0003 0.00007	Copper Nickel Gold	7440-50-8 7440-02-0 7440-57-5	71.12% 23.71% 5.18%	
Solder Mask	6.06%	0.0018	3.40% 0.97% 1.33% 0.18% 0.17%	0.00102 0.00029 0.00040 0.00005 0.000051	Quartz 3-methoxy-3-methylbutylacetate Barium Sulfate Talc (containing no asbestiform fibers) Trade secret ingredients	14808-60-7 103429-90-9 7727-43-7 14807-96-6 -	56.20% 16.00% 22.00% 3.00% 2.80%	Solder mask PSR4000 AUS 308

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 subcontract 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.

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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	41.50% 3.08% 2.61% 0.24%	0.01245 0.00092 0.00078 0.00007	Silica Epoxy resin Phenol Resin Carbon Black	60676-86-0 - - 1333-86-4	87.50% 6.50% 5.50% 0.50%	Mold Compound: Kyocera KE-G2250 series (ULA)	
D/A Epoxy	1.14%	0.0003	0.91% 0.23%	0.00027 0.00007	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A	
Wire	1.85%	0.0006	1.82% 0.03%	0.00055 0.00001	Copper Palladium	7440-50-8 7440-05-3	98.50% 1.50%	0.8 mil diameter; 1 wire per solder ball	
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