LATTICE SEMICONDUCTOR

Device Material Content

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

June, 2022

Package: **100 csBGA**
Total Device Weight **0.147** **Grams**

Package Code: **MN100**
Products: XO

Assembly: ASEM
Size (mm): 8 x 8
Lead pitch (mm): 0.5
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	5.85%	0.0086						Die size: 4.71 x 2.90 mm
			5.85%	0.0086	Silicon chip	7440-21-3	100.00%	
Mold Compound	66.11%	0.0972						Mold Compound: Sumitomo G750SE
			4.63%	0.0068	Epoxy Resin	-	7.00%	
			3.31%	0.0049	Phenol Novolac	9003-35-4	5.00%	
			3.31%	0.0049	Metal Hydroxide	-	5.00%	
			0.33%	0.0005	Carbon Black	1333-86-4	0.50%	
			54.54%	0.0802	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.94%	0.0014						Die attach epoxy: Henkel (Ablebond) 2100A
			0.76%	0.00111	Silver	7440-22-4	80.00%	
			0.19%	0.00028	Esters & resins	-	20.00%	
Wire	0.92%	0.0014						Pd coated Copper, 0.8 mil diameter
			0.91%	0.00134	Copper	7440-50-8	98.50%	
			0.01%	0.00002	Palladium	7440-05-3	1.50%	
Solder Balls	7.16%	0.0105						SAC305
			6.91%	0.0102	Tin (Sn)	7440-31-5	96.50%	
			0.21%	0.0003	Silver (Ag)	7440-22-4	3.00%	
			0.04%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	12.36%	0.0182						BT Resin CCL-HL832NX-A
			3.96%	0.0058	BT Resins	-	32.00%	
			8.41%	0.0124	Glass fiber	65997-17-3	68.00%	
Foil	4.62%	0.0068						
			3.91%	0.00574	Copper	7440-50-8	84.56%	
			0.68%	0.00100	Nickel	7440-02-0	14.70%	
			0.03%	0.00005	Gold	7440-57-5	0.74%	
Solder Mask	2.04%	0.0030						Solder mask PSR4000 AUS 308
			1.14%	0.00168	Quartz	14808-60-7	56.20%	
			0.33%	0.00048	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.45%	0.00066	Barium Sulfate	7727-43-7	22.00%	
			0.06%	0.00009	Talc (containing no asbestiform fibers)	14807-96-6	3.00%	
			0.06%	0.00008	Trade secret ingredients	-	2.80%	

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.

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Br/Cl/Sb Pb lead-free RoHS

Rev. Q1

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	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	5.85%	0.0086	5.85%	0.0086	Silicon chip	7440-21-3	100.00%	Die size: 4.71 x 2.90 mm
Mold Compound	66.11%	0.0972	57.84%	0.0850	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KE-G2250 series (ULA)
			4.30%	0.0063	Epoxy resin	-	6.50%	
			3.64%	0.0053	Phenol Resin	-	5.50%	
			0.33%	0.0005	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.94%	0.0014	0.76%	0.00111	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.19%	0.00028	Esters & resins	-	20.00%	
Wire	0.92%	0.0014	0.91%	0.0013	Copper	7440-50-8	98.50%	Pd coated Copper, 0.8 mil diameter
			0.01%	0.0000	Palladium	7440-05-3	1.50%	
Solder Balls	7.16%	0.0105	7.05%	0.0104	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.07%	0.0001	Silver (Ag)	7440-22-4	1.00%	
			0.04%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	12.36%	0.0182	3.96%	0.0058	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A
			8.41%	0.0124	Glass fiber	65997-17-3	68.00%	
Foil	4.62%	0.0068	3.91%	0.00574	Copper	7440-50-8	84.56%	
			0.68%	0.00100	Nickel plating	7440-02-0	14.70%	
			0.03%	0.00005	Gold plating	7440-57-5	0.74%	
Solder Mask	2.04%	0.0030	1.14%	0.00168	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.33%	0.00048	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.45%	0.00066	Barium Sulfate	7727-43-7	22.00%	
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			0.06%	0.00008	Trade secret ingredients	-	2.80%	

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Br/Cl/Sb

Pb lead-free

✓ RoHS

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