



Device Material Content

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

November, 2020

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 (°C): 260

	% 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	4.63% 3.31% 3.31% 0.33% 54.54%	0.0068 0.0049 0.0049 0.0005 0.0802	Epoxy Resin Phenol Novolac Metal Hydroxide Carbon Black Silica Fused	- 9003-35-4 - 1333-86-4 60676-86-0	7.00% 5.00% 5.00% 0.50% 82.50%	Mold Compound: Sumitomo G750SE
D/A Epoxy	0.94%	0.0014	0.76% 0.19%	0.00111 0.00028	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A
Wire	0.92%	0.0014	0.91% 0.01%	0.0013 0.0000	Copper Palladium	7440-50-8 7440-05-3	98.50% 1.50%	Pd coated Copper, 0.8 mil diameter
Solder Balls	7.16%	0.0105	6.91% 0.21% 0.04%	0.0102 0.0003 0.0001	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	96.50% 3.00% 0.50%	SAC305
Substrate	12.36%	0.0182	3.96% 8.41%	0.0058 0.0124	BT Resins Glass fiber	- 65997-17-3	32.00% 68.00%	BT Resin CCL-HL832NX-A
Foil	4.62%	0.0068	3.91% 0.68% 0.03%	0.00574 0.00100 0.00005	Copper Nickel plating Gold plating	7440-50-8 7440-02-0 7440-57-5	84.56% 14.70% 0.74%	
Solder Mask	2.04%	0.0030	1.14% 0.33% 0.45% 0.06% 0.01% 0.05%	0.00168 0.00048 0.00066 0.00009 0.00001 0.00007	Quartz 3-methoxy-3-methylbutylacetate Barium Sulfate Talc Naphthalene Trade secret ingredients	14808-60-7 103429-90-9 7727-43-7 14807-96-6 91-20-3 -	56.20% 16.00% 22.00% 3.00% 0.50% 2.30%	Solder mask PSR4000 AUS 308

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Rev. Q



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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%	
			0.06%	0.00009	Talc	14807-96-6	3.00%	
			0.01%	0.00001	Naphthalene	91-20-3	0.50%	
			0.05%	0.00007	Trade secret ingredients	-	2.30%	

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Mold Compound	66.11%	0.0972	4.63%	0.0068	Solid Epoxy Resin	-	7.00%	Mold Compound: Hitachi GE-110LS-V (ULA)
			3.31%	0.0049	Phenol Resin	-	5.00%	
			56.19%	0.0826	Silica	60676-86-0	85.00%	
			1.65%	0.0024	Metal Hydroxide	-	2.50%	
			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) 2300
			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%	
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