



## Device Material Content

5555 NE Moore Ct.  
Hillsboro OR 97124  
[custreq@latticesemi.com](mailto:custreq@latticesemi.com)

Assembly: ASEM  
Size (mm): 17 x 17

**Package Code:**

**BG400**

Lead pitch (mm): 0.8

**Package:** 400 caBGA  
**Total Device Weight** 0.747 Grams

**Products:**

MSL: 3

June, 2020

XO3

Reflow max (°C): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
<b>Die</b>	1.39%	0.0104	1.39%	0.0104	Silicon chip	7440-21-3	100.00%	Die size: 4.4 x 4.3 mm
<b>Mold Compound</b>	51.80%	0.3871	3.63%	0.0271	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE (ULA)
			2.59%	0.0194	Phenol Novolac	9003-35-4	5.00%	
			2.59%	0.0194	Metal Hydroxide	-	5.00%	
			0.26%	0.0019	Carbon Black	1333-86-4	0.50%	
			42.74%	0.3194	Silica Fused	60676-86-0	82.50%	
<b>D/A Epoxy</b>	0.21%	0.0016	0.17%	0.00126	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.04%	0.00031	Esters & resins	-	20.00%	
<b>Wire</b>	0.72%	0.0054	0.70%	0.0053	Copper	7440-50-8	97.90%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0001	Palladium	7440-05-3	2.10%	
<b>Solder Balls</b>	20.03%	0.1497	19.33%	0.1444	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.60%	0.0045	Silver (Ag)	7440-22-4	3.00%	
			0.10%	0.0007	Copper (Cu)	7440-50-8	0.50%	
<b>Substrate</b>	16.80%	0.1256	5.21%	0.0389	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			11.43%	0.0854	Glass fiber	65997-17-3	68.00%	
			0.17%	0.0013	Bisphenol A	80-05-7	1.00%	
<b>Foil</b>	6.28%	0.0469	5.31%	0.0397	Copper	7440-50-8	84.56%	
			0.92%	0.0069	Nickel plating	7440-02-0	14.70%	
			0.05%	0.0003	Gold plating	7440-57-5	0.74%	
<b>Solder Mask</b>	2.77%	0.0207	1.56%	0.0116	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.44%	0.0033	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.61%	0.0046	Barium Sulfate	7727-43-7	22.00%	
			0.08%	0.0006	Talc	14807-96-6	3.00%	
			0.01%	0.00010	Naphthalene	91-20-3	0.50%	
			0.06%	0.0005	Trade secret ingredients	-	2.30%	

**Notes:** SVHC: \* 0.17% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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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<b>Mold Compound</b>	51.80%	0.3871	3.63%	0.0271	Solid Epoxy Resin	-	7.00%	Mold Compound: Hitachi GE-110LS-V (ULA)
			2.59%	0.0194	Phenol Resin	-	5.00%	
			44.03%	0.3290	Silica	60676-86-0	85.00%	
			1.30%	0.0097	Metal Hydroxide	-	2.50%	
			0.26%	0.0019	Carbon Black	1333-86-4	0.50%	
<b>D/A Epoxy</b>	0.21%	0.0016	0.17%	0.00126	Silver	7440-22-4	80.00%	Die attach epoxy: Ablebond 2300
			0.04%	0.00031	Esters & resins	-	20.00%	
<b>Wire</b>	0.72%	0.0054	0.70%	0.0053	Copper	7440-50-8	97.90%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0001	Palladium	7440-05-3	2.10%	
<b>Solder Balls</b>	20.03%	0.1497	19.73%	0.1474	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.20%	0.0015	Silver (Ag)	7440-22-4	1.00%	
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<b>Substrate</b>	16.80%	0.1256	5.21%	0.0389	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
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Rev. G