Device Material Content

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

November, 2020

Package: 324 caBGA
Total Device Weight 0.586 Grams

Package Code: BG324
Products: XO3

Assembly: ASEM
Size (mm): 15 x 15
Lead pitch (mm): 0.8
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	1.28%	0.0075						Die size: 3.7 x 3.7 mm
			1.28%	0.0075	Silicon chip	7440-21-3	100.00%	
Mold Compound	51.47%	0.3016						Mold Compound: Sumitomo G750SE
			3.60%	0.0211	Epoxy Resin	-	7.00%	
			2.57%	0.0151	Phenol Novolac	9003-35-4	5.00%	
			2.57%	0.0151	Metal Hydroxide	-	5.00%	
			0.26%	0.0015	Carbon Black	1333-86-4	0.50%	
			42.46%	0.2488	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.21%	0.0012						Die attach epoxy: Henkel (Ablebond) 2100A
			0.17%	0.00098	Silver	7440-22-4	80.00%	
			0.04%	0.00025	Esters & resins	-	20.00%	
Wire	0.69%	0.0040						0.8 mil diameter; 1 wire per solder ball
			0.68%	0.0040	Copper	7440-50-8	98.50%	
			0.01%	0.0001	Palladium	7440-05-3	1.50%	
Solder Balls	20.67%	0.1211						SAC305
			19.95%	0.1169	Tin (Sn)	7440-31-5	96.50%	
			0.62%	0.0036	Silver (Ag)	7440-22-4	3.00%	
			0.10%	0.0006	Copper (Cu)	7440-50-8	0.50%	
Substrate	16.69%	0.0978						BT Resin CCL-HL832NX-A
			11.35%	0.0665	Glass fiber	65997-17-3	68.00%	
			5.34%	0.0313	BT Resins	-	32.00%	
Solder Mask	5.27%	0.0309						Solder mask PSR4000 AUS 308
			2.96%	0.0174	Quartz	14808-60-7	56.20%	
			0.84%	0.0049	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			1.16%	0.0068	Barium Sulfate	7727-43-7	22.00%	
			0.16%	0.0009	Talc	14807-96-6	3.00%	
			0.03%	0.0002	Naphthalene	91-20-3	0.50%	
			0.12%	0.0007	Trade secret ingredients	-	2.30%	
Foil	3.71%	0.0218						
			2.75%	0.0161	Copper	7440-50-8	74.07%	
			0.92%	0.0054	Nickel plating	7440-02-0	24.69%	
			0.05%	0.0003	Gold plating	7440-57-5	1.24%	

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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Rev. G

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Die	1.28%	0.0075	1.28%	0.0075	Silicon chip	7440-21-3	100.00%	Die size: 3.7 x 3.7 mm
Mold Compound	51.47%	0.3016	3.60%	0.0211	Epoxy Resin	-	7.00%	Mold Compound: Hitachi GE-110LS-V
			2.57%	0.0151	Phenol Novolac	9003-35-4	5.00%	
			2.57%	0.0151	Metal Hydroxide	-	5.00%	
			0.26%	0.0015	Carbon Black	1333-86-4	0.50%	
			42.46%	0.2488	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.21%	0.0012	0.17%	0.00098	Silver	7440-22-4	80.00%	Die attach epoxy: Ablebond 2300
			0.04%	0.00025	Esters & resins	-	20.00%	
Wire	0.69%	0.0040	0.68%	0.0040	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.01%	0.0001	Palladium	7440-05-3	1.50%	
Solder Balls	20.67%	0.1211	20.36%	0.1193	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.21%	0.0012	Silver (Ag)	7440-22-4	1.00%	
			0.10%	0.0006	Copper (Cu)	7440-50-8	0.50%	
Substrate	16.69%	0.0978	11.35%	0.0665	Glass fiber	65997-17-3	68.00%	BT Resin CCL-HL832NX-A
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