



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com					Package Code: BG381		Assembly: ASEM Size (mm): 17 x 17 Lead pitch (mm): 0.8 MSL: 3 Reflow max (°C): 260	
June, 2022	Package: Total Device Weight		381 caBGA 1.005 Grams		Products: FE5			
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Material	Notes / Assumptions:
Die	2.65%	0.0266	2.65%	0.0266	Silicon chip	7440-21-3	100.00%	Die size: 6.55 x 7.04 mm
Mold Compound	40.47%	0.4067	2.83% 2.02% 2.02% 0.20% 33.39%	0.0285 0.0203 0.0203 0.0020 0.3355	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 (ULA)
D/A Epoxy	0.38%	0.0038	0.30% 0.08%	0.00306 0.00076	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A
Wire	0.26%	0.0026	0.255% 0.004%	0.00256 0.00004	Copper Palladium	7440-50-8 7440-05-3	98.50% 1.50%	0.8 mil diameter; 1 wire per solder ball
Solder Balls	9.44%	0.0949	9.11% 0.28% 0.05%	0.0916 0.0028 0.0005	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	96.50% 3.00% 0.50%	SAC305
Substrate	27.61%	0.2775	8.56% 18.77%	0.0860 0.1887	BT Resins Glass fiber	- 65997-17-3	31.00% 68.00%	BT Resin CCL-HL832NX-A
Foil	12.56%	0.1262	10.30% 1.90% 0.37%	0.1035 0.0190 0.0037	Copper Nickel Gold	7440-50-8 7440-02-0 7440-57-5	82.00% 15.10% 2.91%	
Solder Mask	6.63%	0.0666	3.73% 1.06% 1.46% 0.20% 0.19%	0.0375 0.0107 0.0147 0.0020 0.0019	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

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Br/Cr/Sb

lead-free

RoHS

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Rev. G

