



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com	Package: 256 ftBGA Total Device Weight 0.705 Grams	Package Code: FTN256 (v.1) Products: LC4kV/ZC	Assembly: ASEM Size (mm): 17 x 17 Lead pitch (mm): 1.0 MSL: 3 Reflow max (°C): 260
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August, 2019

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.00%	0.0071			Silicon chip	7440-21-3	100.00%	Die size: 3.35 x 3.35 mm
Mold Compound	55.31%	0.390	3.32%	0.0234	Epoxy Resin	-	6.00%	Mold Compound: Hitachi CEL9220HF
			2.77%	0.0195	Phenol Resin	-	5.00%	
			0.11%	0.0008	Carbon Black	1333-86-4	0.20%	
			47.13%	0.3322	Silica	60676-86-0	85.20%	
			1.99%	0.0140	Others	-	3.60%	
D/A Epoxy	0.16%	0.0011	0.13%	0.00088	Silver (Ag)	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 3230
			0.03%	0.00022	Organic esters and resins	-	20.00%	
Wire	1.07%	0.0075	1.07%	0.0075	Gold (Au)	7440-57-5	100.00%	0.8 to 1.0 mil diameter; 1 wire per package lead
Solder Balls	13.78%	0.097	13.30%	0.0937	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.41%	0.0029	Silver (Ag)	7440-22-4	3.00%	
			0.07%	0.0005	Copper (Cu)	7440-50-8	0.50%	
Substrate	13.11%	0.0924	4.20%	0.0296	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			8.92%	0.0629	Glass fiber	65997-17-3	68.00%	
Foil	9.56%	0.0674	8.14%	0.0574	Copper	7440-50-8	85.15%	
			1.37%	0.0096	Nickel plating	7440-02-0	14.28%	
			0.05%	0.0004	Gold plating	7440-57-5	0.57%	
Solder Mask	6.01%	0.0424	3.27%	0.0230	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.44%	0.0031	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.20%	0.0014	Morpholine derivative	71868-10-5	3.32%	
			0.18%	0.0013	Silicon dioxide	7631-86-9	3.00%	
			0.18%	0.0013	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.0001	Carbon black	1333-86-4	0.24%	
			1.73%	0.0122	Trade secret ingredients	-	28.74%	

Notes: * 0.13% max. concentration (of total pkg wt.) of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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