



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com		Package: 237 ftBGA Total Device Weight: 0.814 Grams		Package Code: FTG237 Products: LPTM21		Assembly: ASEM Size (mm): 17 x 17 Lead pitch (mm): 1.0 MSL: 3 Reflow max (°C): 260		
June, 2022								
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.06%	0.0086	1.06%	0.0086	Silicon chip	7440-21-3	100.00%	Die 1: 2.58 x 2.52 mm Die 2: 2.89 x 2.89 mm Side-by-side (dual-die)
Mold Compound	49.90%	0.4062	2.50%	0.0203	Epoxy Resin A	-	5.00%	Mold compound: Sumitomo EME-G750E
			0.85%	0.0069	Epoxy Resin B	-	1.70%	
			2.50%	0.0203	Phenol Novolac	9003-35-4	5.00%	
			41.42%	0.3371	Silica Fused	60676-86-0	83.00%	
			2.50%	0.0203	Metal Hydroxide	-	5.00%	
			0.15%	0.0012	Carbon Black	1333-86-4	0.30%	
D/A Epoxy	0.15%	0.0012	0.12%	0.00098	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.03%	0.00024	Esters & resins	-	20.00%	
Wire	0.38%	0.0031	0.38%	0.00307	Gold (Au)	7440-57-5	99.00%	Pd coated Au, 0.8 mil diameter; 1 wire per solder ball
			0.00%	0.00003	Palladium	7440-05-3	1.00%	
Solder Balls	14.14%	0.1151	13.65%	0.1111	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.42%	0.0035	Silver (Ag)	7440-22-4	3.00%	
			0.07%	0.0006	Copper (Cu)	7440-50-8	0.50%	
Substrate	23.87%	0.1943	7.64%	0.0622	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A
			16.23%	0.1321	Glass fiber	65997-17-3	68.00%	
Foil	4.77%	0.0389	2.86%	0.0233	Copper	7440-50-8	59.97%	
			1.81%	0.0148	Nickel	7440-02-0	38.01%	
			0.10%	0.0008	Gold	7440-57-5	2.02%	
Solder Mask	5.73%	0.0466	3.22%	0.0262	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.92%	0.0075	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			1.26%	0.0103	Barium Sulfate	7727-43-7	22.00%	
			0.17%	0.0014	Talc (containing no asbestiform fibers)	14807-96-6	3.00%	
			0.16%	0.0013	Trade secret ingredients	-	2.80%	

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