



Device Material Content

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Package: 256 ftBGA with SnAgCu Solder Balls
Total Device Weight 0.705 Grams

Halogen Free
MSL: 3
Peak Reflow Temp: 260°C

November, 2010	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.00%	0.0071			Silicon chip	7440-21-3	Die size: 3.35 x 3.35 mm
Mold	55.31%	0.390	45.91%	0.3237	Silica	60676-86-0	Mold Compound composition: 75 to 95% Fused silica filler (LSC uses 83% in our calculation) 2 to 10% Epoxy resin (LSC uses 7.5% in our calculation) 2 to 10% Phenol resin (LSC uses 7.5% in our calculation) 0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation) 0.1 to 0.5% Carbon Black (LSC uses 0.5% in our calculation) Mold Compound Density ranges between 1.8 and 2.1 grams/cc
			4.15%	0.0292	Epoxy Resin	-	
			4.15%	0.0292	Phenol Resin	-	
			0.83%	0.0058	Metal Hydroxide	-	
			0.28%	0.0019	Carbon Black	1333-86-4	
D/A Epoxy	0.16%	0.0011	0.13%	0.0009	Silver-filled epoxy	7440-22-4	Die attach epoxy Density: 4 grams/cc 60 to 100% Silver (LSC uses 80% in our calculation) 0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
			0.03%	0.0002	Silver (Ag) Organic esters and resins	-	
Wire	1.07%	0.0075			Gold (Au)	7440-57-5	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	Solder ball composition Sn96.5%/Ag3.0%/Cu0.5%
			0.41%	0.0029	Silver (Ag)	7440-22-4	
			0.07%	0.0005	Copper (Cu)	7440-50-8	
Substrate	23.42%	0.165	15.92%	0.1123	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			7.49%	0.0528	BT Resins	-	
Foil	5.27%	0.037			Copper (Cu)	7440-50-8	

Notes:
The values listed above are nominal values based on studies of representatives of this particular package type, and are believed to be as accurate as possible.
Constituent substances and proportions in epoxy materials are before curing.
The information provided above is representative of the package as of the date listed, and is subject to change at any time.
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