Device Material Content

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Package: **324 ftBGA** **with SnAgCu Solder Balls**

Total Device Weight **1.14** **Grams**

MSL: 3
Peak Reflow Temp: 260°C

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	0.87%	0.0099			Silicon chip	7440-21-3	Die size: 4.08 x 3.85 mm
Mold	45.91%	0.523					Mold Compound composition:
			39.02%	0.445	Silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 83% in our calculation)
			2.75%	0.031	Epoxy Resin	-	2 to 10% Epoxy resin (LSC uses 7.5% in our calculation)
			2.75%	0.031	Phenol Resin	-	2 to 10% Phenol resin (LSC uses 7.5% in our calculation)
			0.69%	0.0079	Metal Hydroxide	-	0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation)
			0.09%	0.0010	Carbon Black	1333-86-4	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
D/A Epoxy	0.14%	0.0016			Silver-filled epoxy		Die attach epoxy Density: 4 grams/cc
			0.11%	0.0013	Silver (Ag)	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.03%	0.0003	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.83%	0.0095			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per package lead
Solder Balls	29.04%	0.331					
			27.74%	0.316	Tin (Sn)	7440-31-5	Solder ball composition Sn95.5%/Ag4.0%/Cu0.5%
			1.16%	0.013	Silver (Ag)	7440-22-4	
			0.15%	0.002	Copper (Cu)	7440-50-8	
Substrate	17.78%	0.203					
			12.09%	0.1379	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			5.69%	0.0649	BT Resins	-	
Foil	5.42%	0.062			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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Rev. A3