Device Material Content

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

MSL: 3
Peak Reflow Temp: 260°C

August, 2012	% 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					Mold Compound composition:
			45.91%	0.3237	Silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 83% in our calculation)
			4.15%	0.0292	Epoxy Resin	-	2 to 10% Epoxy resin (LSC uses 7.5% in our calculation)
			4.15%	0.0292	Phenol Resin	-	2 to 10% Phenol resin (LSC uses 7.5% in our calculation)
			0.83%	0.0058	Metal Hydroxide	-	0.5 to 2.5% Metal hydroxide (LSC uses 1.5% in our calculation)
			0.28%	0.0019	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	0.16%	0.0011					Die attach epoxy Density: 4 grams/cc
			0.13%	0.0009	Silver (Ag)	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.03%	0.0002	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
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					
			13.16%	0.0937	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5%/Ag3.0%/Cu0.5%
			0.55%	0.0029	Silver (Ag)	7440-22-4	
			0.07%	0.0005	Copper (Cu)	7440-50-8	
Substrate	28.69%	0.202					BT Resin CCL-HL832
			13.10%	0.0923	BT Resin CCL-HL832	-	45.71%
			3.27%	0.0231	Copper	7440-50-8	11.43%
			8.19%	0.0577	Solder mask PSR4000 AUS 308	-	28.57%
			1.36%	0.0096	Nickel plating	7440-02-0	4.76%
			0.05%	0.0004	Gold plating	7440-57-5	0.19%
			2.73%	0.0192	Copper thickness in hole	7440-50-8	9.52%

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. B