



Device Material Content

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Package: 1152 fpBGA with SnAgCu Solder Balls
Total Device Weight 5.50 Grams

Copper Bond Wire version

MSL: 3 Peak Reflow Temp: 250°C

December, 2012	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	4.04%	0.2223			Silicon chip	7440-21-3	Die size: 17.25 x 17.72 mm
Mold	34.46%	1.8951	30.18%	1.6601	Silica Fused Epoxy Resin Phenol Resin Carbon Black	60676-86-0	Mold Compound composition: 75 to 95% Silica (LSC uses 87.6% in our calculation) 5 to 10% Epoxy Resin (LSC uses 7% in our calculation) 3 to 8% Phenol Resin (LSC uses 5% in our calculation) 0.1 to 0.5% Carbon Black (LSC uses 0.4% in our calculation) Mold Compound Density ranges between 1.95 and 2.05 grams/cc
			2.41%	0.1327		Trade secret	
			1.72%	0.0948		Trade secret	
			0.14%	0.0076		1333-86-4	
D/A Epoxy	0.57%	0.0313	0.45%	0.0250	Silver	7440-22-4	Die attach epoxy Density: 4 grams/cc 70 to 90% Silver (LSC uses 80% in our calculation) 10 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
			0.11%	0.0063	Organic esters and resins	-	
Wire	0.18%	0.0100	0.98%	0.0018	Copper	7440-50-8	0.8 mil diameter; 1 wire per solder ball 98.5%
			0.01%	0.0000	Palladium	7440-05-3	
Solder Balls	20.33%	1.1181	19.62%	1.0790	Tin (Sn)	7440-31-5	Qualified Solder ball compositions: Sn96.5/Ag3/Cu0.5
			0.61%	0.0335	Silver (Ag)	7440-22-4	
			0.10%	0.0056	Copper (Cu)	7440-50-8	
Substrate	19.32%	1.0628	13.14%	0.7227	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.18%	0.3401	BT Resins	-	
Foil	21.10%	1.1604			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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