



Device Material Content

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Package: 1156 fpBGA with SnPb Solder Balls
Total Device Weight 5.50 Grams

MSL: 3
Peak Reflow Temp: 225°C

November, 2009 % of Total Pkg. Wt. Weight (g) % of Total Pkg. Wt. Weight (g) Substance CAS # Notes / Assumptions:

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	4.04%	0.222			Silicon chip	7440-21-3	Die size: 17.25 x 17.72 mm
Mold	30.13%	1.657	26.52%	1.458	Silica	60676-86-0	Mold Compound composition: 75 to 95% Silica filler (LSC uses 88% in our calculation) 1 to 10% Epoxy resin (LSC uses 6% in our calculation) 2 to 8% Phenolic resin (LSC uses 6% in our calculation) Mold Compound Density ranges between 1.95 and 2.05 grams/cc
			1.81%	0.0994	Epoxy resin	-	
			1.81%	0.0994	Phenol resin	-	
D/A Epoxy	0.57%	0.0313	0.45%	0.0250	Silver (Ag)	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 15% in our calculation) 1 to 5% Functionalized Urethane (LSC uses 5% in our calculation)
			0.09%	0.0047	Organic esters and resins	-	
			0.03%	0.0016	Functionalized Urethane	-	
Wire	0.62%	0.0339			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball
Solder Balls	24.22%	1.332	15.26%	0.839	Tin (Sn)	7440-31-5	Solder ball composition Sn63/Pb37
			8.96%	0.493	Lead (Pb)	7439-92-1	
Substrate	19.32%	1.063	13.14%	0.723	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			6.18%	0.340	BT Resins	-	
Foil	21.10%	1.160			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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