Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@lscc.com

Package: 900 fpBGA with SnAgCu Solder Balls **(90nm and 65nm products)**

Total Device Weight 4.10 Grams

MSL: 3
Peak Reflow Temp: 250°C

November, 2009	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	Notes / Assumptions:
Die	1.64%	0.0672			Silicon chip	7440-21-3	Die size: 9.49 x 9.80 mm
Mold	41.74%	1.711					Mold Compound composition:
			37.07%	1.520	Silica (Fused or Amorphous)	60676-86-0	85 to 95% Silica Fused or Amorphous (LSC uses 88.8% in our calculation)
			2.09%	0.0856	Epoxy resin	-	1.5 to 8% Epoxy resin (LSC uses 5% in our calculation)
			1.67%	0.0685	Phenol resin	-	3 to 6% Phenol resin (LSC uses 4% in our calculation)
			0.08%	0.0034	Carbon Black	1333-86-4	Carbon Black appox. 0.2%
			0.83%	0.0342	Other	-	Others approx. 2%
D/A Epoxy	0.23%	0.0094				7440-22-4	Die attach epoxy Density: 4 grams/cc
			0.18%	0.0076	Silver	7440-22-4	70 to 90% Silver (LSC uses 80% in our calculation)
			0.05%	0.0019	Organic esters and resins	-	10 to 30% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.64%	0.0264			Gold (Au)	7440-57-5	0.8 to 1.0 mil diameter; 1 wire per solder ball
Solder Balls	21.82%	0.895					
			21.05%	0.863	Tin (Sn)	7440-31-5	Solder ball composition Sn96.5/Ag3/Cu0.5
			0.65%	0.0268	Silver (Ag)	7440-22-4	
			0.11%	0.0045	Copper (Cu)	7440-50-8	
Substrate	22.82%	0.936					
			15.52%	0.636	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			7.30%	0.299	BT Resins	-	
Foil	11.10%	0.455			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.

www.latticesemi.com

Rev. B4