Device Material Content

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

Package: **256 fpBGA** **with SnAgCu Solder Balls**

Total Device Weight **1.05** **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	1.82%	0.0191			Silicon chip	7440-21-3	Die size: 5.30 x 5.00
Mold	28.14%	0.2955					Mold Compound Density ranges between 1.8 and 2.1 grams/cc
			24.82%	0.2606	Silica (Fused or Amorphous)	60676-86-0	75 to 95% Silica Fused or Amorphous (LSC uses 88.2% in our calculation)
			1.41%	0.0148	Epoxy resin	-	2 to 10% Epoxy resin (LSC uses 5% in our calculation)
			1.41%	0.0148	Phenol resin	-	2 to 10% Phenol resin (LSC uses 5% in our calculation)
			0.42%	0.0044	Metal Hydroxide	-	0 to 2.5% Metal Hydroxide (LSC uses 1.5% in our calculation)
			0.08%	0.0009	Carbon Black	1333-86-4	0 to 0.5% Carbon black (LSC uses 0.3% in our calculation)
D/A Epoxy	0.22%	0.0024					Die attach epoxy Density: 4 grams/cc
			0.18%	0.0019	Silver	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.05%	0.0005	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.72%	0.0075			Gold (Au)	7440-57-5	0.0127 mm (radius); 1 wire per package lead
Solder Balls	23.71%	0.249					Qualified Solder ball compositions:
			22.77%	0.239	Tin (Sn)	7440-31-5	Sn95.5/Ag4/Cu0.5
			0.83%	0.0087	Silver (Ag)	7440-22-4	Sn96.5/Ag3/Cu0.5
			0.12%	0.0012	Copper (Cu)	7440-50-8	LSC uses: Sn96/Ag3.5/Cu0.5 for calculations
Substrate	25.20%	0.265					
			17.14%	0.1799	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			8.06%	0.0847	BT Resins	-	
Foil	20.18%	0.212			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

lead-free RoHS 2002/95/EC

Rev. B