Device Material Content

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

Package: **208 fpBGA** **with SnAgCu Solder Balls**
Total Device Weight **0.78** **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	2.52%	0.0197			Silicon chip	7440-21-3	Die size: 5.05 x 4.41 mm
Mold	41.27%	0.323					Mold Compound composition:
			36.40%	0.285	Silica (Fused or Amorphous)	60676-86-0	75 to 95% Silica Fused or Amorphous (LSC uses 88.2% in our calculation)
			2.06%	0.0161	Epoxy resin	-	2 to 10% Epoxy resin (LSC uses 5% in our calculation)
			2.06%	0.0161	Phenol resin	-	2 to 10% Phenol resin (LSC uses 5% in our calculation)
			0.62%	0.0048	Metal Hydroxide	-	0 to 2.5% Metal Hydroxide (LSC uses 1.5% in our calculation)
			0.12%	0.0010	Carbon Black	1333-86-4	0 to 0.5% Carbon black (LSC uses 0.3% in our calculation)
							Mold Compound Density ranges between 1.8 and 2.1 grams/cc
D/A Epoxy	0.25%	0.0020					Die attach epoxy Density: 4 grams/cc
			0.20%	0.0016	Silver (Ag)	7440-22-4	60 to 100% Silver (LSC uses 80% in our calculation)
			0.05%	0.0004	Organic esters and resins	-	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	0.78%	0.0061			Gold (Au)	7440-57-5	1.00 mil diameter; 1 wire per package lead; wire length 3 mm
Solder Balls	25.87%	0.202					Qualified Solder ball compositions:
			24.84%	0.1942	Tin (Sn)	7440-31-5	Sn95.5/Ag4/Cu0.5
			0.91%	0.0071	Silver (Ag)	7440-22-4	Sn96.5/Ag3/Cu0.5
			0.13%	0.0010	Copper (Cu)	7440-50-8	LSC uses: Sn96/Ag3.5/Cu0.5 for calculations
Substrate	22.97%	0.180					
			15.62%	0.1222	Glass fiber	65997-17-3	60 to 75% glass fiber (LSC uses 68% in our calculation)
			7.35%	0.0575	BT Resins	-	
Foil	6.33%	0.0495			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

Pb lead-free
RoHS 2002/95/EC

Rev. B4