Device Material Content

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Package: **196 csBGA** **with SnAgCu Solder Balls**
Total Device Weight **0.127** **Grams**

Halogen Free
MSL: 3
Peak Reflow Temp: 260°C

August, 2012	**% of Total Pkg. Wt.**	**Weight (g)**	**% of Total Pkg. Wt.**	**Weight (g)**	**Substance**	**CAS #**	**Notes / Assumptions:**
Die	9.63%	0.0122			Silicon chip	7440-21-3	Die size: 189 x 173 mils
Mold	37.68%	0.0477					Mold Compound: KEG1250 LKDS
			33.91%	0.04293	Silica	60676-86-0	75 to 95% Fused silica filler (LSC uses 90% in our calculation)
			2.07%	0.00262	Epoxy Resin	Trade secret	1 to 10% Epoxy resin (LSC uses 5.5% in our calculation)
			1.70%	0.00215	Phenol Resin	Trade secret	2 to 7% Phenol resin (LSC uses 4.5% in our calculation)
D/A Tape	0.47%	0.0006					TAPE FH-900T-25_HR9004
			0.06%	0.00007	Epoxy Resin	25038-59-9	10 to 20% (LSC uses 12% in our calculation)
			0.06%	0.00007	Phenol Resin	Trade secret	10 to 20% (LSC uses 12% in our calculation)
			0.03%	0.00004	SiO2 Filler	Trade secret	1 to 10% (LSC uses 6% in our calculation)
			0.33%	0.00041	(Meta)Acrylic Copolymer	Trade secret	0 to 40% Organic Esters and Resins (LSC uses 20% in our calculation)
Wire	1.54%	0.0020					0.7 MIL GPG-3 (2N)
			1.527%	0.00193	Gold (Au)	7440-57-5	99%
			0.015%	0.00002	Palladium (Pd)	7440-05-3	1%
Solder Balls	13.93%	0.0176					
			13.72%	0.01737	Tin (Sn)	7440-31-5	Solder ball composition 12 mils Sn98.5 / Ag1.0 / Cu0.5 (SAC105)
			0.14%	0.00018	Silver (Ag)	7440-22-4	
			0.07%	0.00009	Copper (Cu)	7440-50-8	
Substrate	36.75%	0.0465					GHPL-830NX(A), CCL-HL832NX(A-HS) / AUS 308
			11.31%	0.01431	BT Resin (1)(3) GHPL-830NX(A)	Trade secret	
			8.48%	0.01074	BT Resin (2) CCL-HL832NX(A-HS)	Trade secret	
			7.14%	0.00904	Copper (1)(4)	7440-50-8	
			3.40%	0.00430	Copper (2)(3)	7440-50-8	
			1.42%	0.00179	Copper thickness in hole	7440-50-8	
			0.71%	0.00089	Nickel plating	7440-02-0	
			0.07%	0.00009	Gold plating	7440-57-5	
			4.24%	0.00537	Solder mask PSR4000 AUS 308	Trade secret	

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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Br/Cl/Sb

lead-free

RoHS
2002/95/EC

Rev. A