



## Device Material Content

5555 NE Moore Ct.  
Hillsboro OR 97124  
[custreq@lsc.com](mailto:custreq@lsc.com)

Assembly: ATP  
Size (mm): 6 x 6  
Lead pitch (mm): 0.5  
MSL: 3  
Reflow max (°C): 260

May, 2018

Package: 121 csfBGA  
Total Device Weight: 0.0615 Grams

Package Code:

MG121

Products:

XO3L/LF

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	6.85%	0.0042	6.85%	0.0042	Silicon chip	7440-21-3	100.00%	Die size: 3.2 x 3.1 x 0.177 mm
Mold Compound	42.49%	0.0261	5.74% 36.75%	0.00353 0.02260	Epoxy Resin Silica filler	Trade secret 60676-86-0	13.50% 86.50%	Hitachi (Nitto) GE-110BH83-FC
Substrate	29.82%	0.0183	14.27% 4.68% 7.02% 2.57% 0.58%	0.00877 0.00288 0.00432 0.00158 0.00036	Laminate Solder mask Copper (Cu) Nickel Plating Gold Plating	Trade secret Trade secret 7440-50-8 7440-02-0 7440-57-5	47.84% 15.69% 23.53% 8.63% 1.96%	CCL-HL832NS
Cu Pillar	0.255%	0.00016	0.19% 0.06% 0.00%	0.00012 0.0000387 0.0000012	Pillar: Copper (Cu) Cap: Tin (Sn) Silver (Ag)	7440-50-8 7440-31-5 7440-22-4	74.81% 24.68% 0.78%	Oval Type
Sputter 1	0.032%	0.00002	0.002% 0.030%	0.000002 0.000018	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	7.74% 92.26%	
Sputter 2	0.002%	0.0000012	0.000% 0.001% 0.001%	0.0000001 0.0000006 0.0000006	Titanium (Ti) Tungsten (W) Copper (Cu)	7440-32-6 7440-33-7 7440-50-8	4.98% 44.84% 50.18%	
RDL	0.290%	0.00018			Copper (Cu)	7440-50-8	100.00%	
Polymide & PBO	0.186%	0.00011	0.167% 0.019%	0.000103 0.000011	Proprietary Polymer Additives	Trade secret Trade secret	90.00% 10.00%	
Solder Balls	20.55%	0.01264	19.831% 0.617% 0.103%	0.01220 0.00038 0.000063	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	96.50% 3.00% 0.50%	SAC305

**Notes:** \* 0.14% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

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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Rev. C