Device Material Content

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

April, 2018

Package: 1156 fpBGA
Total Device Weight 5.37 **Grams**

Package Code: FN1156
Products: FE3

Assembly: ASEM
Size (mm): 35 x 35
Lead pitch (mm): 1.0
MSL: 3
Reflow max (^oC): 250

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.02%	0.0548	1.02%	0.0548	Silicon chip	7440-21-3	100.00%	Die size: 9.78 x 8.81 mm
Mold Compound	34.14%	1.8334	2.39%	0.1283	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE (ULA)
			1.71%	0.0917	Phenol Novolac	9003-35-4	5.00%	
			1.71%	0.0917	Metal Hydroxide	-	5.00%	
			0.17%	0.0092	Carbon Black	1333-86-4	0.50%	
			28.17%	1.5125	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.13%	0.0072	0.11%	0.00578	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.03%	0.00145	Esters & resins	-	20.00%	
Wire	0.16%	0.0084	0.15%	0.0083	Copper	7440-50-8	98.45%	0.8 mil diameter; 1 wire per solder ball
			0.00%	0.0001	Palladium	7440-05-3	1.45%	
Solder Balls	20.89%	1.1215	20.15%	1.0823	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.63%	0.0336	Silver (Ag)	7440-22-4	3.00%	
			0.10%	0.0056	Copper (Cu)	7440-50-8	0.50%	
Substrate	41.10%	2.2073	22.02%	1.1825	Laminate*	-	53.57%	BT Resin CCL-HL832NX-A
			4.40%	0.2364	Solder mask PSR4000 AUS 308	-	10.71%	
			13.87%	0.7450	Copper	7440-50-8	33.75%	
			0.74%	0.0395	Nickel plating	7440-02-0	1.79%	
			0.07%	0.0040	Gold plating	7440-57-5	0.18%	

Notes: * 0.22% 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.
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PCN#05A-17
Rev. G1

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Products: FE3

Assembly: ASET
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Lead pitch (mm): 1.0
MSL: 3
Reflow max (^{o}C): 250

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.02%	0.0548	1.02%	0.0548	Silicon chip	7440-21-3	100.00%	Die size: 9.78 x 8.81 mm
Mold Compound	34.14%	1.8334	1.71%	0.0917	Epoxy Resin	-	5.00%	Mold Compound: Hitachi CEL9750ZHF10AKL-U (ULA)
			1.71%	0.0917	Phenol Resin	-	5.00%	
			0.07%	0.0037	Carbon Black	1333-86-4	0.20%	
			29.98%	1.6097	Silica	60676-86-0	87.80%	
			0.68%	0.0367	Others	-	2.00%	
D/A Epoxy	0.13%	0.0072	0.11%	0.00578	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.03%	0.00145	Esters & resins	-	20.00%	
Wire	0.16%	0.0084	0.15%	0.0083	Copper	7440-50-8	98.45%	0.8 mil diameter; 1 wire per solder ball
			0.00%	0.0001	Palladium	7440-05-3	1.45%	
Solder Balls	20.89%	1.1215	20.15%	1.0823	Tin (Sn)	7440-31-5	96.50%	Ag 3.5
			0.73%	0.0393	Silver (Ag)	7440-22-4	3.50%	
Substrate	41.10%	2.2073	22.02%	1.1825	Laminate*	-	53.57%	BT Resin CCL-HL832NX-A
			4.40%	0.2364	Solder mask PSR4000 AUS 308	-	10.71%	
			13.87%	0.7450	Copper	7440-50-8	33.75%	
			0.74%	0.0395	Nickel plating	7440-02-0	1.79%	
			0.07%	0.0040	Gold plating	7440-57-5	0.18%	

Notes: * 0.22% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

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	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.02%	0.0548	1.02%	0.0548	Silicon chip	7440-21-3	100.00%	Die size: 9.78 x 8.81 mm
Mold Compound	34.14%	1.8334	2.39%	0.1283	Solid Epoxy Resin	-	7.00%	Mold Compound: Hitachi GE-110LS-V (ULA)
			1.71%	0.0917	Phenol Resin	-	5.00%	
			29.02%	1.5584	Silica	60676-86-0	85.00%	
			0.85%	0.0458	Metal Hydroxide	-	2.50%	
			0.17%	0.0092	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.13%	0.0072	0.11%	0.00578	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2300
			0.03%	0.00145	Esters & resins	-	20.00%	
Wire	0.16%	0.0084	0.15%	0.0083	Copper	7440-50-8	98.45%	0.8 mil diameter; 1 wire per solder ball
			0.00%	0.0001	Palladium	7440-05-3	1.45%	
Solder Balls	20.89%	1.1215	19.95%	1.0711	Tin (Sn)	7440-31-5	95.50%	SAC405
			0.84%	0.0449	Silver (Ag)	7440-22-4	4.00%	
			0.10%	0.0056	Copper (Cu)	7440-50-8	0.50%	
Substrate	41.10%	2.2073	22.02%	1.1825	Laminate*	-	53.57%	BT Resin CCL-HL832NX-A
			4.40%	0.2364	Solder mask PSR4000 AUS 308	-	10.71%	
			13.87%	0.7450	Copper	7440-50-8	33.75%	
			0.74%	0.0395	Nickel plating	7440-02-0	1.79%	
			0.07%	0.0040	Gold plating	7440-57-5	0.18%	

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