



Device Material Content

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

Package Code:

MN144

Assembly: ASEM

Size (mm): 7 x 7

Lead pitch (mm): 0.5

MSL: 3

Reflow max (°C): 260

Package: 144 csBGA
Total Device Weight 0.093 Grams

Products:

LC4kZE

April, 2018

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	5.73%	0.0053	5.73%	0.0053	Silicon chip	7440-21-3	100.00%	Die size: 3.07 x 2.76 mm
Mold Compound	47.81%	0.0445	3.35%	0.0031	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE
			2.39%	0.0022	Phenol Novolac	9003-35-4	5.00%	
			2.39%	0.0022	Metal Hydroxide	-	5.00%	
			0.24%	0.0002	Carbon Black	1333-86-4	0.50%	
			39.44%	0.0367	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.93%	0.0009	0.74%	0.00069	Silver (Ag)	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.19%	0.00017	Esters & resins	-	20.00%	
Wire	1.23%	0.0011	1.21%	0.0011	Copper (Cu)	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0000	Palladium (Pd)	7440-05-3	1.50%	
Solder Balls	16.23%	0.0151	15.66%	0.0146	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.49%	0.0005	Silver (Ag)	7440-22-4	3.00%	
			0.08%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	28.08%	0.0261	18.25%	0.0170	Laminate*	-	65.00%	BT Resin CCL-HL832NX-A
			5.77%	0.0054	Solder mask PSR4000 AUS 308	-	20.54%	
			3.01%	0.0028	Copper (Cu)	7440-50-8	10.71%	
			1.00%	0.0009	Nickel plating	7440-02-0	3.57%	
			0.05%	0.0000	Gold plating	7440-57-5	0.18%	

Notes: * 0.18% 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.

www.latticesemi.com



PCN#05A-17

Rev. N1



Device Material Content

5555 NE Moore Ct.
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Package Code:

MN144

Assembly: ASET

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MSL: 3

Reflow max (°C): 260

Package: 144 csBGA
Total Device Weight 0.093 Grams

Products:

LC4kZE

April, 2018

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Die	5.73%	0.0053	5.73%	0.0053	Silicon chip	7440-21-3	100.00%	Die size: 3.07 x 2.76 mm
Mold Compound	47.81%	0.0445	41.83%	0.0389	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KEG-2250LKDS
			3.11%	0.0029	Epoxy resin	-	6.50%	
			2.63%	0.0024	Phenol Resin	-	5.50%	
			0.24%	0.0002	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.93%	0.0009	0.74%	0.00069	Silver (Ag)	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.19%	0.00017	Esters & resins	-	20.00%	
Wire	1.23%	0.0011	1.21%	0.0011	Copper (Cu)	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0000	Palladium (Pd)	7440-05-3	1.50%	
Solder Balls	16.23%	0.0151	15.98%	0.0149	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.16%	0.0002	Silver (Ag)	7440-22-4	1.00%	
			0.08%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	28.08%	0.0261	18.25%	0.0170	Laminate*	-	65.00%	BT Resin CCL-HL832NX-A
			5.77%	0.0054	Solder mask PSR4000 AUS 308	-	20.54%	
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