Device Material Content

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

December, 2017

Package: **128 TQFP (1.4mm)**
Total Device Weight **0.660** **Grams**

Package Code: **TN128**
Products: LA/LC4128

Assembly: ASEM
Size (mm): 14 x 14 x 1.4
Lead pitch (mm): 0.4
MSL: 3
Reflow max (ºC): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	5.34%	0.0352			Silicon chip	7440-21-3	100.00%	Die size: 5.84 x 7.19 mm
Mold Compound	70.91%	0.4680	4.25%	0.0281	Epoxy Resins	-	6.00%	Mold Compound: Hitachi CEL9220HF
			3.55%	0.0234	Phenol Resin	-	5.00%	
			0.14%	0.0009	Carbon Black	1333-86-4	0.20%	
			60.42%	0.3987	Silica	60676-86-0	85.20%	
			2.55%	0.0168	Other (trade secret)	-	3.60%	
D/A Epoxy	0.65%	0.0043	0.52%	0.00343	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 3230
			0.13%	0.00086	Esters & resins	-	20.00%	
Wire	0.57%	0.0038	0.57%	0.0038	Gold (Au)	7440-57-5	100.00%	0.8 mil wire diameter; 1 wire for each package lead
Plating	1.88%	0.0124	1.88%	0.0124	Tin (Sn)	7440-31-5	100.00%	Plating is 100% Matte Sn; thickness is >10.2µm
Leadframe	20.65%	0.1363	19.97%	0.1318	Copper (Cu)	7440-50-8	96.70%	C7025
			0.62%	0.0041	Nickel (Ni)	7440-02-0	3.01%	
			0.04%	0.0002	Silicon (Si)	7440-21-3	0.17%	
			0.01%	0.0000	Magnesium (Mg)	7439-95-4	0.03%	
			0.02%	0.0001	Silver (Ag)	7440-22-4	0.09%	

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

Rev. D

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December, 2017

Package: **128 TQFP (1.4mm)**
Total Device Weight **0.660** **Grams**

Package Code: **TN128**
Products: LA/LC4128

Assembly: Unisem
Size (mm): 14 x 14 x 1.4
Lead pitch (mm): 0.4
MSL: 3
Reflow max (ºC): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	5.34%	0.0352			Silicon chip	7440-21-3	100.00%	Die size: 5.84 x 7.19 mm
Mold Compound	70.91%	0.4680	4.25%	0.0281	Epoxy Resins	-	6.00%	Mold Compound: Sumitomo G700 series
			3.55%	0.0234	Phenol Resin	-	5.00%	
			0.14%	0.0009	Carbon Black	1333-86-4	0.20%	
			60.42%	0.3987	Silica	60676-86-0	85.20%	
			2.55%	0.0168	Other (trade secret)	-	3.60%	
D/A Epoxy	0.65%	0.0043	0.52%	0.00343	Silver	7440-22-4	80.00%	Die attach epoxy: Sumitomo CRM1076NS
			0.07%	0.00043	Epoxy Resin	9003-36-5	10.00%	
			0.03%	0.00021	Diluent	26447-14-3	5.00%	
			0.00%	0.00002	Dicyandiamide	461-58-5	0.50%	
			0.03%	0.00019	Hardener	620-92-8	4.50%	
Wire	0.57%	0.0038	0.57%	0.0038	Gold (Au)	7440-57-5	100.00%	0.8 mil wire diameter; 1 wire for each package lead
Plating	1.88%	0.0124	1.88%	0.0124	Tin (Sn)	7440-31-5	100.00%	Plating is 100% Matte Sn; thickness is >10.2µm
Leadframe	20.65%	0.1363	19.97%	0.1318	Copper (Cu)	7440-50-8	96.70%	C7025
			0.62%	0.0041	Nickel (Ni)	7440-02-0	3.01%	
			0.04%	0.0002	Silicon (Si)	7440-21-3	0.17%	
			0.01%	0.0000	Magnesium (Mg)	7439-95-4	0.03%	
			0.02%	0.0001	Silver (Ag)	7440-22-4	0.09%	

Notes:
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Rev. D