Device Material Content

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

May, 2018

Package: 48 TQFP (1.0mm)
Total Device Weight 0.140 Grams

Package Code: TN48
Products: LC4kZE

Assembly: ASEM
Size (mm): 7 x 7 x 1.0
Lead pitch (mm): 0.5
MSL: 3
Reflow max (^{o}C): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	2.12%	0.0030			Silicon chip	7440-21-3	100.00%	Die size: 2.00 x 2.20 mm
Mold Compound	70.71%	0.0990	5.30%	0.0074	Epoxy Resin	-	7.50%	Mold Compound: Sumitomo EME-G700SY (ULA)
			2.12%	0.0030	Phenol Resin	-	3.00%	
			48.75%	0.0683	Silica (Amorphous) A	60676-86-0	68.95%	
			14.14%	0.0198	Silica (Amorphous) B	7631-86-9	20.00%	
			0.39%	0.0005	Carbon Black	1333-86-4	0.55%	
D/A Epoxy	0.32%	0.0004	0.24%	0.00034	Silver	7440-22-4	75.50%	Die attach: Yizbond 8143
			0.02%	0.00003	Epoxy Acylate	15625-89-5	7.50%	
			0.01%	0.00001	Substituted Polyamine	68490-66-4	2.00%	
			0.03%	0.00004	Bisphenol F	28064-14-4	10.00%	
			0.02%	0.00002	2-Ethylhexyl Glycidyl Ether	2461-15-6	5.00%	
Wire	0.46%	0.0007	0.46%	0.0007	Copper (Cu)	7440-50-8	100.00%	0.8 mil wire diameter; 1 wire for each package lead
Plating	4.06%	0.0057	4.06%	0.0057	Tin (Sn)	7440-31-5	100.00%	Plating is 100% Matte Sn; thickness is >10.2µm
Leadframe	22.32%	0.0312	21.58%	0.0302	Copper (Cu)	7440-50-8	96.70%	C7025
			0.67%	0.0009	Nickel (Ni)	7440-02-0	3.01%	
			0.04%	0.0001	Silicon (Si)	7440-21-3	0.17%	
			0.01%	0.0000	Magnesium (Mg)	7439-95-4	0.03%	
			0.02%	0.0000	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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May, 2018

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Reflow max (ºC): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	2.12%	0.0030			Silicon chip	7440-21-3	100.00%	Die size: 2.00 x 2.20 mm
Mold Compound	70.71%	0.0990						Sumitomo EME-G631SH
			2.83%	0.0040	Epoxy Resin A	-	4.00%	
			2.83%	0.0040	Epoxy Resin B	834893-60-6	4.00%	
			3.89%	0.0054	Phenol Resin	628290-34-6	5.50%	
			0.35%	0.0005	Carbon Black	1333-86-4	0.50%	
			60.81%	0.0851	Silica Fused	60676-86-0	86.00%	
D/A Epoxy	0.32%	0.0004						Sumitomo CRM-1076WA
			0.26%	0.00036	Silver	7440-22-4	80.00%	
			0.06%	0.00009	Esters & resins	-	20.00%	
Wire	0.46%	0.0007						0.8 mil wire diameter; 1 wire for each package lead
			0.46%	0.00064	Copper (Cu)	7440-50-8	98.50%	
			0.01%	0.00001	Palladium	7440-05-3	1.50%	
Plating	4.06%	0.0057	4.06%	0.0057	Tin (Sn)	7440-31-5	100.00%	Plating is 100% Matte Sn; thickness is >10.2µm
Leadframe	22.32%	0.0312						C7025
			21.58%	0.0302	Copper (Cu)	7440-50-8	96.70%	
			0.67%	0.0009	Nickel (Ni)	7440-02-0	3.01%	
			0.04%	0.0001	Silicon (Si)	7440-21-3	0.17%	
			0.01%	0.0000	Magnesium (Mg)	7439-95-4	0.03%	
			0.02%	0.0000	Silver (Ag)	7440-22-4	0.09%	

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