



## Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 <a href="mailto:custreg@latticesemi.com">custreg@latticesemi.com</a>		<b>Package Code:</b> <b>FN256</b>			Assembly: ASEM Size (mm): 17 x 17 x 1.86 Lead pitch (mm): 1.0 MSL: 3 Reflow max (°C): 250			
<b>Package:</b> 256 fpBGA <b>Total Device Weight:</b> 1.071 Grams		<b>Products:</b> LFE2/2M						
June, 2020								
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.46%	0.0157	1.46%	0.0157	Silicon chip	7440-21-3	100.00%	Die size: 9.78 x 8.81 mm
Mold Compound	29.72%	0.3184	2.08%	0.0223	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE (ULA)
			1.49%	0.0159	Phenol Novolac	9003-35-4	5.00%	
			1.49%	0.0159	Metal Hydroxide	-	5.00%	
			0.15%	0.0016	Carbon Black	1333-86-4	0.50%	
			24.52%	0.2626	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.19%	0.0021	0.15%	0.00165	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.04%	0.00041	Esters & resins	-	20.00%	
Wire	0.29%	0.0031	0.285%	0.00306	Copper	7440-50-8	98.45%	0.8 mil diameter; 1 wire per solder ball
			0.004%	0.00005	Palladium	7440-05-3	1.55%	
Solder Balls	22.65%	0.2426	21.86%	0.2341	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.68%	0.0073	Silver (Ag)	7440-22-4	3.00%	
			0.11%	0.0012	Copper (Cu)	7440-50-8	0.50%	
Substrate	24.47%	0.2621	7.59%	0.0812	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			16.64%	0.1782	Glass fiber	65997-17-3	68.00%	
			0.24%	0.0026	Bisphenol A	80-05-7	1.00%	
Foil	16.97%	0.1817	15.42%	0.1651	Copper	7440-50-8	90.87%	
			1.47%	0.0157	Nickel plating	7440-02-0	8.64%	
			0.08%	0.0009	Gold plating	7440-57-5	0.48%	
Solder Mask	4.24%	0.0455	2.39%	0.0255	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.68%	0.0073	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.93%	0.0100	Barium Sulfate	7727-43-7	22.00%	
			0.13%	0.0014	Talc	14807-96-6	3.00%	
			0.02%	0.0002	Naphthalene	91-20-3	0.50%	
			0.10%	0.0010	Trade secret ingredients	-	2.30%	

**Notes:** SVHC: \* 0.24% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

Lattice regards this materials information to be correct but makes no guarantee as to its accuracy or completeness, including, but not limited to, with respect to its compliance with applicable environmental laws and regulations. Lattice subcontracts the production, test and assembly of hardware devices to independent third-party vendors and materials suppliers ("Contractors"). All data provided hereunder is based on information received from Contractors. Lattice has not independently verified the accuracy or completeness of this information which is provided solely for your reference in connection with the use of Lattice products.

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## Device Material Content

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

Assembly: ASEK  
Size (mm): 17 x 17 x 1.86  
Lead pitch (mm): 1.0  
MSL: 3  
Reflow max (°C): 250

**Package:** 256 fpBGA  
**Total Device Weight:** 1.071 Grams

**Package Code:** FN256  
**Products:** LFE2/2M

June, 2020

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
<b>Die</b>	1.46%	0.0157	1.46%	0.0157	Silicon chip	7440-21-3	100.00%	Die size: 9.78 x 8.81 mm
<b>Mold Compound</b>	29.72%	0.3184	1.49%	0.0159	Epoxy Resin	-	5.00%	Mold Compound: Hitachi CEL9750ZHF10AKL-U (ULA)
			1.49%	0.0159	Phenol Resin	-	5.00%	
			0.06%	0.0006	Carbon Black	1333-86-4	0.20%	
			26.10%	0.2795	Silica	60676-86-0	87.80%	
			0.59%	0.0064	Others	-	2.00%	
<b>D/A Epoxy</b>	0.19%	0.0021	0.15%	0.00165	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.04%	0.00041	Esters & resins	-	20.00%	
<b>Wire</b>	0.29%	0.0031	0.285%	0.00306	Copper	7440-50-8	98.45%	0.8 mil diameter; 1 wire per solder ball
			0.004%	0.00005	Palladium	7440-05-3	1.55%	
<b>Solder Balls</b>	22.65%	0.2426	21.86%	0.2341	Tin (Sn)	7440-31-5	96.50%	Ag 3.5
			0.79%	0.0085	Silver (Ag)	7440-22-4	3.50%	
<b>Substrate</b>	24.47%	0.2621	7.59%	0.0812	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			16.64%	0.1782	Glass fiber	65997-17-3	68.00%	
			0.24%	0.0026	Bisphenol A	80-05-7	1.00%	
<b>Foil</b>	16.97%	0.1817	15.42%	0.1651	Copper	7440-50-8	90.87%	
			1.47%	0.0157	Nickel plating	7440-02-0	8.64%	
			0.08%	0.0009	Gold plating	7440-57-5	0.48%	
<b>Solder Mask</b>	4.24%	0.0455	2.39%	0.0255	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.68%	0.0073	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.93%	0.0100	Barium Sulfate	7727-43-7	22.00%	
			0.13%	0.0014	Talc	14807-96-6	3.00%	
			0.02%	0.0002	Naphthalene	91-20-3	0.50%	
			0.10%	0.0010	Trade secret ingredients	-	2.30%	

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June, 2020	<b>Package:</b> 256 fpBGA <b>Total Device Weight</b> 1.071 Grams		<b>Products:</b> LFE2/2M					
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			1.49%	0.0159	Phenol Novolac	9003-35-4	5.00%	
			1.49%	0.0159	Metal Hydroxide	-	5.00%	
			0.15%	0.0016	Carbon Black	1333-86-4	0.50%	
			24.52%	0.2626	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.19%	0.0021	0.15%	0.00165	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2300
			0.04%	0.00041	Esters & resins	-	20.00%	
Wire	0.29%	0.0031	0.285%	0.00306	Copper	7440-50-8	98.45%	0.8 mil diameter; 1 wire per solder ball
			0.004%	0.00005	Palladium	7440-05-3	1.55%	
Solder Balls	22.65%	0.2426	21.63%	0.2317	Tin (Sn)	7440-31-5	95.50%	SAC405
			0.91%	0.0097	Silver (Ag)	7440-22-4	4.00%	
			0.11%	0.0012	Copper (Cu)	7440-50-8	0.50%	
Substrate	24.47%	0.2621	7.59%	0.0812	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			16.64%	0.1782	Glass fiber	65997-17-3	68.00%	
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