



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com					Package Code: FN484		Assembly: ASEM Size (mm): 23 x 23	
November, 2020	Package: Total Device Weight		484 fpBGA 2.214 Grams		Products: FE2, FE3, XP2		Lead pitch (mm): 1.0 MSL: 3 Reflow max (°C): 250	
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
	Die	0.99%	0.0219	0.99%	0.0219	Silicon chip	7440-21-3	100.00%
Mold Compound	34.35%	0.7604	2.23% 1.72% 1.72% 0.10% 28.58%	0.0494 0.0380 0.0380 0.0023 0.6327	Epoxy Resin Phenol Novolac Metal Hydroxide Carbon Black Silica Fused	- 9003-35-4 - 1333-86-4 60676-86-0	6.50% 5.00% 5.00% 0.30% 83.20%	Mold Compound: Sumitomo G750SE
D/A Epoxy	0.14%	0.0032	0.12% 0.03%	0.00255 0.00064	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A
Wire	0.22%	0.0050	0.22% 0.00%	0.0049 0.0001	Copper Palladium	7440-50-8 7440-05-3	98.55% 1.45%	0.8 mil diameter; 1 wire per solder ball
Solder Balls	21.21%	0.4696	20.47% 0.64% 0.11%	0.4531 0.0141 0.0023	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	96.50% 3.00% 0.50%	SAC305
Substrate	20.15%	0.4460	6.45% 13.70%	0.1427 0.3033	BT Resins Glass fiber	- 65997-17-3	32.00% 68.00%	BT Resin CCL-HL832NX-A
Foil	18.31%	0.4053	16.70% 1.54% 0.08%	0.3696 0.0340 0.0017	Copper Nickel plating Gold plating	7440-50-8 7440-02-0 7440-57-5	91.18% 8.40% 0.42%	
Solder Mask	4.61%	0.1021	2.59% 0.74% 1.01% 0.14% 0.02% 0.11%	0.0574 0.0163 0.0225 0.0031 0.0005 0.0023	Quartz 3-methoxy-3-methylbutylacetate Barium Sulfate Talc Naphthalene Trade secret ingredients	14808-60-7 103429-90-9 7727-43-7 14807-96-6 91-20-3 -	56.20% 16.00% 22.00% 3.00% 0.50% 2.30%	Solder mask PSR4000 AUS 308

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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5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com					Package Code: FN484		Assembly: ASEK Size (mm): 23 x 23 Lead pitch (mm): 1.0 MSL: 3 Reflow max (°C): 250	
Package: 484 fpBGA Total Device Weight: 2.214 Grams					Products: FE2, FE3, XP2			
November, 2020	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	0.99%	0.0219	0.99%	0.0219	Silicon chip	7440-21-3	100.00%	Die size: 5.66 x 6.71mm
Mold Compound	34.35%	0.7604	1.72% 1.72% 0.07% 30.16% 0.69%	0.0380 0.0380 0.0015 0.6676 0.0152	Epoxy Resin Phenol Resin Carbon Black Silica Others	- - 1333-86-4 60676-86-0 -	5.00% 5.00% 0.20% 87.80% 2.00%	Mold Compound: Hitachi CEL-9750ZHF10AKL-U
D/A Epoxy	0.14%	0.0032	0.12% 0.03%	0.00255 0.00064	Silver Esters & resins	7440-22-4 -	80.00% 20.00%	Die attach epoxy: Henkel (Ablebond) 2100A
Wire	0.22%	0.0050	0.22% 0.00%	0.0049 0.0001	Copper Palladium	7440-50-8 7440-05-3	98.55% 1.45%	0.8 mil diameter; 1 wire per solder ball
Solder Balls	21.21%	0.4696	20.47% 0.74%	0.4531 0.0164	Tin (Sn) Silver (Ag)	7440-31-5 7440-22-4	96.50% 3.50%	Ag 3.5
Substrate	20.15%	0.4460	6.45% 13.70%	0.1427 0.3033	BT Resins Glass fiber	- 65997-17-3	32.00% 68.00%	BT Resin CCL-HL832NX-A
Foil	18.31%	0.4053	16.70% 1.54% 0.08%	0.3696 0.0340 0.0017	Copper Nickel plating Gold plating	7440-50-8 7440-02-0 7440-57-5	91.18% 8.40% 0.42%	
Solder Mask	4.61%	0.1021	2.59% 0.74% 1.01% 0.14% 0.02% 0.11%	0.0574 0.0163 0.0225 0.0031 0.0005 0.0023	Quartz 3-methoxy-3-methylbutylacetate Barium Sulfate Talc Naphthalene Trade secret ingredients	14808-60-7 103429-90-9 7727-43-7 14807-96-6 91-20-3 -	56.20% 16.00% 22.00% 3.00% 0.50% 2.30%	Solder mask PSR4000 AUS 308

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