



Device Material Content

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

Package: 16 ucFBGA
Total Device Weight 2.368 Milligrams

Package Code:

SWG16

Products:

ICE40LP

Assembly: ASET

Size (mm): Die size: 1.37 x 1.45

Lead pitch (mm): 0.35

MSL: 1

Reflow max (°C): 260

March, 2019

	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	53.74%	1.2726	53.74%	1.2726	Silicon chip	7440-21-3	100.00%	Die size: 1.37 x 1.45 x 0.275 mm
Polymide (RDL) Repassivation	1.72%	0.0408	0.60%	0.01429	Polyamide	-	35.00%	HD-8820
			0.86%	0.02041	Gamma-butyrolactone	96-48-0	50.00%	
			0.07%	0.00163	Propylene Glycol Monomethyl Ether Acetate	108-65-6	4.00%	
			0.05%	0.00122	Organosilan Compound(s)	-	3.00%	
			0.07%	0.00163	Photoinitiator	-	4.00%	
			0.07%	0.00163	Proprietary Ingredient(s)	-	4.00%	
			0.07%	0.00163	Proprietary Ingredient(s)	-	4.00%	
RDL metalization	15.58%	0.3688	0.19%	0.00438	Titanium (Ti)	7440-32-6	1.19%	
			15.39%	0.36446	Copper (Cu)	7440-50-8	98.81%	
UBM metalization	4.40%	0.1043	0.03%	0.00064	Titanium (Ti)	7440-32-6	0.61%	
			4.38%	0.10367	Copper (Cu)	7440-50-8	99.39%	
Solder Balls	21.07%	0.4990	20.12%	0.47651	Tin (Sn)	7440-31-5	95.50%	SAC405
			0.84%	0.01996	Silver (Ag)	7440-22-4	4.00%	
			0.11%	0.00249	Copper (Cu)	7440-50-8	0.50%	
BSL	3.48%	0.0824	0.14%	0.00330	Bisphenol A diglycidyl ether	1675-54-3	4.00%	Adwill LC 2850
			3.34%	0.07913	Silica, Epoxy resin, Acrylic polymer	-	96.00%	

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





Device Material Content

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

Package: 16 ucFBGA
Total Device Weight 3.586 Milligrams

Package Code:

SWG16

Products:

ICE40UL

Assembly: ASET
Size (mm): 1.4 x 1.4
Lead pitch (mm): 0.35
MSL: 1
Reflow max (°C): 260

April, 2018

	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	37.20%	1.3338	37.20%	1.3338	Silicon chip	7440-21-3	100.00%	Die size: 1.38 x 1.38 x 0.275 mm
Polymide (RDL) Repassivation	1.09%	0.0392	0.38% 0.55% 0.04% 0.03% 0.04% 0.04%	0.01372 0.01961 0.00157 0.00118 0.00157 0.00157	Polyamide Gamma-butyrolactone Propylene Glycol Monomethyl Ether Acetate Organosilan Compound(s) Photoinitiator Proprietary Ingredient(s)	- 96-48-0 108-65-6 - - -	35.00% 50.00% 4.00% 3.00% 4.00% 4.00%	HD-8820
RDL metalization	19.15%	0.6869	0.23% 18.93%	0.00816 0.67872	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	1.19% 98.81%	
UBM metalization	26.05%	0.9341	0.16% 25.89%	0.00572 0.92833	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	0.61% 99.39%	
Solder Balls	14.30%	0.5128	13.66% 0.57% 0.07%	0.48975 0.02051 0.00256	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	95.50% 4.00% 0.50%	SAC405
BSL	2.21%	0.0792	0.09% 2.12%	0.00317 0.07602	Bisphenol A diglycidyl ether Silica, Epoxy resin, Acrylic polymer	1675-54-3 -	4.00% 96.00%	Adwill LC 2850

Notes:

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