

Device Material Content

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

February, 2018

Package: 36 WLCSP
Total Device Weight 7.877 Milligrams

Package Code: UWG36
Products: LIF-MD6000

Assembly: ASEM
Size (mm): 2.535 x 2.583
Lead pitch (mm): 0.4
MSL: 1
Reflow max (°C): 260

	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	68.13%	5.3667	68.131%	5.3667	Silicon chip	7440-21-3	100.00%	Die size: 2.535 x 2.583 mm
Repassivation PBO 1	1.92%	0.1512	0.960% 0.672% 0.096% 0.096% 0.096%	0.0756 0.0529 0.0076 0.0076 0.0076	4-Butyrolactone Polyamide 1-Methoxy-2-propyl acetate Photo Active Compound Proprietary Additives	96-48-0 Trade Secret 108-65-6 Trade Secret Trade Secret	50.00% 35.00% 5.00% 5.00% 5.00%	HD8820
RDL Metalization	5.10%	0.4017	0.042% 5.058%	0.0033 0.3984	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	0.82% 99.18%	
UBM Metalization	6.980%	0.5498	0.042% 6.940%	0.0033 0.5467	Titanium (Ti) Copper (Cu)	7440-50-8 7440-50-8	0.60% 99.43%	
Solder Balls	14.07%	1.1083	13.824% 0.169% 0.070% 0.007%	1.0889 0.0133 0.0055 0.0006	Tin (Sn) Silver (Ag) Copper (Cu) Nickel (Ni)	7440-31-5 7440-22-4 7440-50-8 7440-02-0	98.25% 1.20% 0.50% 0.05%	Sn98.25/Ag1.2/Cu0.5/Ni0.05
BSC Coating film	3.790%	0.2985	2.464% 0.739% 0.284% 0.284% 0.019%	0.1940 0.0582 0.0224 0.0224 0.0015	Polybutylene terephthalate (PBT) Silica Other Epoxy resins Other Acrylic resins Carbon black	25038-59-9 60676-86-0 Proprietary Proprietary 1333-86-4	65.00% 19.50% 7.50% 7.50% 0.50%	Adwill LC 2850

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.
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Device Material Content

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

February, 2018

Package: 36 WLCSP
Total Device Weight 8.950 Milligrams

Package Code:

UWG36

Products:

ICE40 Ultra / ICE5

Assembly: ASET

Size (mm): 2.078 x 2.078

Lead pitch (mm): 0.35

MSL: 1

Reflow max (°C): 260

	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	57.55%	5.1507	57.550%	5.1507	Silicon chip	7440-21-3	100.00%	Die size: 2.03 x 2.03 mm
Repassivation	0.94%	0.0841	0.470% 0.329% 0.047% 0.047% 0.047%	0.0421 0.0294 0.0042 0.0042 0.0042	4-Butyrolactone Polyamide 1-Methoxy-2-propyl acetate Photo Active Compound Proprietary Additives	96-48-0 Trade Secret 108-65-6 Trade Secret Trade Secret	50.00% 35.00% 5.00% 5.00% 5.00%	HD8820
RDL Metalization	11.29%	1.0105	0.093% 11.197%	0.0083 1.0021	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	0.82% 99.18%	
UBM	10.440%	0.9344	0.063% 10.380%	0.0056 0.9290	Titanium (Ti) Copper (Cu)	7440-50-8 7440-50-8	0.60% 99.43%	
Solder Balls	16.71%	1.4955	15.958% 0.668% 0.084%	1.4282 0.0598 0.0075	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	95.50% 4.00% 0.50%	SAC405
BSL	3.070%	0.2748	1.996% 0.599% 0.230% 0.230% 0.015%	0.1786 0.0536 0.0206 0.0206 0.0014	Polybutylene terephthalate (PBT) Silica Other Epoxy resins Other Acrylic resins Carbon black	25038-59-9 60676-86-0 Proprietary Proprietary 1333-86-4	65.00% 19.50% 7.50% 7.50% 0.50%	Adwill LC 2850

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5555 NE Moore Ct.
Hillsboro OR 97124
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February, 2018

Package: 36 WLCSP
Total Device Weight 13.41 Milligrams

Package Code:

UWG36

Products:

XO3L/LF

Assembly: ATT

Size (mm): 2.49 x 2.54

Lead pitch (mm): 0.4

MSL: 1

Reflow max (°C): 260

	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	79.73%	10.692	79.731%	10.6919	Silicon chip	7440-21-3	100.00%	Die size: 2.49 x 2.54 mm
Sputter 1	0.056%	0.0075	0.003% 0.040%	0.0006 0.0069	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	7.74% 92.26%	
Repassivation PBO 1	0.367%	0.0492	0.183% 0.128% 0.018% 0.018% 0.018%	0.0246 0.0172 0.0025 0.0025 0.0025	4-Butyrolactone Polyamide 1-Methoxy-2-propyl acetate Photo Active Compound Proprietary Additives	96-48-0 Trade Secret 108-65-6 Trade Secret Trade Secret	50.00% 35.00% 5.00% 5.00% 5.00%	HD8820
RDL	0.69%	0.0920	0.044%	0.0059	Copper (Cu)	7440-50-8	100.0%	
Sputter 2	0.044%	0.0059	0.022% 0.022%	0.0029 0.0029	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	49.8% 50.2%	
Repassivation PBO 2	0.290%	0.0389	0.145% 0.128% 0.018% 0.018% 0.018%	0.0194 0.0136 0.0019 0.0019 0.0019	4-Butyrolactone Polyamide 1-Methoxy-2-propyl acetate Photo Active Compound Proprietary Additives	96-48-0 Trade Secret 108-65-6 Trade Secret Trade Secret	50.00% 35.00% 5.00% 5.00% 5.00%	HD8820
UBM	0.942%	0.126	0.942%	0.1263	Copper (Cu)	7440-50-8	100.0%	
Solder Balls	16.33%	2.190	15.595% 0.653% 0.082%	2.0912 0.0876 0.0109	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	95.50% 4.00% 0.50%	SAC405
BSC	1.555%	0.209	1.011% 0.303% 0.117% 0.117% 0.008%	0.1356 0.0407 0.0156 0.0156 0.0010	Polybutylene terephthalate (PBT) Silica Other Epoxy resins Other Acrylic resins Carbon black	25038-59-9 60676-86-0 Proprietary Proprietary 1333-86-4	65.00% 19.50% 7.50% 7.50% 0.50%	Adwill LC 2850

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