

Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@latticesemi.com		Package: 49 WLCSP Total Device Weight 21.834 Milligrams			Package Code: UWG49	Assembly: ATT Size (mm): 3.106 x 3.185 Lead pitch (mm): 0.4 MSL: 1 Reflow max (°C): 260		
June, 2019					Products: XO2, XO3			
	% of Total Pkg. Wt.	Weight (mg)	% of Total Pkg. Wt.	Weight (mg)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	82.48%	18.009	82.48%	18.009	Silicon chip	7440-21-3	100.00%	Die size: 3.106 x 3.185 mm
Sputter 1	0.055%	0.012	0.004% 0.051%	0.001 0.011	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	7.74% 92.26%	
Repassivation PBO 1	0.383%	0.084	0.192% 0.134% 0.019% 0.019% 0.019%	0.042 0.029 0.004 0.004 0.004	4-Butyrolactone Polyamide 1-Methoxy-2-propyl acetate Photo Active Compound Proprietary Additives	96-48-0 - 108-65-6 - -	50.00% 35.00% 5.00% 5.00% 5.00%	PBO HD8820
RDL metalization	0.675%	0.147	0.68%	0.147	Copper (Cu)	7440-50-8	100.00%	
Sputter 2	0.037%	0.008	0.09% 11.20%	0.012 1.502	Titanium (Ti) Copper (Cu)	7440-32-6 7440-50-8	49.82% 50.18%	
Repassivation PBO 2	0.319%	0.070	0.160% 0.112% 0.016% 0.016% 0.016%	0.035 0.024 0.003 0.003 0.003	4-Butyrolactone Polyamide 1-Methoxy-2-propyl acetate Photo Active Compound Proprietary Additives	96-48-0 - 108-65-6 - -	50.00% 35.00% 5.00% 5.00% 5.00%	PBO HD8820
UBM	0.791%	0.173	0.791%	0.173	Copper (Cu)	7440-50-8	100.00%	
Solder Balls	13.655%	2.981	13.04% 0.55% 0.07%	2.847 0.119 0.015	Tin (Sn) Silver (Ag) Copper (Cu)	7440-31-5 7440-22-4 7440-50-8	95.50% 4.00% 0.50%	SAC405
BSC Coating film	1.609%	0.351	1.05% 0.31% 0.12% 0.12% 0.01%	0.228 0.069 0.026 0.026 0.002	Polybutylene terephthalate (PBT) Silica Other Epoxy resins Other Acrylic resins Carbon black	25038-59-9 60676-86-0 - - 1333-86-4	65.00% 19.50% 7.50% 7.50% 0.50%	Adwill LC2850

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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