



Device Material Content

5555 NE Moore Ct. Hillsboro OR 97124 custreq@lsc.com		Package: 84 QFN Total Device Weight 0.110 Grams			Package Code: QN84	Assembly: ASEM Size (mm): 7 x 7 x 0.85 Lead pitch (mm): 0.5 MSL: 3 Reflow max (°C): 260		
July, 2018					Products: ICE40LP			
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.08%	0.0012	1.08%	0.0012	Silicon chip	7440-21-3	100.00%	Die size: 1.47 x 1.40 mm
Mold Compound	45.69%	0.0503	40.21%	0.0442	Silica (fused)	60676-86-0	88.00%	Mold Compound: Sumitomo EME-G770
			2.28%	0.0025	Epoxy Resin	-	5.00%	
			2.28%	0.0025	Phenol Resin	-	5.00%	
			0.80%	0.0009	Metal Hydroxide	-	1.75%	
			0.11%	0.0001	Carbon Black	1333-86-4	0.25%	
D/A Tape	0.05%	0.0001	0.01%	0.00001	Epoxy Resin	-	15.00%	Die attach: TAPE FH-900T-25_HR9004
			0.01%	0.00001	Phenol Resin	-	15.00%	
			0.00%	0.00000	SiO2 Filler	99439-28-8	5.00%	
			0.03%	0.00004	(Meta)Acrylic Copolymer	-	65.00%	
Wire	0.68%	0.0007	0.66%	0.0007	Copper (Cu)	7440-50-8	97.30%	0.8 mil wire diameter; 1 wire for each package lead
			0.02%	0.0000	Palladium (Pd)	7440-05-3	2.70%	
Plating	4.50%	0.0050	4.50%	0.0050	Tin (Sn)	7440-31-5	100.00%	100% Matte Sn, annealed
Leadframe	48.00%	0.0528	46.41%	0.0511	Copper (Cu)	7440-50-8	96.70%	C7025
			1.44%	0.0016	Nickel (Ni)	7440-02-0	3.01%	
			0.08%	0.0001	Silicon (Si)	7440-21-3	0.17%	
			0.01%	0.0000	Magnesium (Mg)	7439-95-4	0.03%	
			0.04%	0.0000	Silver (Ag)	7440-22-4	0.09%	

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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5555 NE Moore Ct. Hillsboro OR 97124 custreq@lsc.com August, 2018				Package: 84 QFN Total Device Weight 0.110 Grams			Package Code: <div style="border: 1px solid black; padding: 2px; display: inline-block;">QN84</div> Products: <div style="border: 1px solid black; padding: 2px; display: inline-block;">XO2</div>	Assembly: ASEM Size (mm): 7 x 7 x 0.85 Lead pitch (mm): 0.5 MSL: 3 Reflow max (°C): 260			
	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:			
Die	1.08%	0.0012	1.08%	0.0012	Silicon chip	7440-21-3	100.00%	Die size: 1.47 x 1.40 mm			
Mold Compound	45.69%	0.0503	40.21%	0.0442	Silica (fused)	60676-86-0	88.00%	Mold Compound: Sumitomo EME-G770SFL (ULA)			
			2.28%	0.0025	Epoxy Resin	-	5.00%				
			2.28%	0.0025	Phenol Resin	-	5.00%				
			0.80%	0.0009	Metal Hydroxide	-	1.75%				
			0.11%	0.0001	Carbon Black	1333-86-4	0.25%				
D/A Tape	0.05%	0.00006	0.004%	0.000004	Bisphenol A Liquid Epoxy Resin	25068-38-6	7.50%	Die attach: Furukawa NEX-130CTX			
			0.008%	0.000009	Specific Epoxy Resin	-	15.00%				
			0.001%	0.000001	Hardener	-	2.00%				
			0.037%	0.000041	Silica	60676-86-0	70.50%				
			0.003%	0.000003	Additives	-	5.00%				
Wire	0.68%	0.00074	0.66%	0.00072	Copper (Cu)	7440-50-8	97.30%	0.8 mil wire diameter; 1 wire for each package lead			
			0.02%	0.00002	Palladium (Pd)	7440-05-3	2.70%				
Plating	4.50%	0.0050	4.50%	0.0050	Tin (Sn)	7440-31-5	100.00%	100% Matte Sn, annealed			
Leadframe	48.00%	0.0528	46.41%	0.051056	Copper (Cu)	7440-50-8	96.70%	C7025			
			1.44%	0.001589	Nickel (Ni)	7440-02-0	3.01%				
			0.08%	0.000090	Silicon (Si)	7440-21-3	0.17%				
			0.01%	0.000016	Magnesium (Mg)	7439-95-4	0.03%				
			0.04%	0.000048	Silver (Ag)	7440-22-4	0.09%				

Notes:
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