



## Device Material Content

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Assembly: ASEM

Package: 225 ucBGA  
Total Device Weight 0.080 Grams

Package Code: **CM225**

Size (mm): 7 x 7

Lead pitch (mm): 0.4

MSL: 3

Reflow max (°C): 260

June, 2020

Products:  
ICE40LP/HX

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	4.63%	0.0037	4.63%	0.0037	Silicon chip	7440-21-3	100.00%	Die size: 3.35 x 3.07 mm
Mold Compound	60.18%	0.0482	52.66%	0.0422	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KEG1250 LKDS
			3.91%	0.0031	Epoxy resin	-	6.50%	
			3.31%	0.0027	Phenol Resin	-	5.50%	
			0.30%	0.00024	Carbon Black	1333-86-4	0.50%	
Die attach	0.67%	0.00054	0.54%	0.000431	Silver	7440-22-4	80.00%	Ablebond 2100A
			0.13%	0.000108	Esters & resins	-	20.00%	
Wire	1.18%	0.0009	1.14%	0.00092	Copper	7440-50-8	97.30%	0.7 mil diameter; 1 wire per solder ball
			0.03%	0.00003	Palladium	7440-05-3	2.70%	
Solder Balls	2.41%	0.00194	2.38%	0.00191	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.02%	0.00002	Silver (Ag)	7440-22-4	1.00%	
			0.01%	0.00001	Copper (Cu)	7440-50-8	0.50%	
Substrate	14.73%	0.0118	4.57%	0.0037	BT Resins	-	31.00%	BT Resin CCL-HL832NX-A*
			10.01%	0.0080	Glass fiber	65997-17-3	68.00%	
			0.15%	0.0001	Bisphenol A	80-05-7	1.00%	
Foil	11.78%	0.0094	9.66%	0.0077	Copper	7440-50-8	82.00%	
			1.78%	0.0014	Nickel plating	7440-02-0	15.10%	
			0.34%	0.0003	Gold plating	7440-57-5	2.91%	
Solder Mask	4.42%	0.0035	2.40%	0.00193	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.32%	0.00026	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.15%	0.00012	Morpholine derivative**	71868-10-5	3.32%	
			0.13%	0.00011	Silicon dioxide	7631-86-9	3.00%	
			0.13%	0.00011	Silica, amorphous	112945-52-5	3.00%	
			1.27%	0.00102	Trade secret ingredients	-	28.74%	

Notes: SVHC: \* 0.15% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate laminate material as impurity - not intentionally added.

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