



Device Material Content

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Assembly: ASEM
Size (mm): 17 x 17

Package Code:

BG381

Lead pitch (mm): 0.8

MSL: 3

Reflow max (°C): 260

Package: 381 caBGA

Total Device Weight 1.005 Grams

Products:

FE5

June, 2019

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	2.65%	0.0266	2.65%	0.0266	Silicon chip	7440-21-3	100.00%	Die size: 6.55 x 7.04 mm
Mold Compound	40.47%	0.4067	2.83%	0.0285	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE (ULA)
			2.02%	0.0203	Phenol Novolac	9003-35-4	5.00%	
			2.02%	0.0203	Metal Hydroxide	-	5.00%	
			0.20%	0.0020	Carbon Black	1333-86-4	0.50%	
			33.39%	0.3355	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.38%	0.0038	0.30%	0.00306	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.08%	0.00076	Esters & resins	-	20.00%	
Wire	0.26%	0.0026	0.25%	0.0026	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.00%	0.0000	Palladium	7440-05-3	1.50%	
Solder Balls	9.44%	0.0949	9.11%	0.0916	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.28%	0.0028	Silver (Ag)	7440-22-4	3.00%	
			0.05%	0.0005	Copper (Cu)	7440-50-8	0.50%	
Substrate	27.61%	0.2775	8.84%	0.0888	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			18.77%	0.1887	Glass fiber	65997-17-3	68.00%	
Foil	12.56%	0.1262	10.30%	0.1035	Copper	7440-50-8	82.00%	
			1.90%	0.0190	Nickel plating	7440-02-0	15.10%	
			0.37%	0.0037	Gold plating	7440-57-5	2.91%	
Solder Mask	6.63%	0.0666	3.61%	0.0362	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.49%	0.0049	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.22%	0.0022	Morpholine derivative	71868-10-5	3.32%	
			0.20%	0.0020	Silicon dioxide	7631-86-9	3.00%	
			0.20%	0.0020	Silica, amorphous	112945-52-5	3.00%	
			0.02%	0.0002	Carbon black	1333-86-4	0.24%	
			1.91%	0.0192	Trade secret ingredients	-	28.74%	

Notes: * 0.28% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

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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