Device Material Content

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Package: 285 csfBGA
Total Device Weight 0.235 **Grams**

Package Code: MG285 — 9 x 9 mm, MG285
Products: LFE5

Assembly: ASET
Size (mm): 9 x 9
Lead pitch (mm): 0.5
MSL: 3
Reflow max (ºC): 260

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	2.76%	0.0065			Silicon chip	7440-21-3		Die size: 4.30 x 4.09 mm
Substrate	51.16%	0.1200			**Solder mask**			PSR4000 AUS 308
			0.085%	0.00016	Proprietary resins	-	0.17%	
			0.005%	0.00001	Phthalocyanine blue	147-14-8	0.01%	
			0.345%	0.00081	Barium sulfate	7727-43-7	0.67%	
			0.076%	0.00018	Talc containing no asbestiform fibers	14807-96-6	0.15%	
			0.019%	0.00004	Silica, amorphous	7631-86-9	0.04%	
			0.131%	0.00031	Dipropylene glycol monomethyl ether	34590-94-8	0.26%	
			0.239%	0.00056	Solvent naphtha(petroleum), Heavy arom.	64742-94-5	0.47%	
			0.020%	0.00005	Naphthalene	91-20-3	0.04%	
			0.039%	0.00009	Dipropylene glycol monomethyl ether acetate	88917-22-0	0.08%	
			0.264%	0.00062	Diethylene glycol monoethyl ether acetate	112-15-2	0.52%	
					CORE			MGC CCL-HL832NS
			6.362%	0.01492	Epoxy Resin*	9003-36-5	12.44%	
			6.362%	0.01492	Continuous Filament Fiber Glass	65997-17-3	12.44%	
			8.483%	0.01990	Copper	7440-50-8	16.58%	
					Prepreg			MGC GHPL-830NS
			5.475%	0.01284	Thermosetting Resin*	-	10.70%	
			3.650%	0.00856	Continuous Filament Fiber Glass	65997-17-3	7.14%	
					Foil			
			7.733%	0.01814	Copper	7440-50-8	15.12%	
					Plating			
			11.853%	0.02780	Copper	7440-50-8	23.17%	
					OSP			
			0.001%	0.000003	Organic inhibitor/acid	-	0.002%	
			0.014%	0.00003	Deionized water	7732-18-5	0.03%	
UBM	0.02%	0.000044						
			0.004%	0.000009	Titanium (Ti)	7440-32-6	20.25%	
			0.015%	0.000035	Copper (Cu)	7440-57-5	79.75%	
Bump	1.11%	0.002602						
			0.806%	0.00189	Tin (Sn)	7440-31-5	72.64%	
			0.015%	0.00003	Silver (Ag)	7440-22-4	1.33%	
			0.280%	0.00066	Nickel (Ni)	7440-02-0	25.24%	
			0.009%	0.00002	Copper (Cu)	7440-50-8	0.78%	
Underfill	1.11%	0.002600						UA-26
			0.107%	0.00025	N,N-Diglycidyl-4-glycidyloxyaniline	5026-74-4	9.62%	
			0.107%	0.00025	Bisphenol F type liquid epoxy resin	9003-36-5	9.62%	
			0.055%	0.00013	Bisphenol A type liquid epoxy resin	25068-38-6	5.00%	
			0.080%	0.00019	Amine type hardener	Trade secret	7.22%	
			0.011%	0.00003	Carbon black	1333-86-4	1.00%	
			0.693%	0.00163	Silicon dioxide	60676-86-0	62.54%	
			0.055%	0.00013	Additives	Trade secret	5.00%	
Mold Compound	31.12%	0.0730						Sumitomo EME-G760 Type SW
			2.418%	0.00567	Epoxy Resin	Trade secret	7.77%	
			0.967%	0.00227	Phenol Resin A	9003-35-4	3.11%	
			0.967%	0.00227	Phenol Resin B	Trade secret	3.11%	
			19.339%	0.04537	Silica(Amorphous) A	60676-86-0	62.14%	
			6.446%	0.01512	Silica(Amorphous) B	7631-86-9	20.71%	
			0.806%	0.00189	Metal Hydroxide	Trade secret	2.59%	
			0.177%	0.00042	Carbon Black	1333-86-4	0.57%	
Solder Balls	12.73%	0.0299						LF35 (98.25Sn; 1.2Ag, 0.5Cu 0.05Ni)
			12.507%	0.02934	Tin (Sn)	7440-31-5	98.25%	
			0.153%	0.00036	Silver (Ag)	7440-22-4	1.20%	
			0.064%	0.00015	Copper (Cu)	7440-50-8	0.50%	
			0.006%	0.00001	Nickel (Ni)	7440-02-0	0.05%	

Notes:

* 0.12% 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 ty
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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Br/Cl/Sb

Pb lead-free RoHS

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Rev. C1