Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@latticesemi.com

June, 2022

Package: **132 csBGA**
Total Device Weight **0.124** **Grams**

Package Code: **MG132**
Products: XO2

Assembly: ASEM
Size (mm): 8 x 8
Lead pitch (mm): 0.5
MSL: 3
Reflow max (°C): 250

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	6.93%	0.0086						Die size: 4.71 x 2.90 mm
			6.93%	0.0086	Silicon chip	7440-21-3	100.00%	
Mold Compound	56.76%	0.0704						Mold Compound: Sumitomo G750SE (ULA)
			2.84%	0.0035	Epoxy Resin A	-	5.00%	
			0.85%	0.0011	Epoxy Resin B	-	1.50%	
			2.84%	0.0035	Phenol Novolac	9003-35-4	5.00%	
			2.84%	0.0035	Metal Hydroxide	-	5.00%	
			0.17%	0.0002	Carbon Black	1333-86-4	0.30%	
			47.22%	0.0586	Silica Fused	60676-86-0	83.20%	
D/A Epoxy	1.12%	0.0014						Die attach epoxy: Henkel (Ablebond) 2100A
			0.90%	0.00111	Silver	7440-22-4	80.00%	
			0.22%	0.00028	Esters & resins	-	20.00%	
Wire	1.44%	0.0018						0.8 mil diameter; 1 wire per solder ball
			1.42%	0.00176	Copper	7440-50-8	98.50%	
			0.02%	0.00003	Palladium	7440-05-3	1.50%	
Solder Balls	11.20%	0.0139						SAC305
			10.81%	0.0134	Tin (Sn)	7440-31-5	96.50%	
			0.34%	0.0004	Silver (Ag)	7440-22-4	3.00%	
			0.06%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	14.65%	0.0182						BT Resin CCL-HL832NX-A
			4.69%	0.0058	BT Resins	-	32.00%	
			9.96%	0.0124	Glass fiber	65997-17-3	68.00%	
Foil	5.48%	0.0068						
			4.63%	0.0057	Copper	7440-50-8	84.57%	
			0.81%	0.0010	Nickel	7440-02-0	14.70%	
			0.04%	0.0001	Gold	7440-57-5	0.74%	
Solder Mask	2.42%	0.0030						Solder mask PSR4000 AUS 308
			1.36%	0.00169	Quartz	14808-60-7	56.20%	
			0.39%	0.00048	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.53%	0.00066	Barium Sulfate	7727-43-7	22.00%	
			0.07%	0.00009	Talc (containing no asbestiform fibers)	14807-96-6	3.00%	
			0.07%	0.00008	Trade secret ingredients	-	2.80%	

www.latticesemi.com

Rev. P1

Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@latticesemi.com

June, 2022

Package: 132 csBGA
Total Device Weight 0.124 **Grams**

Package Code: MG132
Products: XO2

Assembly: ASEK
Size (mm): 8 x 8
Lead pitch (mm): 0.5
MSL: 3
Reflow max (°C): 250

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	6.93%	0.0086	6.93%	0.0086	Silicon chip	7440-21-3	100.00%	Die size: 4.71 x 2.90 mm
Mold Compound	56.76%	0.0704	49.66%	0.0616	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KE-G2250 series (ULA)
			3.69%	0.0046	Epoxy resin	-	6.50%	
			3.12%	0.0039	Phenol Resin	-	5.50%	
			0.28%	0.0004	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	1.12%	0.0014	0.90%	0.00111	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.22%	0.00028	Esters & resins	-	20.00%	
Wire	1.44%	0.0018	1.42%	0.0018	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0000	Palladium	7440-05-3	1.50%	
Solder Balls	11.20%	0.0139	11.04%	0.0137	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.11%	0.0001	Silver (Ag)	7440-22-4	1.00%	
			0.06%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	14.65%	0.0182	4.69%	0.0058	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A
			9.96%	0.0124	Glass fiber	65997-17-3	68.00%	
Foil	5.48%	0.0068	4.63%	0.0057	Copper	7440-50-8	84.57%	
			0.81%	0.0010	Nickel	7440-02-0	14.70%	
			0.04%	0.0001	Gold	7440-57-5	0.74%	
Solder Mask	2.42%	0.0030	1.36%	0.00169	Quartz	14808-60-7	56.20%	Solder mask PSR4000 AUS 308
			0.39%	0.00048	3-methoxy-3-methylbutylacetate	103429-90-9	16.00%	
			0.53%	0.00066	Barium Sulfate	7727-43-7	22.00%	
			0.07%	0.00009	Talc (containing no asbestiform fibers)	14807-96-6	3.00%	
			0.07%	0.00008	Trade secret ingredients	-	2.80%	

www.latticesemi.com

Rev. P1