



Device Material Content

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

Assembly: ASEM

Size (mm): 14 x 14

Lead pitch (mm): 0.8

MSL: 3

Reflow max (°C): 260

February-19

Package: 256 caBGA
Total Device Weight 0.532 Grams

Package Code:

BG256

Products:

XO2, XO3, ECP5

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.74%	0.0093	1.74%	0.0093	Silicon chip	7440-21-3	100.00%	Die size: 3.53 x 4.17 mm
Mold Compound	51.18%	0.2723	3.58%	0.0191	Epoxy Resin	-	7.00%	Mold Compound: Sumitomo G750SE (ULA)
			2.56%	0.0136	Phenol Novolac	9003-35-4	5.00%	
			2.56%	0.0136	Metal hydroxide	-	5.00%	
			0.26%	0.0014	Carbon Black	1333-86-4	0.50%	
			42.23%	0.2246	Silica Fused	60676-86-0	82.50%	
D/A Epoxy	0.28%	0.0015	0.22%	0.00120	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.06%	0.00030	Epoxy Resin	-	20.00%	
Wire	0.65%	0.0035	0.64%	0.0034	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.01%	0.0001	Palladium	7440-05-3	1.50%	
Solder Balls	18.26%	0.0971	17.62%	0.0937	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.55%	0.0029	Silver (Ag)	7440-22-4	3.00%	
			0.09%	0.0005	Copper (Cu)	7440-50-8	0.50%	
Substrate	17.53%	0.0933	5.61%	0.0298	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			11.92%	0.0634	Glass fiber	65997-17-3	68.00%	
Foil	6.17%	0.0328	4.82%	0.0256	Copper	7440-50-8	78.16%	
			1.13%	0.0060	Nickel plating	7440-02-0	18.31%	
			0.22%	0.0012	Gold plating	7440-57-5	3.53%	
Solder Mask	4.18%	0.0222	2.27%	0.0121	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.31%	0.0016	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.14%	0.0007	Morpholine derivative	71868-10-5	3.32%	
			0.13%	0.0007	Silicon dioxide	7631-86-9	3.00%	
			0.13%	0.0007	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.0001	Carbon black	1333-86-4	0.24%	
			1.20%	0.0064	Trade secret ingredients	-	28.74%	

Notes: * 0.18% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate core 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.

www.latticesemi.com





Device Material Content

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

Assembly: ASET
Size (mm): 14 x 14
Lead pitch (mm): 0.8
MSL: 3
Reflow max (°C): 260

Package: 256 caBGA
Total Device Weight: 0.532 Grams

Package Code: BG256

Products: XO2

October-18

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.74%	0.0093	1.74%	0.0093	Silicon chip	7440-21-3	100.00%	Die size: 3.53 x 4.17 mm
Mold Compound	51.18%	0.2723	44.78%	0.2383	Silica	60676-86-0	87.50%	Kyocera KE-G2250 series (ULA)
			3.33%	0.0177	Epoxy resin	-	6.50%	
			2.82%	0.0150	Phenol Resin	-	5.50%	
			0.26%	0.0014	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.28%	0.0015	0.22%	0.00120	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.06%	0.00030	Epoxy Resin	-	20.00%	
Wire	0.65%	0.0035	0.64%	0.0034	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.01%	0.0001	Palladium	7440-05-3	1.50%	
Solder Balls	18.26%	0.0971	17.99%	0.0957	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.18%	0.0010	Silver (Ag)	7440-22-4	1.00%	
			0.09%	0.0005	Copper (Cu)	7440-50-8	0.50%	
Substrate	17.53%	0.0933	5.61%	0.0298	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			11.92%	0.0634	Glass fiber	65997-17-3	68.00%	
Foil	6.17%	0.0328	4.82%	0.0256	Copper	7440-50-8	78.16%	
			1.13%	0.0060	Nickel plating	7440-02-0	18.31%	
			0.22%	0.0012	Gold plating	7440-57-5	3.53%	
Solder Mask	4.18%	0.0222	2.27%	0.0121	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.31%	0.0016	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.14%	0.0007	Morpholine derivative	71868-10-5	3.32%	
			0.13%	0.0007	Silicon dioxide	7631-86-9	3.00%	
			0.13%	0.0007	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.0001	Carbon black	1333-86-4	0.24%	
			1.20%	0.0064	Trade secret ingredients	-	28.74%	

Notes: * 0.18% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate core 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.

www.latticesemi.com





Device Material Content

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

Assembly: ATP
Size (mm): 14 x 14
Lead pitch (mm): 0.8
MSL: 3
Reflow max (°C): 260

October-18
Package: 256 caBGA
Total Device Weight: 0.532 Grams

Package Code: BG256
Products: XO2, XO3

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	1.74%	0.0093	1.74%	0.0093	Silicon chip	7440-21-3	100.00%	Die size: 3.53 x 4.17 mm
Mold Compound	51.18%	0.2723	3.58%	0.0191	Solid Epoxy Resin	-	7.00%	Mold Compound: Hitachi GE-110LS-V (ULA)
			2.56%	0.0136	Phenol Resin	-	5.00%	
			43.50%	0.2314	Silica	60676-86-0	85.00%	
			1.28%	0.0068	Metal Hydroxide	-	2.50%	
			0.26%	0.0014	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	0.28%	0.0015	0.22%	0.00120	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2300
			0.06%	0.00030	Esters & resins	-	20.00%	
Wire	0.65%	0.0035	0.64%	0.0034	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.01%	0.0001	Palladium	7440-05-3	1.50%	
Solder Balls	18.26%	0.0971	17.99%	0.0957	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.18%	0.0010	Silver (Ag)	7440-22-4	1.00%	
			0.09%	0.0005	Copper (Cu)	7440-50-8	0.50%	
Substrate	17.53%	0.0933	5.61%	0.0298	BT Resins	-	32.00%	BT Resin CCL-HL832NX-A*
			11.92%	0.0634	Glass fiber	65997-17-3	68.00%	
Foil	6.17%	0.0328	4.82%	0.0256	Copper	7440-50-8	78.16%	
			1.13%	0.0060	Nickel plating	7440-02-0	18.31%	
			0.22%	0.0012	Gold plating	7440-57-5	3.53%	
Solder Mask	4.18%	0.0222	2.27%	0.0121	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.31%	0.0016	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.14%	0.0007	Morpholine derivative	71868-10-5	3.32%	
			0.13%	0.0007	Silicon dioxide	7631-86-9	3.00%	
			0.13%	0.0007	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.0001	Carbon black	1333-86-4	0.24%	
			1.20%	0.0064	Trade secret ingredients	-	28.74%	

Notes: * 0.18% max. concentration of Bisphenol A (CAS# 80-05-7), contained in substrate core 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.

www.latticesemi.com

