

**LTM4647 77LD BGA-PBF 15mm X 9mm X 5.01mm (TABLE OF MATERIAL DECLARATION)**

This Package is RoHS compliant per EU RoHS Directive 2003/95/EC.  
It contains less than 100ppm cadmium (Cd) and less than 1,000ppm of each - lead (Pb), mercury (Hg), hexavalent chromium (Cr+)  
polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE)

No.	Part Name	Material Name	Component Weight (gram)	Materials Analysis (element)	CAS Number	Material Mass (gram)	Materials Analysis (weight %)
1	Substrate	Circuit Board	0.1658	Bismaleimide/Triazine Resin/Filler Substances (Silica Crystalline)	105391-33-1,1156-51-0/9003-36-5/21645-51-2,*non-disclosure	0.03839	23.16
				Continuous Filament Fiber Glass	65997-17-3	0.03404	20.54
				Copper Metal	7440-50-8	0.07769	46.87
				Zinc	7440-66-6	0.00001	0.00
				Chromium(III) oxide	1308-38-9	0.00000	0.00
				Bisphenol A epoxyresin	25068-38-6	0.00002	0.01
				Epoxy Resin	*non-disclosure	0.00013	0.08
				Imidazole system curing reagent	*non-disclosure		0.01
				Silica amorphous	7631-86-9	0.00012	0.07
				Acrylic Resin	*non-disclosure	0.00792	4.78
				Copper Compounds	147-14-8	0.00004	0.02
				Barium Compounds	7727-43-7	0.00415	2.51
				Talc;not containing fibers like asbestos	14807-96-6	0.00048	0.29
				Aromatic carbonyl compounds	non-disclosure	0.00045	0.27
				Cyanoguanidine	461-58-5	0.00001	0.01
				Amine compounds	*non-disclosure	0.00006	0.04
				Leveling agent and others	*non-disclosure	0.00018	0.11
				Nickel	7440-02-0	0.00179	1.08
				Phosphorus	7723-14-0	0.00013	0.08
				Gold	7440-57-5	0.00008	0.05
				Palladium	7440-05-3	0.00003	0.02
				**Ecotoxic substances	7440-38-2	0.00002	0.01
					7439-92-1		
2	Solder Paste	Alloy	0.0258	Tin (Sn)	7440-31-5	0.02453	95.00
				Antimony (Sb)	7440-36-0	0.00129	5.00
3	Active Ics	Silicon	0.0024	Silicon (Si)	7440-21-3	0.00237	100.00
4	Components	Passive/Active	0.6423	Iron Powder (Fe)	7439-89-6	0.49963	77.79
				Copper (Cu)	7440-50-8	0.12412	19.33
				Nickel (Ni)	7440-02-0	0.00227	0.35
				Tin (Sn)	7440-31-5	0.00432	0.67
				Ceramic (Ba) Compounds	12047-27-7	0.01190	1.85
4(i)	FC-DFN		0.0806				
	Active Ics	Silicon		Silicon (Si)	7440-21-3	0.00124	1.54
	Clip & Heatsink	Alloy		Copper (Cu)	7440-50-8	0.02487	30.86
				Iron (Fe)	7439-89-6	0.00061	0.76
				Zinc (Zn)	7440-66-6	0.00003	0.04
	Die & Clip Attach	Alloy		Lead	7439-92-1	0.00308	3.83
				Silver (Ag)	7440-22-4	0.00008	0.10
				Tin (Sn)	7440-31-5	0.00017	0.21
	Encapsulation	Epoxy Resin		Carbon Black	1333-86-4	0.00022	0.27
				Epoxy Resin	85954-11-6	0.00199	2.48
				Phenolic resin	9003-35-4	0.00044	0.55
				Silica (Si)	60676-86-0	0.01948	24.17
	Lead frame	Lead frame		Copper (Cu)	7440-50-8	0.02487	30.86

	Terminal Finish	Plating		Iron (Fe)	7439-89-6	0.00062	0.77
				Silver (Ag)	7440-22-4	0.00028	0.35
				Zinc (Zn)	7440-66-6	0.00003	0.04
				Tin (Sn)	7440-31-5	0.00164	2.03
	Wire	Gold		Gold (Au)	7440-57-5	0.00008	0.10
		Copper		Copper (Cu)	7440-50-8	0.00083	1.03
		5		Wire	Gold	0.0000	Gold (Au)
6	Heatsink	Copper	0.1753	Copper (Cu)	7440-50-8	0.17527	100.00
7	Solder Ball	Alloy	0.1312	Tin (Sn)	7440-31-5	0.12663	96.50
				Silver (Ag)	7440-22-4	0.00394	3.00
				Copper (Cu)	7440-50-8	0.00066	0.50
8	Encapsulation	Epoxy Resin	0.7811	Fused Silica	60676-86-0	0.60305	77.20
				Epoxy Resin	non-disclosure	0.06952	8.90
				Phenol Resin	non-disclosure	0.06952	8.90
				Crytalline Silica	14808-60-7	0.02343	3.00
				Carbon Black	1333-86-4	0.00391	0.50
				Metal Hydroxide	non-disclosure	0.01172	1.50
Total Package Weight			2.0045				

Note: Composition derived from MSDS and material C of C from Vendors  
Component Weight based on assembly of generic parts