

# Material Composition Specification

## TO-247 Case



Device average mass ..... 6.175 g  
 Fluctuation margin ..... +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.11%	7.1	Si	7440-21-3	0.11%	7.1	1,150
bond wire	aluminum	0.23%	14.22	Al	7429-90-5	0.23%	14.22	2,303
leadframe	Cu alloy	64.79%	4000.65	Cu	7440-50-8	64.66%	3993.05	646,648
				Fe	7439-89-6	0.1%	6	972
				P	7723-14-0	0.03%	1.6	259
die attach	high temperature solder	0.23%	14.32	Pb	7439-92-1	0.21%	13.246	2,145
				Sn	7440-31-5	0.01%	0.716	116
				Ag	7440-22-4	0.01%	0.36	58
encapsulation*	EMC	33.59%	2074.21	silica	7631-86-9	26.15%	1614.5	261,457
				epoxy resin	29690-82-2	3.38%	208.85	33,821
				phenol resin	9003-35-4	3.05%	188.385	30,508
				carbon black	1333-86-4	0.1%	5.887	953
				Sb <sub>2</sub> O <sub>3</sub>	1309-64-4	0.73%	45.359	7,346
				TBBA	79-94-7	0.18%	11.234	1,819
	EMC GREEN	33.59%	2074.21	silica	7631-86-9	26.87%	1659.26	268,706
				epoxy resin	29690-82-2	4.03%	249	40,324
				phenol resin	9003-35-4	2.35%	145.2	23,514
				carbon black	1333-86-4	0.34%	20.75	3,360
plating**	tin/lead process	1.04%	64.5	Sn	7440-31-5	0.83%	51.5	8,340
				Pb	7439-92-1	0.21%	13	2,105
	matte tin	5.18%	64.5	Sn	7440-31-5	1.04%	64.5	10,445

\*EMC GREEN molding compound is Halogen-Free.

\*\*For Lead Free plating, add suffix "PB FREE" to part number.

For Tin/Lead plating, add suffix "TIN/LEAD" to part number.

No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

### Disclaimer

The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

R0 (23-August 2018)