

# Material Composition Specification

## TO-202-2 Case



Device average mass ..... 927 mg  
 Fluctuation margin ..... +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.13%	1.2	Si	7440-21-3	0.129%	1.2	1,294
bond wire	aluminum	0.43%	4	Al	7429-90-5	0.431%	4	4,315
leadframe	Cu alloy 194 w/ silver plating	34.74%	322	Cu	7440-50-8	33.84%	313.7	338,403
				Fe	7439-89-6	0.8%	7.42	8,004
				Zn	7440-66-6	0.043%	0.4	431
				P	7723-14-0	0.035%	0.32	345
				Ag	7440-22-4	0.017%	0.16	173
encapsulation*	EMC	63.32%	587	silica	7631-86-9	46.224%	428.5	462,244
				epoxy resin	Proprietary	14.563%	135	145,631
				Sb <sub>2</sub> O <sub>3</sub>	1309-64-4	1.268%	11.75	12,675
				TBBA	79-94-7	1.268%	11.75	12,675
	EMC GREEN	63.32%	587	silica (fused)	60676-86-0	53.83%	499	538,296
				epoxy resin	Proprietary	4.024%	37.3	40,237
				phenol resin	9003-35-4	4.024%	37.3	40,237
				epoxy, cresol novolac	29690-82-2	1.262%	11.7	12,621
				carbon black	1333-86-4	0.183%	1.7	1,834
plating**	tin/lead process	1.38%	12.8	Sn	7440-31-5	1.1%	10.2	11,003
				Pb	7439-92-1	0.28%	2.6	2,805
	matte tin	1.38%	12.8	Sn	7440-31-5	1.381%	12.8	13,808

\*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.

R1 (16-July 2018)