


# Material Composition Specification

## TO-92 Case (Eutectic Die Attach)

Pb (lead)-free plating\*\* 

Device average mass ..... **210 mg**

Fluctuation margin ..... **+/-10%**

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.03%	0.072	Si	7440-21-3	0.03%	0.072	345
bond wire	gold	0.02%	0.032	Au	7440-57-5	0.02%	0.032	150
leadframe	Cu alloy w/ silver plating	43.76%	91.898	Cu	7440-50-8	43.64%	91.644	436,400
				Ag	7440-22-4	0.12%	0.254	1,210
encapsulation*	EMC	53.41%	112.159	silica	7631-86-9	38.51%	80.861	385,050
				epoxy resin	Proprietary	13.43%	28.205	134,310
				Sb <sub>2</sub> O <sub>3</sub>	1309-64-4	1.07%	2.249	10,710
				TBBA	79-94-7	0.27%	0.563	2,680
				carbon	1333-86-4	0.13%	0.281	1,340
	EMC GREEN	53.41%	112.159	silica	7631-86-9	39.5%	82.94	394,952
				epoxy resin	Proprietary	13.78%	28.93	137,764
				carbon	1333-86-4	0.13%	0.288	1,374
plating**	tin lead process	2.78%	5.838	Sn	7440-31-5	1.67%	3.507	16,700
				Pb	7439-92-1	1.11%	2.331	11,100
	100% tin process	2.78%	5.838	Sn	7440-31-5	2.78%	5.838	27,800

\*EMC GREEN molding compound is Halogen-Free.


\*\*Specify Lead-Free when ordering 100% tin (Pb-free) plating.

### Disclaimer

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

# Material Composition Specification

## TO-92 Case (Solder Die Attach)

Pb (lead)-free plating\*\* 

Device average mass ..... 210 mg

Fluctuation margin ..... +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.03%	0.072	Si	7440-21-3	0.03%	0.072	345
bond wire	gold	0.02%	0.032	Au	7440-57-5	0.02%	0.032	150
leadframe	Cu alloy w/silver plating	43.76%	91.898	Cu	7440-50-8	43.64%	91.644	436,400
				Ag	7440-22-4	0.12%	0.254	1,210
die attach	solder	0.12%	0.25	Pb	7439-92-1	0.11%	0.233	1,110
				Sn	7440-31-5	0.01%	0.013	60
				Ag	7440-22-4	0.00%	0.006	30
encapsulation*	EMC	53.29%	111.908	silica	7631-86-9	38.42%	80.68	384,190
				epoxy resin	Proprietary	13.41%	28.162	134,105
				Sb <sub>2</sub> O <sub>3</sub>	1309-64-4	1.07%	2.237	10,650
				TBBA	79-94-7	0.26%	0.554	2,640
				carbon	1333-86-4	0.13%	0.275	1,310
	EMC GREEN	53.29%	111.908	silica	7631-86-9	39.40%	82.744	394,016
				epoxy resin	Proprietary	13.75%	28.882	137,535
carbon				1333-86-4	0.13%	0.282	1,344	
plating**	tin lead process	2.78%	5.838	Sn	7440-31-5	1.67%	3.507	16,700
				Pb	7439-92-1	1.11%	2.331	11,100
	100% tin process	2.78%	5.838	Sn	7440-31-5	2.78%	5.838	27,800

\*EMC GREEN molding compound is Halogen-Free.

\*\*Specify Lead-Free when ordering 100% tin (Pb-free) plating.

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