Material Composition Specification

TO-247 Case

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

Component	Material	Material		Substance	CAS #	Substance		
		% wt	mg			% wt	mg	ppm
active device	doped Si	0.11%	7.100	Si	7440-21-3	0.11%	7.100	1,150
die attach	high temperature solder	0.23%	14.320	Pb	7439-92-1	0.21%	13.25	2,145
				Ag	7440-22-4	0.01%	0.36	58
				Sn	7440-31-5	0.01%	0.716	116
bond wire	Aluminum	0.23%	14.220	Al	7440-57-5	0.23%	14.220	2,303
leadframe	Cu alloy	64.79%	4000.65	Cu	7440-50-8	64.66%	3993.050	646,648
				Fe	7439-89-6	0.10%	6.000	972
				P	7723-14-0	0.03%	1.600	259
encapsulation	EMC	33.59%	2074.21	silica	7631-86-9	26.15%	1614.50	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	0.10%	5.887	953
				Sb2O3	1309-64-4	0.73%	45.359	7,346
				TBBA	79-94-7	0.18%	11.234	1,819
leadframe plating *	tin lead process	1.04%	64.50	Sn	7440-31-5	0.83%	51.500	8,340
				Pb	7439-92-1	0.21%	13.000	2,105
	matte tin	5.18%	64.50	Sn	7440-31-5	1.04%	64.50	10,445

*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.

R1 (12-January 2024)

Material Composition Specification

TO-247 Case

Device average mass . . . . **6.240 g**

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

Component	Material	Material		Substance	CAS #	Substance		
		% wt	mg			% wt	mg	ppm
active device	doped Si	0.31%	19.20	Si	7440-21-3	0.31%	19.20	3,077
die attach	high temperature solder	10.35%	646.02	Pb	7439-92-1	9.11%	568.50	91,106
				Ag	7440-22-4	1.04%	64.60	10,353
				Sn	7440-31-5	0.21%	12.92	2,071
bond wire	Aluminum	0.22%	13.85	Al	7440-57-5	0.22%	13.85	2,220
leadframe	Cu alloy	54.14%	3378.37	Cu	7440-50-8	54.06%	3373.30	540,593
				Fe	7439-89-6	0.08%	5.07	813
encapsulation*	EMC GREEN	34.56%	2156.76	silica	7631-86-9	22.81%	1423.46	228,119
				Si-oxide Quartz	14808-60-7	6.91%	431.34	69,125
				Phenol-formaldehyde polymer	9003-35-4	3.46%	215.68	34,564
				3-Trimethoxysilylpropane1-thiol	4420-74-0	0.35%	21.57	3,457
				Triphenylphosphine	39319-11-4	0.35%	21.57	3,457
				Ethene, homopolymer	9002-88-4	0.35%	21.57	3,457
				carbon black	1333-86-4	0.35%	21.57	3,457
leadframe plating	matte tin	0.41%	25.80	Sn	7440-31-5	0.41%	25.80	4,135

*EMC GREEN molding compound is Halogen-Free.

R1 (12-January 2024)