

MATERIAL DECLARATION SHEET



Package Type	TO-92			
Product Line	TSP (Transistors & Thyristors)			
Compliance Date	November 30, 2004			
RoHS Compliant	Yes (-S suffix)	MSL	N/A	

Bourns Transistor, SCR & Triac products complying with RoHS legislation are identified with a “-S” suffix in the component part number e.g. TICP106-S

No.	Construction Element (subpart)	Homogeneous Material	Material weight [g]	Homogeneous Material\ Substances	CASRN if applicable	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
1	Encapsulation	Epoxy resin	0.115998	Crystalline Silica	14808-60-7	80.00	43.978	54.972
				OCN Epoxy resin		11.00	6.047	
				Phenol resin		6.20	3.408	
				Antimony Oxides	1309-64-4	2.00	1.099	
				Cristobalite	14464-46-1	0.50	0.275	
				Carbon Black	1333-86-4	0.30	0.165	
2	Leadframe	Copper alloy	0.085447	Copper	7440-50-8	96.28	38.988	40.493
				Iron	7439-89-6	2.27	0.919	
				Zinc	7440-66-6	0.10	0.040	
				Phosphorous	7723-14-0	0.03	0.012	
				Silver	7440-22-4	1.32	0.534	
3	Chip	Silicon	0.002337	Silicon	7440-21-3	97.79	1.083	1.107
				Aluminium	7429-90-5	1.21	0.013	
				Titanium	7440-32-6	0.18	0.002	
				Nickel	7440-02-0	0.70	0.008	
				Gold	7440-57-5	0.12	0.001	
4	Die Attach	Silver epoxy	0.000280	Silver	7440-22-4	75.00	0.099	0.132
				Epoxy	9003-36-5	25.00	0.033	
5	Bond wires	Gold	0.000299	Gold	7440-57-5	99.99	0.142	0.142
6	Terminal Finish	Matte Tin	0.006648	Matte Tin	7440-31-5	100.00	3.150	3.150
		Total weight	0.211009					

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RoHS Compliance Verification.

The substance content of Bourns products in TO-92 package has been verified for RoHS compliance. The following is a summary of analytical analysis reports from external laboratories provided to Bourns by its suppliers.

Substance	Analysis Method	Detect Limit	Unit	Material	Package Body	Leadframe	Die Attach Epoxy	Bond Wire	Terminal Finish
Lead (Pb)	ICP-AES US EPA 3050B or other acid digestion.	2	ppm	Pb/Hg/Cd & Cr+6 Analysis Result	N.D	N.D	N.D	N.D	232
Mercury (Hg)	ICP-AES or Mercury Analyzer US EPA 3052 or other acid digestion	2	ppm		N.D	N.D	N.D	N.D	N.D
Cadmium (Cd)	ICP-AES EN1122, Method B:2001, US EPA 3050B or other acid digestion.	2	ppm		N.D	N.D	N.D	N.D	N.D
Hexavalent Chromium (Cr+6)	UV-Vis US EPA 7196A, US EPA 3060A	2	ppm		N.D	N.D	N.D	N.D	N.D
Polybrominated biphenyls (PBBs)	GC/MS, ECDMS, LC/MS or HPLC/DAD	5	ppm	PBBs / PBDEs Analysis Result	N.D	-	N.D	N.D	-
Polybrominated diphenyl ethers (PBDEs)	GC/MS, ECDMS, LC/MS or HPLC/DAD	5	ppm		N.D	-	N.D	N.D	-

Note: N.D = Not Detected (<Minimum detection limit)
 - = Not Applicable

Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.