

# BOURNS Thyristor Surge Protectors

BOURNS®



This product is RoHS compliant.

## BOURNS TISP THYRISTOR OVERVOLTAGE PROTECTORS

Continuing to provide the most complete solutions to your circuit protection needs, Bourns recently introduced the TISP® line of products. The TISP® products are specially designed to provide protection for telecommunications equipment in instances where high voltages occur as a result of lightning strikes, power line crosses or a/c power surges. Coupled with Bourns' Mulfuse® PPTC overcurrent protectors and Bourns, Line Protection Networks, the TISP® products offer telecom customers a more comprehensive total protection product line.

### Bidirectional Thyristor Surge Protector

This TISP® device series protects central office, access and customer premise equipment against overvoltages on the telecom line. These devices are housed in a through-hole DO-92 package (TO-92 package with cropped center leg).

For quantities greater than listed, call for quote.

MOUSER STOCK NO.		Fig.	Vdrrm(V) Standoff Voltage	Vbo(V) Protect Voltage	Delta Capacitance	Ratings for Lighting Surge Standards		Price Each			
Mfr.	Mfr. Part No.					IEC 61000-4-5 8/20 μs(A)	GR-1089-CORE 10/1000 μs(A)	1	50	100	500
652	TISP4P015L1NR-S	A	8	15	2	30	18	.46	.36	.34	.30
652	TISP4P020L1NR-S	A	12	20	3	30	18	.46	.36	.34	.30
652	TISP4P025L1NR-S	A	16	25	3	30	18	.46	.36	.34	.30
652	TISP4P035L1NR-S	A	24	35	2	30	18	.46	.36	.34	.30

### SMALL-OUTLINE PACKAGES

This small-outline package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.

### Quad-Forward-Conducting Buffered P-Gate Thyristor

Independent Overvoltage Protection for Two SLICs in Short Loop Applications:

- Wide 0 to -90V Programming Range
- Low 5mA max. Gate Triggering Current
- High 150mA min. (85°C) Holding Current
- Specified 1.2/50 & 0.5/700 Limiting Voltage
- Full -40°C to 85°C Temperature Range



For quantities greater than listed, call for quote.

MOUSER STOCK NO.		Fig.	Protect. Voltage V <sub>(BO)</sub> (V)	I <sub>PPSM</sub> Ratings for Lighting Surge Standards				Price Each			
Mfr.	Mfr. Part No.			GR-1089-CORE 2/10 μs (A)	ANSI C62.41 8/20 μs (A)	ITU-T K.20/21 5/310 μs (A)	GR-1089-CORE 10/1000 μs (A)	1	50	100	500
652	TISP6NTP2ADR-S	B	0 to -90	85	75	25	20	2.04	1.22	1.03	.90
652	TISP61089DR-S	B	0 to -75	120	No Value	40	30	1.55	.86	.74	.65
652	TISP61089QDR-S	B	0 to -64	120	No Value	40	30	.89	.84	.80	.74
652	TISP6NTP2CDR-S	B	0 to -150	90	No Value	40	25	2.04	1.22	1.03	.90
652	TISP8200MDR-S	B	0 to -90	210	No Value	70	45	1.44	1.15	1.05	.88
652	TISP8201MDR-S	B	0 to +90	210	No Value	70	45	1.44	1.15	1.05	.88

### Dual Forward-Conducting P-Gate and N-Gate Thyristor Programmable Overvoltage Protectors

This is a dual forward-conducting buffered p-gate thyristor (SCR) overvoltage protector. It is designed to protect monolithic SLICs (Subscriber Line Interface Circuits) against overvoltages on the telephone line caused by lightning, a/c power contact and inductions. The TISP61089B limits voltages that exceed the SLIC supply rail voltage. The TISP61089B parameters are specified to allow equipment compliance with Bell core GR-1089-CORE, Issue 2 and ITU-T recommendations K.20, K.21 and K.45.



For quantities greater than listed, call for quote.

MOUSER STOCK NO.		Fig.	Protect. Voltage V <sub>(BO)</sub> (V)	I <sub>PPSM</sub> Ratings for Lighting Surge Standards				Price Each			
Mfr.	Mfr. Part No.			GR-1089-CORE 2/10 μs (A)	ANSI C62.41 8/20 μs (A)	ITU-T K.20/21 5/310 μs (A)	GR-1089-CORE 10/1000 μs (A)	1	50	100	500
652	TISP61089ADR-S	B	0 to -120	120	---	40	30	1.55	.86	.74	.65
652	TISP61089BDR-S	B	0 to -170	120	---	40	30	1.55	.86	.74	.65
652	TISP61089HDMR-S	B	0 to -170	---	150	100	---	3.45	2.07	1.87	1.66
652	TISP61089QBDR-S	B	-20 to -155	120	---	40	30	1.55	.85	.73	.65
652	TISP8200HDMR-S	B	0 to -70	500	---	150	100	4.60	4.03	3.74	3.45
652	TISP8201HDMR-S	B	0 to 70	500	---	150	100	4.60	4.03	3.74	3.45

### SURFACE MOUNT PACKAGES

This surface mount package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.

### Very Low Voltage Bidirectional Thyristor Overvoltage Protectors

For quantities greater than listed, call for quote.

MOUSER STOCK NO.		Fig.	Standoff Voltage V <sub>(BO)</sub> (V)	Protect. Voltage V <sub>(BO)</sub> (V)	Holding Current I <sub>H(MA)</sub>	I <sub>PPSM</sub> Ratings for Lighting Surge Standards				Price Each			
Mfr.	Mfr. Part No.					GR-1089-CORE 2/10 μs (A)	TIA/EIA-IS-968 10/560 μs (A)	ITU-T K.20/21 5/310 μs (A)	GR-1089-CORE 10/1000 μs (A)	1	50	100	500
652	TISP4015H1BJR-S	C1	8	15	50	500	125	150	100	.46	.36	.34	.30
652	TISP4040H1BJR-S	C1	25	40	50	500	125	150	100	.46	.36	.34	.30

### Forward-Conducting Unidirectional Thyristor Overvoltage Protectors

For quantities greater than listed, call for quote.

MOUSER STOCK NO.		Fig.	Standoff Voltage V <sub>(BO)</sub> (V)	Protect. Voltage V <sub>(BO)</sub> (V)	I <sub>PPSM</sub> Ratings for Lighting Surge Standards				Price Each				
Mfr.	Mfr. Part No.				GR-1089-CORE 2/10 μs (A)	ANSI C62.41 8/20 μs (A)	TIA/EIA-IS-968 10/560 μs (A)	ITU-T K.20/21 5/310 μs (A)	GR-1089-CORE 10/1000 μs (A)	1	50	100	500
652	TISP5070H3BJR-S	C2	-58	-70	500	300	160	200	100	.58	.45	.43	.39
652	TISP5080H3BJR-S	C2	-65	-80	500	300	160	200	100	.58	.45	.43	.39

### Bidirectional Thyristor Overvoltage Protectors



For quantities greater than listed, call for quote.

MOUSER STOCK NO.		Fig.	Standoff Voltage V <sub>(BO)</sub> (V)	Protect. Voltage V <sub>(BO)</sub> (V)	Holding Current I <sub>H(MA)</sub>	I <sub>PPSM</sub> Ratings for Lighting Surge Standards				Price Each			
Mfr.	Mfr. Part No.					GR-1089-CORE 2/10 μs (A)	TIA/EIA-IS-968 10/560 μs (A)	ITU-T K.20/21 5/310 μs (A)	GR-1089-CORE 10/1000 μs (A)	1	50	100	500
652	TISP4125H3BJR-S	C1	100	125	150	500	160	200	100	.58	.45	.43	.39
652	TISP4145M3BJR-S	C1	120	145	150	300	100	100	50	.66	.50	.44	.37
652	TISP4C115H3BJR-S	C1	90	115	150	500	100	150	100	.98	.50	.44	.37
652	TISP4C290H3BJR-S	C1	220	150	150	500	100	150	100	.98	.50	.44	.37
652	TISP4C350H3BJR-S	C1	275	150	150	500	100	150	100	.98	.50	.44	.37

DIMENSIONS: mm (in.)

A

B

NOTES:

- Leads are within 0.25 (0.010) radius of true position at maximum material condition.
- Body dimensions do not include mold flash or protrusion.
- Mold flash or protrusion shall not exceed 0.15 (0.006).
- Lead tips to be planar within ±0.051 (0.002).

C

1

2

Top View

Top View

Thyristors

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