

TRISIL

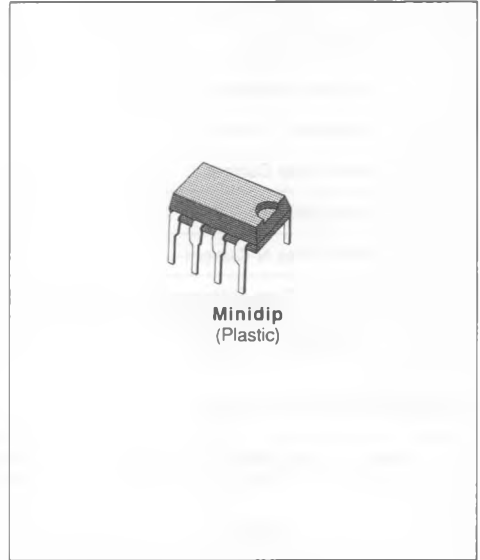
**UNIDIRECTIONAL PROGRAMMABLE VOLTAGE AND CURRENT SUPPRESSOR**

- HIGH CURRENT CAPABILITY
- PROGRAMMABILITY BOTH IN VOLTAGE AND CURRENT
- AUTOMATIC RECOVERY

**DESCRIPTION**

The L3100B/B1 is a transient overvoltage suppressor/overcurrent arrester designed to protect sensitive components in electronic telephones and telecommunication equipments against transients caused by lightning, induction from power lines, etc.

The L3100B/B1 characteristic, that is its firing voltage and current, can be easily programmed by means of inexpensive external components ; more over, since this device recovers automatically when the surge current falls below a fixed holding current, it may be used on remotely supplied lines. Finally, if destroyed, it becomes a permanent short circuit.

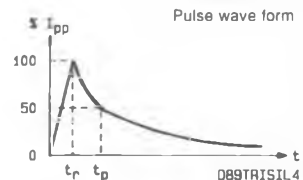

**ABSOLUTE RATINGS** (limiting values) ( $T_j = 25\text{ }^\circ\text{C}$ )

Symbol	Parameter	Value	Unit
$I_{pp}$	Peak Pulse Current	1 ms expo	150
		8-20 $\mu\text{s}$ expo*	250
$I_{TSM}$	Non Repetitive Surge Peak on-state Current	$t_p = 10\text{ ms} - \text{Sinus}$	50
$di/dt$	Critical Rate of Rise of on-state Current	Non repetitive	100
$T_{stg}$ $T_j$	Storage and Junction Temperature Range	- 40 to 150	$^\circ\text{C}$
		150	$^\circ\text{C}$

**THERMAL RESISTANCE**

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to Ambient	80	$^\circ\text{C/W}$

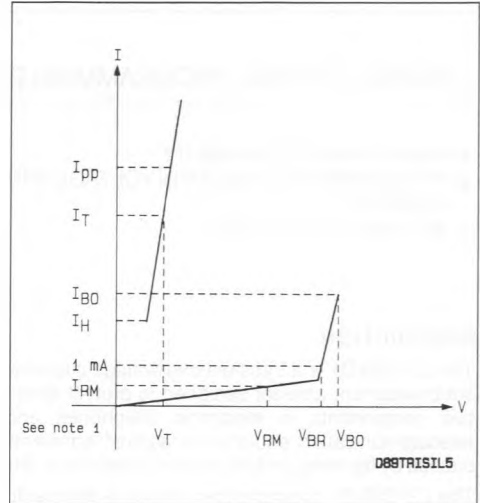
\* ANSI STD C62.



**ELECTRICAL CHARACTERISTICS**

(T<sub>j</sub> = 25 °C)

Symbol	Parameter
V <sub>RM</sub>	Stand-off Voltage
V <sub>BR</sub>	Breakdown Voltage
V <sub>BO</sub>	Clamping Voltage
I <sub>H</sub>	Holding Current
V <sub>T</sub>	On-state Voltage @ I <sub>T</sub>
I <sub>BO</sub>	Breakover Current
I <sub>pp</sub>	Peak-pulse Current
V <sub>GN</sub>	Gate Voltage
I <sub>GN</sub>	Firing Gate N Current
V <sub>RGN</sub>	Reverse Gate N Voltage
I <sub>GP</sub>	Firing Gate P Current



**OPERATION WITHOUT GATE**

Type	I <sub>RM</sub> @ V <sub>RM</sub> max.		V <sub>BR</sub> @ I <sub>R</sub> min. max.		V <sub>BO</sub> @ I <sub>BO</sub> max. min. max. See note 2			I <sub>H</sub> min.	V <sub>T</sub> typ. I <sub>T</sub> = 1 A	C max. V <sub>R</sub> = 5 V F = 1 MHz
	(μA)	(V)	(V)	(V)	(mA)	(V)	(mA)	(mA)	(V)	(pF)
L3100B/B1	6 40	60 250	255 (3) 265 (4)		1	350	200 500	210 (3) 280 (4)	2	100

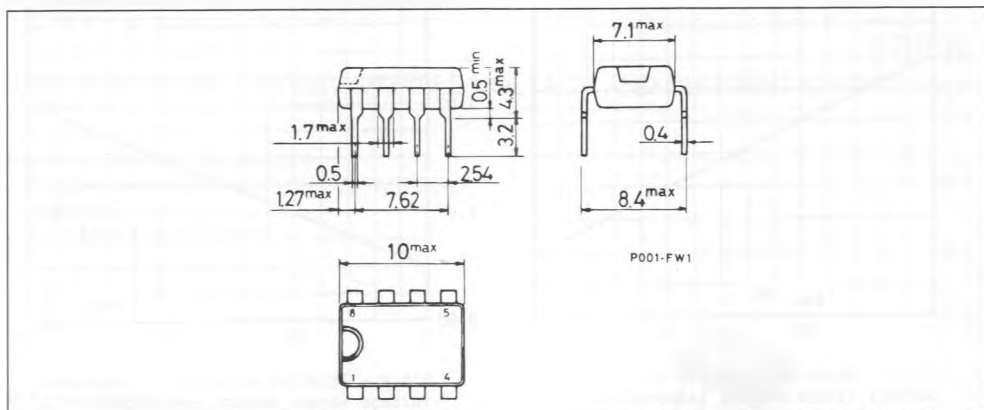
**OPERATION WITH GATES**

Type	V <sub>GN</sub> (V) I <sub>G</sub> = 200 mA		I <sub>GN</sub> (mA) V <sub>A</sub> - C = 100 V		V <sub>RGN</sub> (V) I <sub>G</sub> = - 1 mA		I <sub>GP</sub> (mA) V <sub>A</sub> - C = 100 V	
	min.	max.	min.	max.	min.	max.	min.	max.
L3100B/B1	0.6	1.8	30	200	0.7			150

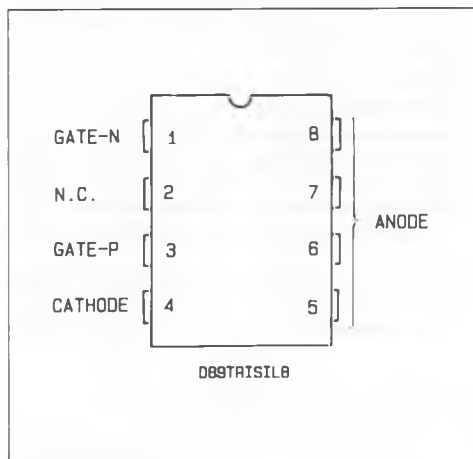
- Notes :**
1. Reverse characteristic : I<sub>R</sub> < 1 mA @ V<sub>R</sub> = 0.7V.
  2. These devices are not designed to function as zeners ; continuous operation between 1 mA and I<sub>BO</sub> will damage them.
  3. L3100B1
  4. L3100B

## PACKAGE MECHANICAL DATA

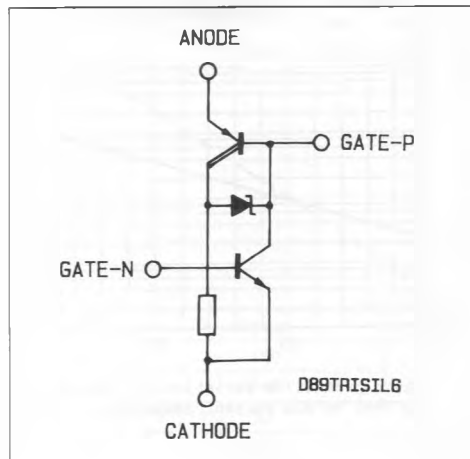
MINIDIP Plastic



## CONNECTION DIAGRAM



## SCHEMATIC DIAGRAM



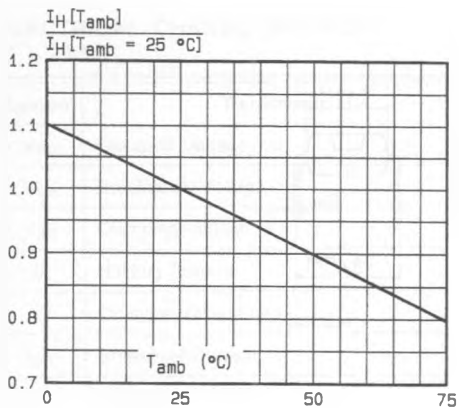


Fig.1 - Relative variation of holding current versus ambient temperature.

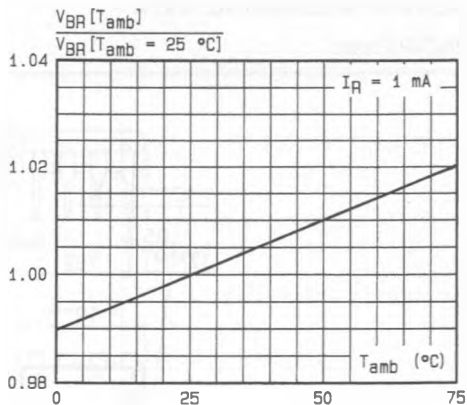


Fig.2 - Relative variation of breakdown voltage versus ambient temperature.

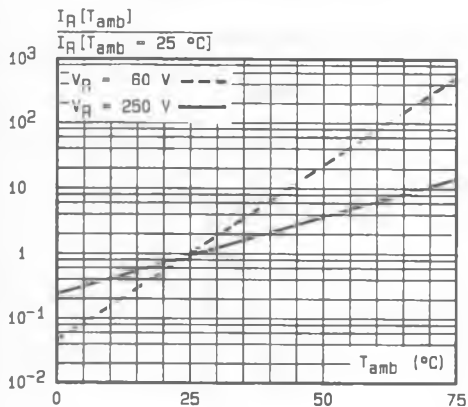


Fig.3 - Relative variation of leakage current versus ambient temperature.

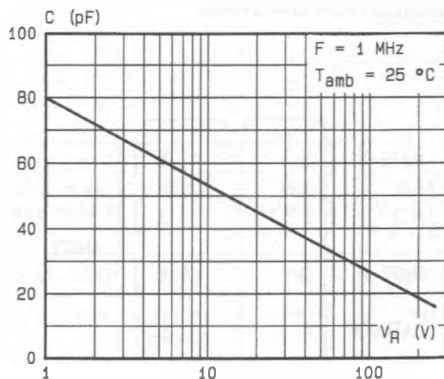


Fig.4 - Junction capacitance versus reverse applied voltage.

089L3100B1P4