

**TRISIL**

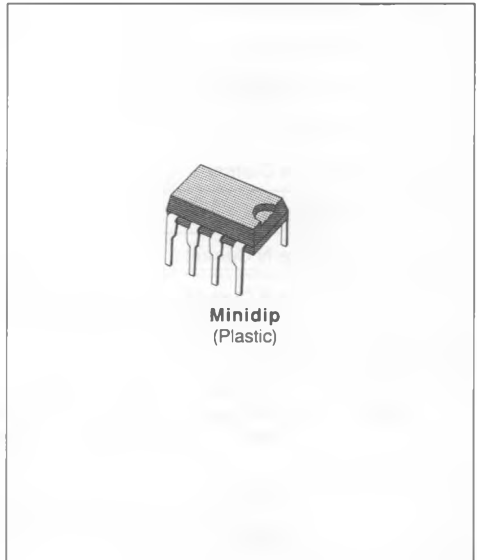
**UNIDIRECTIONAL PROGRAMMABLE VOLTAGE AND CURRENT SUPPRESSOR**

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

**DESCRIPTION**

The L3101B 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 L3101B 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.

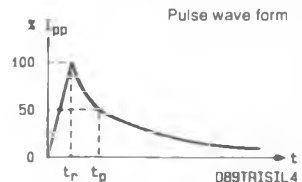

**ABSOLUTE RATINGS** (limiting values) ( $T_J = 25\text{ }^\circ\text{C}$ )

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

**THERMAL RESISTANCE**

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

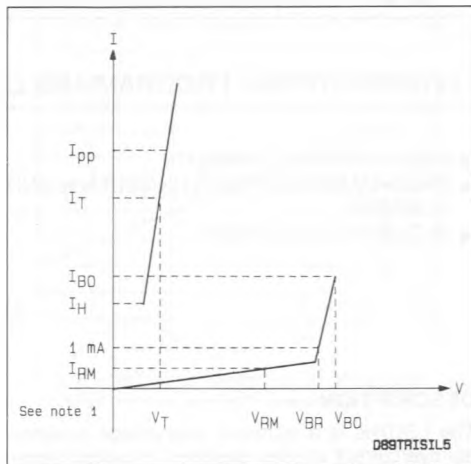
\* ANSI STD C62.



**ELECTRICAL CHARACTERISTICS**

( $T_j = 25\text{ }^\circ\text{C}$ )

Symbol	Parameter
$V_{RM}$	Stand-off Voltage
$V_{BR}$	Breakdown Voltage
$V_{BO}$	Clamping Voltage
$I_H$	Holding Current
$V_T$	On-state Voltage @ $I_T$
$I_{BO}$	Breakover Current
$I_{pp}$	Peak-pulse Current
$V_G$	Gate Voltage
$I_{GN}$	Firing Gate N Current
$I_{GP}$	Firing Gate P Current



**OPERATION WITHOUT GATE**

Type	$I_{RM} @ V_{RM}$ max.		$V_{BR} @ I_R$ min. max.			$V_{BO} @ I_{BO}$ max. typ. max. See note 2			$I_H$ min.	$V_T$ typ. $I_T = 1\text{ A}$	$C$ max. $V_R = 5\text{ V}$ $F = 1\text{ MHz}$
	( $\mu\text{A}$ )	(V)	(V)	(V)	(mA)	(V)	(mA)	(mA)	(mA)	(V)	(pF)
L3101B	5 8	60 90	100		1	180	200	500	150	2	200

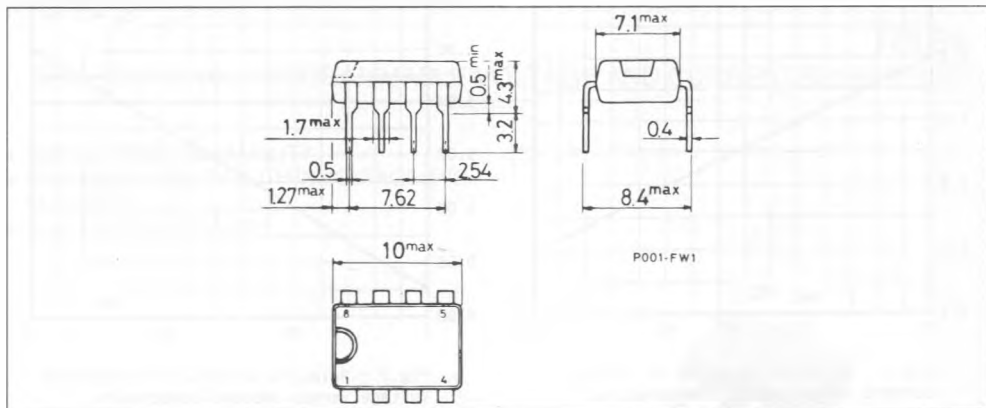
**OPERATION WITH GATES**

Type	$V_G$ (V) $I_G = 200\text{ mA}$		$I_{GN}$ (mA) $V_A - C = 60\text{ V}$		$I_{GP}$ (mA) $V_A - C = 60\text{ V}$	
	min.	max.	min.	max.	min.	max.
L3101B	0.6	1.8	30	200		180

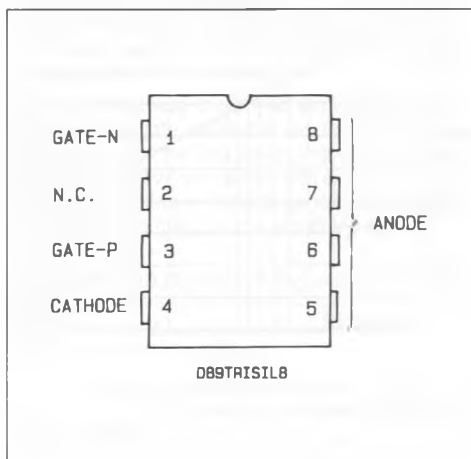
- Notes :**
- Reverse characteristic non specified.
  - These devices are not designed to function as zeners ; continuous operation between 1 mA and  $I_{BO}$  will damage them.

## PACKAGE MECHANICAL DATA

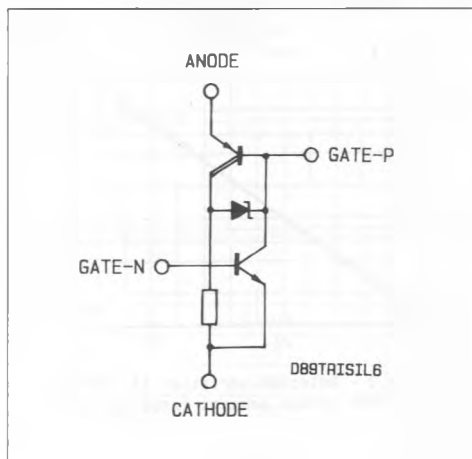
MINIDIP Plastic



## CONNECTION DIAGRAM



## SCHEMATIC DIAGRAM



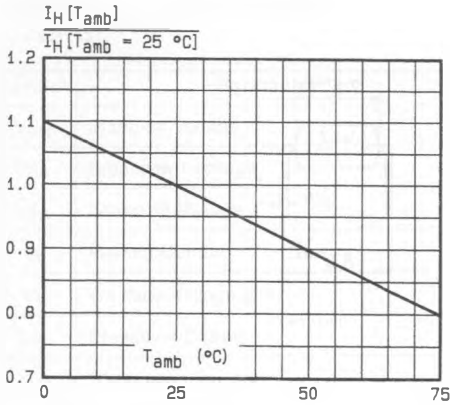


Fig.1 - Relative variation of holding current versus ambient temperature.

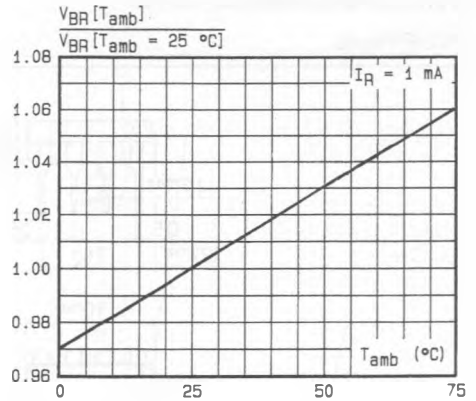


Fig.2 - Relative variation of breakdown voltage versus ambient temperature.

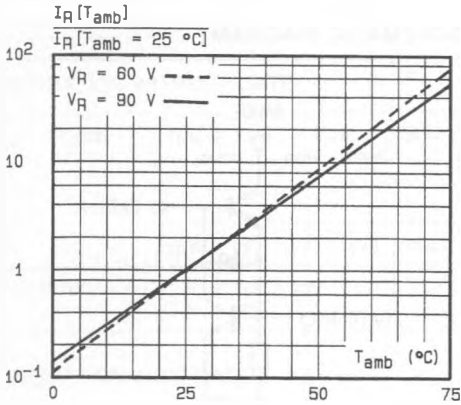


Fig.3 - Relative variation of leakage current versus ambient temperature.

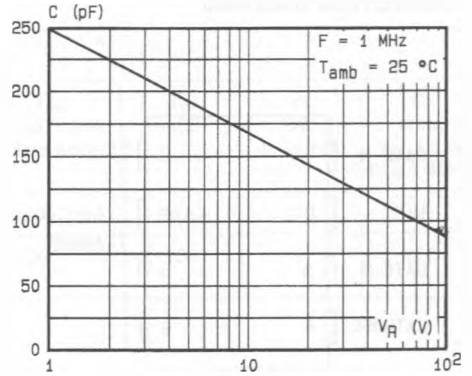


Fig.4 - Junction capacitance versus reverse applied voltage.

DB9L3101BP4