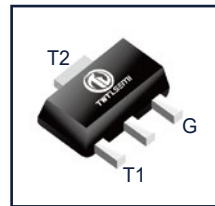
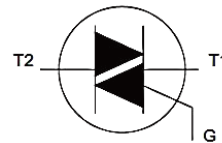


GENERAL DESCRIPTION

Passivated, sensitive gate triac in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers. Logic integrated circuits and other low power gate trigger circuits.



SOT-89-3L



Equivalent Circuit

Ordering information

Product ID	Marking	Naming rule	Pack	Qty(PCS)
BT131	BT131	BT131 ↓ 产品名称 product name	SOT-89-3L	1000

limit Parameter

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	On state root mean square current		$T_c=90^{\circ}C$	1	A
I_{TSM}	On state surge current	$F=50HZ$	$t=20ms$	10	A
I^2t	Limit value of I^2t	$tp=10ms$		0.5	A^2S
di/dt	Critical rise rate of on state current		$T_j=125^{\circ}C$	50	A/us
V_{DRM}/V_{RRM}	Repetitive peak off-state voltage Repetitive Peak Reverse Voltage		$T_j=25^{\circ}C$	600/800	V
I_{GM}	Peak current of gate pole	$tp=20us$	$T_j=125^{\circ}C$	4	A
$P_{G(AV)}$	Gate pole average dissipated power		$T_j=125^{\circ}C$	0.5	W
T_{stg} T_j	Storage temperature Effective junction temperature			- 40 to +150 - 40 to +125	$^{\circ}C$

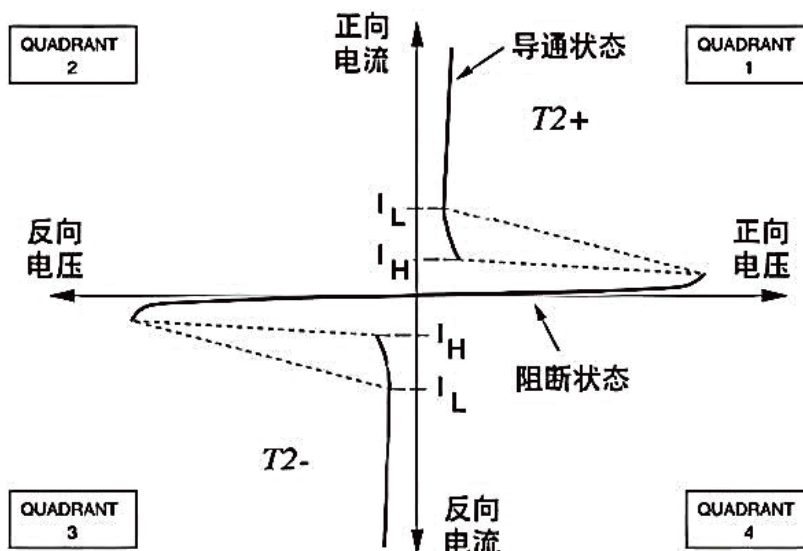
Electrical Characteristics

Symbol	Name and testing conditions	Quadrant		Value	Unit
I_{GT}	Trigger current $V_D=12V$ $R_L=100\Omega$ Trigger voltage	I II III	MAX	≤ 15	mA
		IV		≤ 35	
V_{GT}			MAX	1.5	V
V_{GD}	Do not trigger voltage $T_j=125^\circ C$		MIN	0.2	V
I_H	Holding current $I_T=0.5A$		MAX	20	mA
I_L	latching current $I_G=1.2I_{GT}$	I II III	MAX	20	mA
		IV		50	
dv/dt	Critical rise rate of off state voltage $V_D=2/3V_{DRM}$ $T_j=125^\circ C$		MIN	500	V/us
$(dv/dt)_c$	Critical rise rate of commutation voltage $T_j=125^\circ C$		MIN	10	V/us

Static Parameters

Symbol	Name and testing conditions			Value	Unit
V_{TM}	On state peak voltage $I_{TM}=1.4A$	$T_j=25^\circ C$	MAX	1.50	V
V_{TO}	Threshold voltage	$T_j=125^\circ C$	MAX	0.92	V
R_d	Slope resistance	$T_j=125^\circ C$	MAX	36.8	m Ω
I_{DRM} I_{RRM}	Off state peak current	$T_j=25^\circ C$	MAX	5	μA
	Reverse peak current	$T_j=125^\circ C$		1	mA

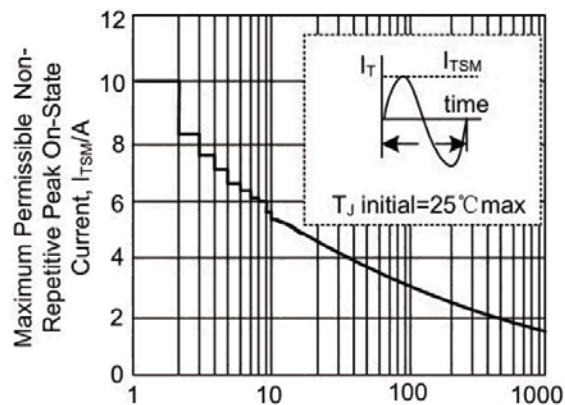
VI Curve of Triac





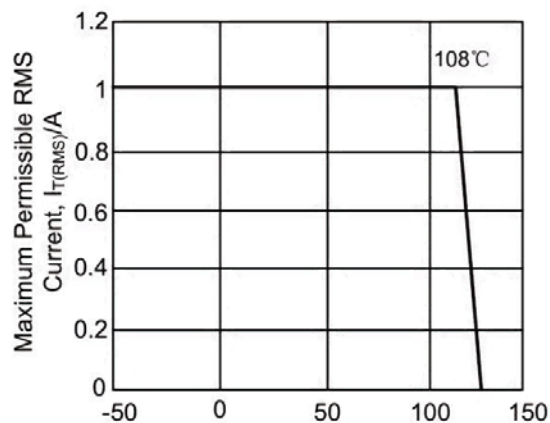
Typical Characteristics

Maximum Permissible Non-Repetitive Peak On-State Current vs. Number of Cycles, for Sinusoidal Currents



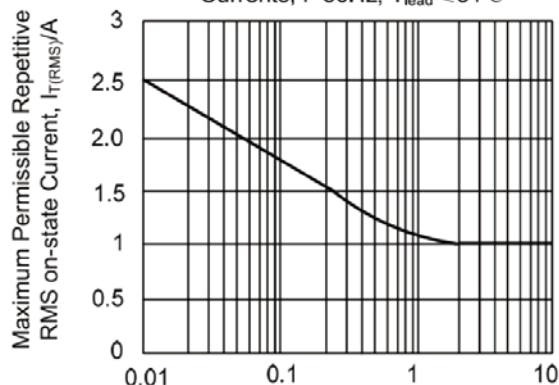
Number of Cycles at 50Hz

Maximum Permissible RMS Current $I_{T(RMS)}$ vs. Lead Temperature



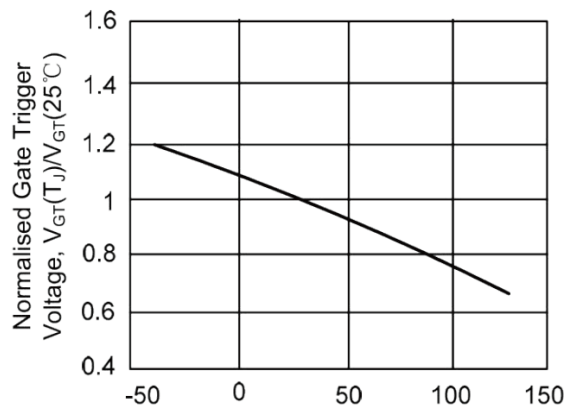
Lead Temperature, $T_{sp}/^{\circ}\text{C}$

Maximum Permissible Repetitive RMS on-state Current vs. Surge Duration, for Sinusoidal Currents, $f=50\text{Hz}$; $T_{lead} \leq 51^{\circ}\text{C}$



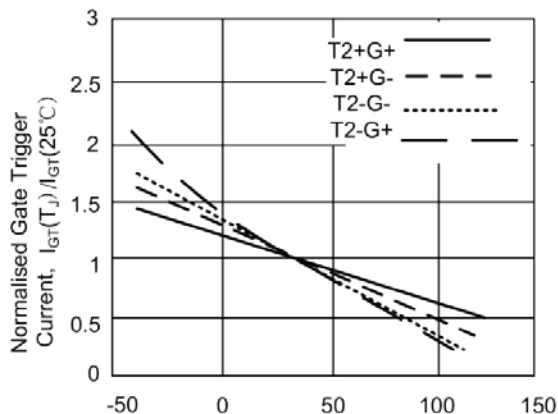
Surge Duration /s

Normalised Gate Trigger Voltage vs. Junction Temperature



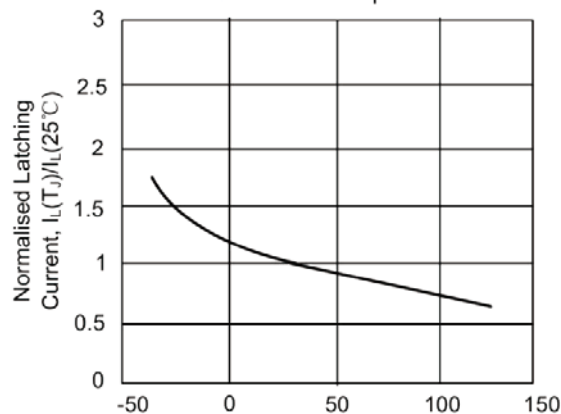
Junction Temperature, $T_J/^{\circ}\text{C}$

Normalised Gate Trigger Current vs. Junction Temperature



Junction Temperature, $T_J/^{\circ}\text{C}$

Normalised Latching Current vs. Junction Temperature

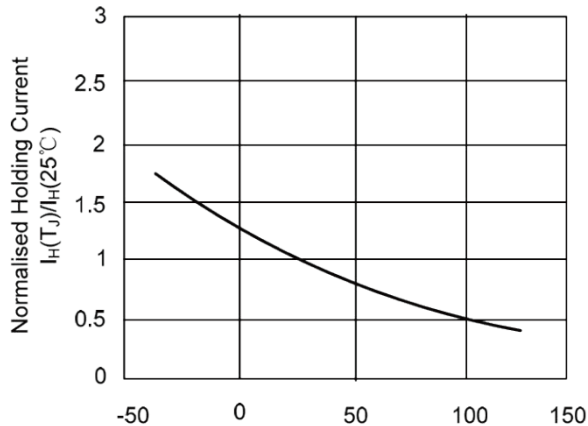


Junction Temperature, $T_J/^{\circ}\text{C}$



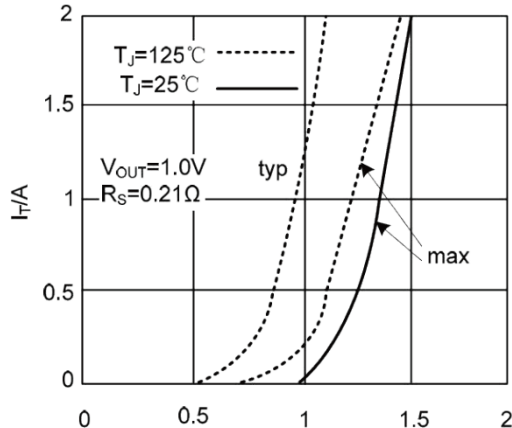
Typical Characteristics

Normalised Holding Current
vs. Junction Temperature



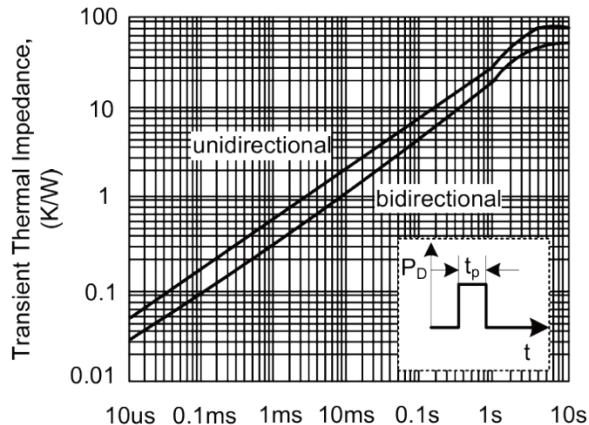
Junction Temperature, $T_J/^\circ\text{C}$

Typical and Maximum
On-State Characteristic



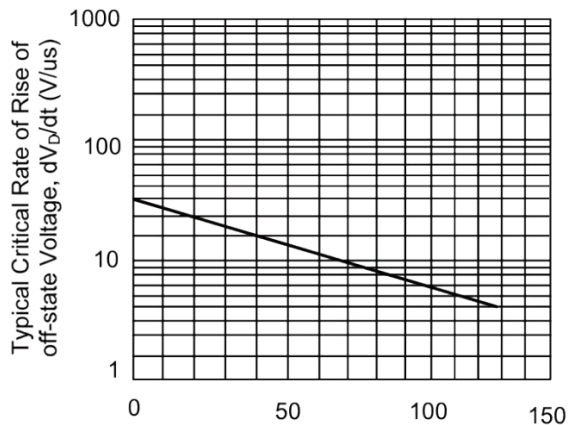
V_T/V

Transient Thermal Impedance
vs. Pulse Width



Pulse Width, t_p/S

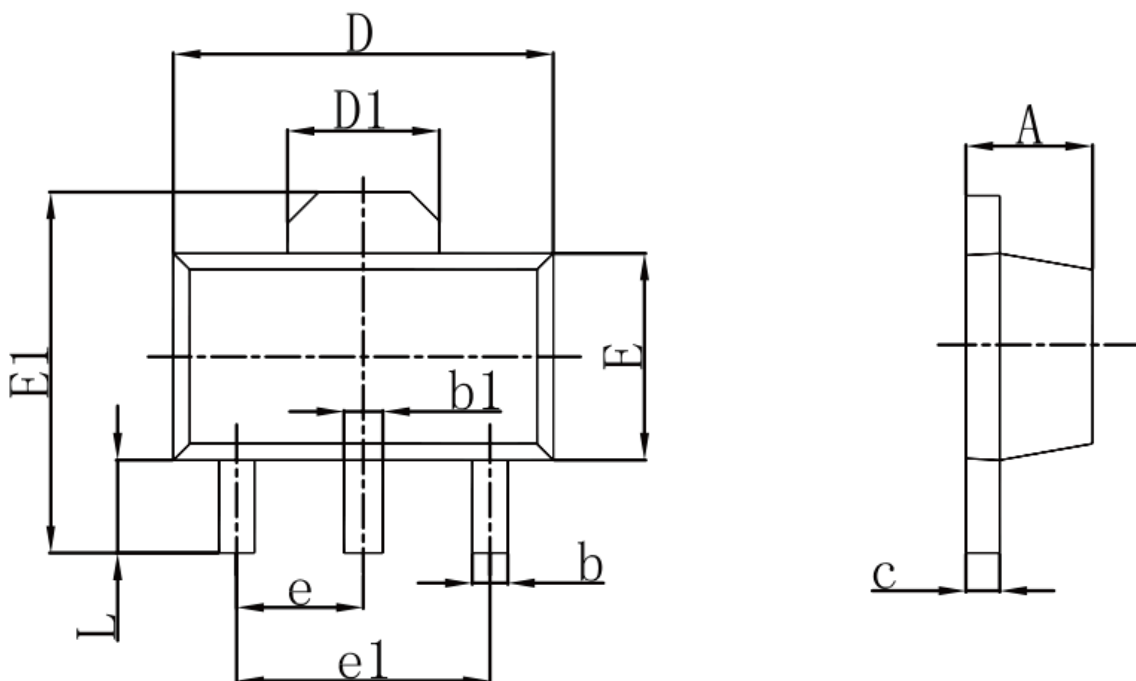
Typical Critical Rate of Rise of off-state
Voltage vs. Junction Temperature



Junction Temperature, $T_J/^\circ\text{C}$



SOT-89-3L Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047