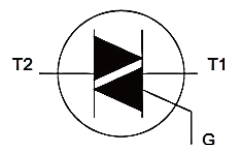


Description

Glass passivated, sensitive gate triac in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.



SOT-89-3L



Equivalent Circuit

Ordering information

Product ID	Pack	Naming rule	Marking	Qty(PCS)
BT134	SOT-89-3L	BT134 产品名称 product name	BT134	3000

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITION	RATINGS	UNIT
V _{DRM}	Repetitive Peak Off-State Voltage	T _j = 25°C	600	V
I _{T(RMS)}	RMS on-state current full sine wave; T _{mb} ≤ 107°C		4	A
I _{TSM}	Non-repetitive peak on-state current (Full sine wave T _j = 25°C prior to surge)	t = 20ms	25	A
		t = 16.7ms	27	
I ² t	I ² t For Fusing	t = 10ms	3.1	A ² s
di/dt	Repetitive rate of rise of on-state current after triggering I _{TM} = 6A; I _G = 0.2A; di _G /dt = 0.2A/μs	T2+ G+	50	A/μs
		T2+ G-	50	
		T2- G-	50	
		T2- G+	10	
V _{GM}	Peak Gate Voltage		5	V
I _{GM}	Peak Gate Current		2	A
P _{GM}	Peak Gate Power		5	W
P _{G(AV)}	Average gate Power		0.5	W
T _j	Operating junction temperature		125	°C
T _{stg}	Storage Temperature		-40 to +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The device is guaranteed to meet performance specification within 0°C~70°C operating temperature range and assured by design from -20°C ~ 85°C.

3. Although not recommended, off-state voltages up to 800V may be applied without damage, but the triac may switch to the on-state. The rate of rise of current should not exceed 3A/μs.

THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$R_{\theta JA}$	170	$^{\circ}\text{C}/\text{W}$
Junction to Case	$R_{\theta JC}$	120	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
I_{GT}	Gate trigger current	T2+ G+	$V_D=12\text{V}$, $I_T=0.1\text{A}$	2.5	10	mA
		T2+ G-		4.0	10	mA
		T2- G-		5.0	10	mA
		T2- G+		11	25	mA
I_L	Latching Current	T2+ G+	$V_D=12\text{V}$, $I_T=0.1\text{A}$	3.0	15	mA
		T2+ G-		10	20	mA
		T2- G-		2.5	15	mA
		T2- G+		4.0	20	mA
I_H	Holding current	$V_D=12\text{V}$, $I_{GT}=0.1\text{A}$		2.2	15	mA
V_T	On-State Voltage	$I_T=5\text{A}$		1.4	1.7	V
V_{GT}	Gate Trigger Voltage	$V_D=12\text{V}$, $I_T=0.1\text{A}$		0.7	1.5	V
		$V_D=400\text{V}$, $I_T=0.1\text{A}$, $T_J=125^{\circ}\text{C}$	0.25	0.40		
I_D	Off-state leakage current	$V_D=V_{DRM(max)}$, $T_J=125^{\circ}\text{C}$		0.1	0.5	mA

DYNAMIC CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
dV_D/dt	Critical Rate Of Rise Of Off-State Voltage	$V_{DM}=67\%$, $V_{DRM(max)}$, $T_J=125^{\circ}\text{C}$ Exponential waveform, Gate open circuit		50		V/ μs
t_{gt}	Gate Controlled Turn-on Time	$I_{TM}=20\text{A}$; $V_D=V_{DRM(max)}$; $I_G=0.1\text{A}$ $dI_G/dt=5\text{A}/\mu\text{s}$		2.0		μs



TYPICAL CHARACTERISTICS

Fig 1. Maximum On-State Dissipation, P_{tot} Versus Rms On-state Current, $I_{T(RMS)}$ where α =conduction angle.

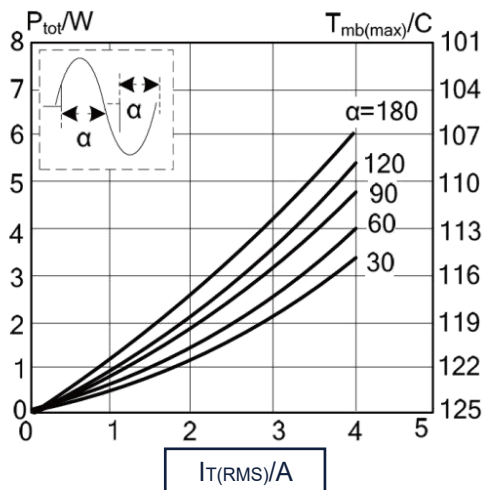


Fig 3. Maximum Permissible Non-repetitive Peak On-state Current, I_{TSM} , Versus Number Of Cycles, For Sinusoidal Currents, $f=50Hz$.

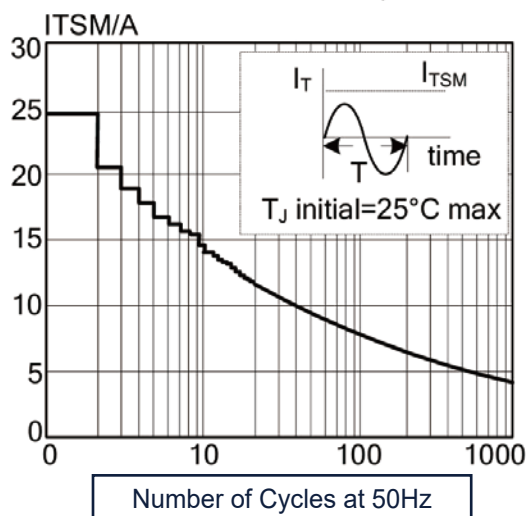


Fig 5. Maximum Permissible Repetitive Rms On-State Current, $I_{T(RMS)}$, Versus Surge Duration, For Sinusoidal Currents, $f=50Hz$, $T_{mb} \leq 107^\circ C$

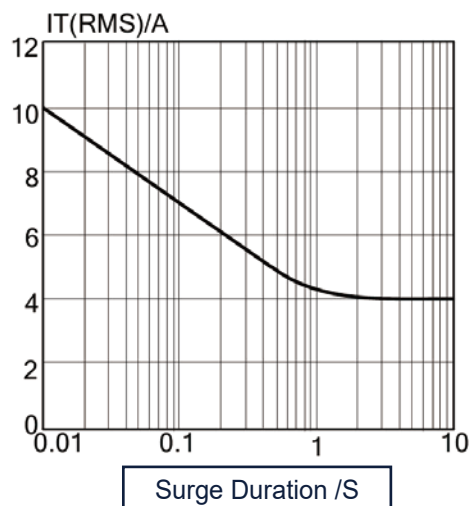


Fig 2. Maximum Permissible Non-repetitive Peak On-state Current, I_{TSM} , Versus Pulse Width t_p For Sinusoidal Currents, $t_p \leq 20ms$

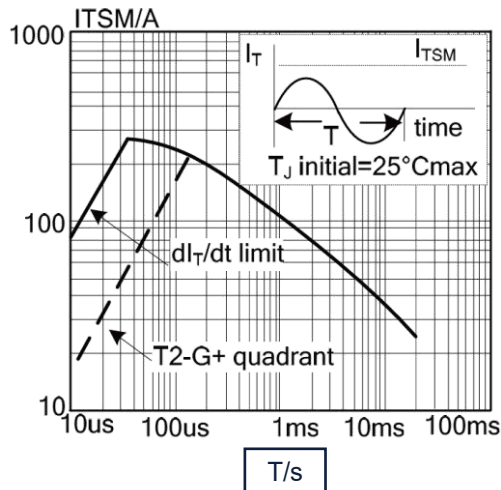


Fig 4. Maximum Permissible Rms Current, $I_{T(RMS)}$, Versus Mounting Base Temperature, T_{mb}

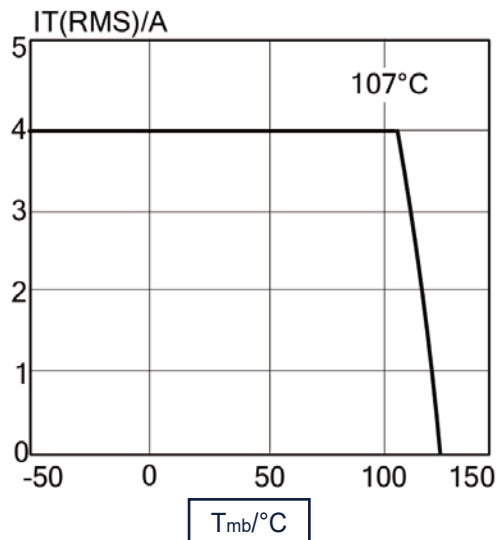
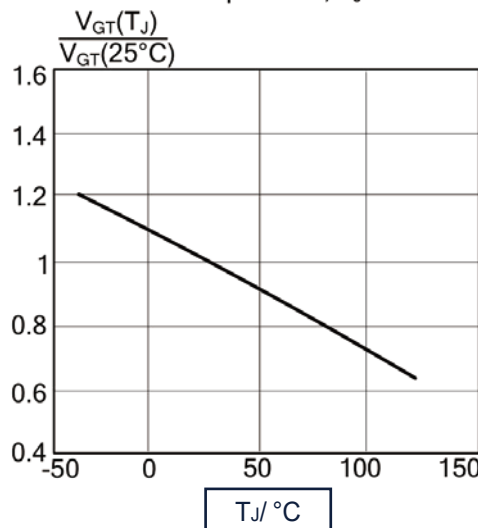


Fig 6. Normalised Gate Trigger Voltage, $V_{GT}(T_J)/V_{GT}(25^\circ C)$, Versus Junction Temperature, T_J





TYPICAL CHARACTERISTICS

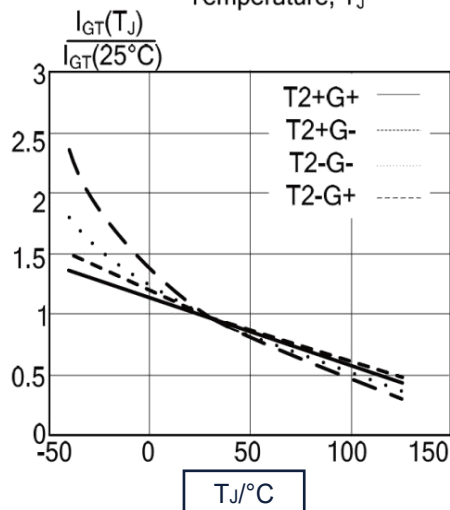
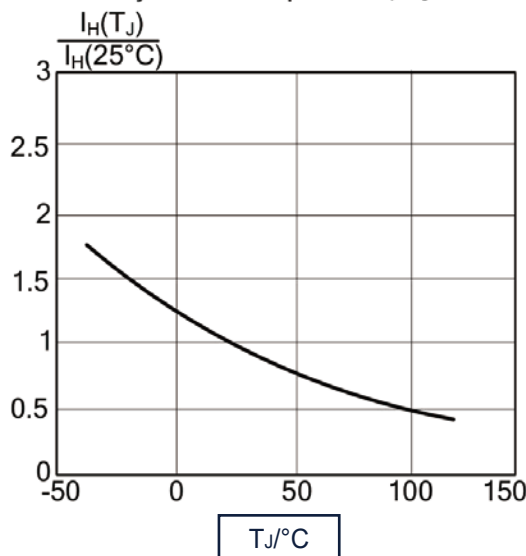
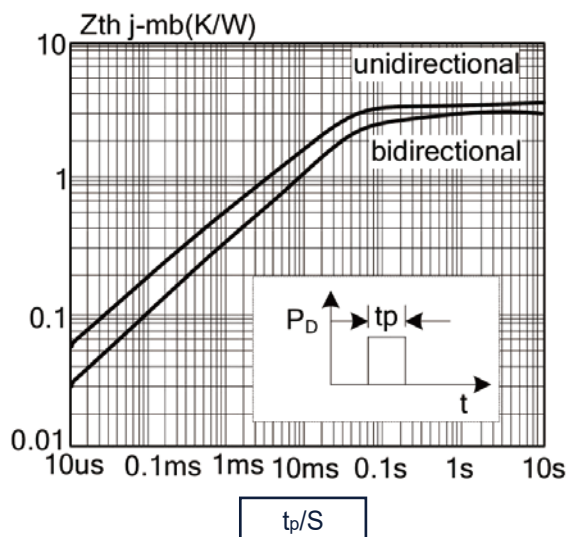
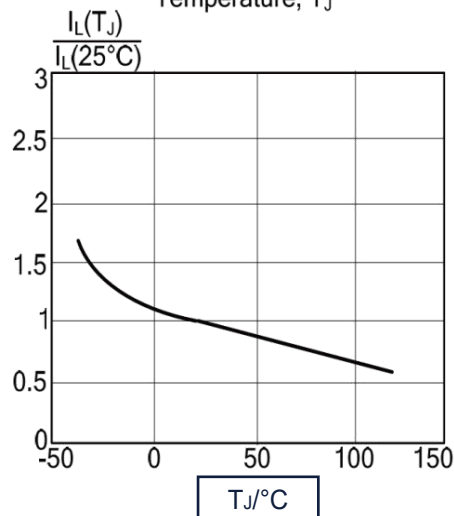
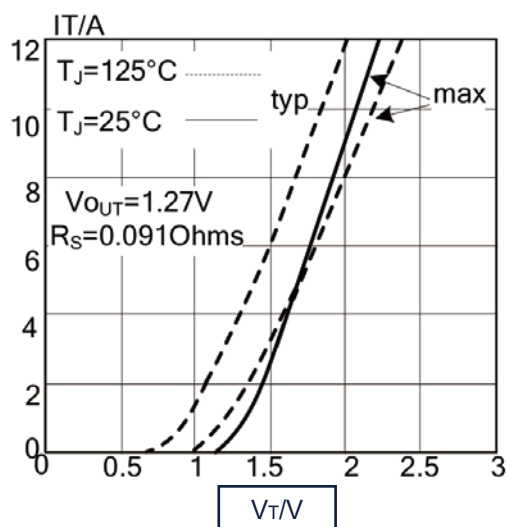
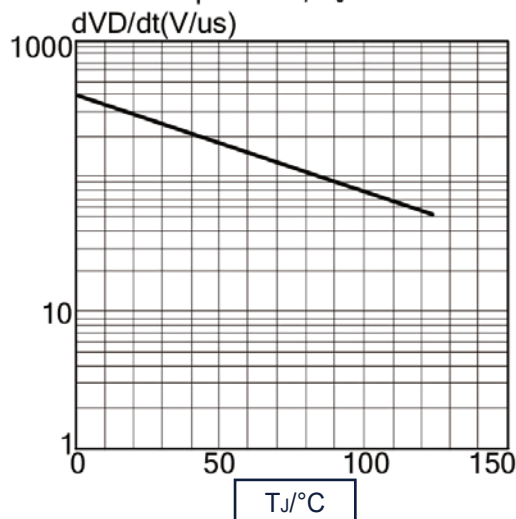
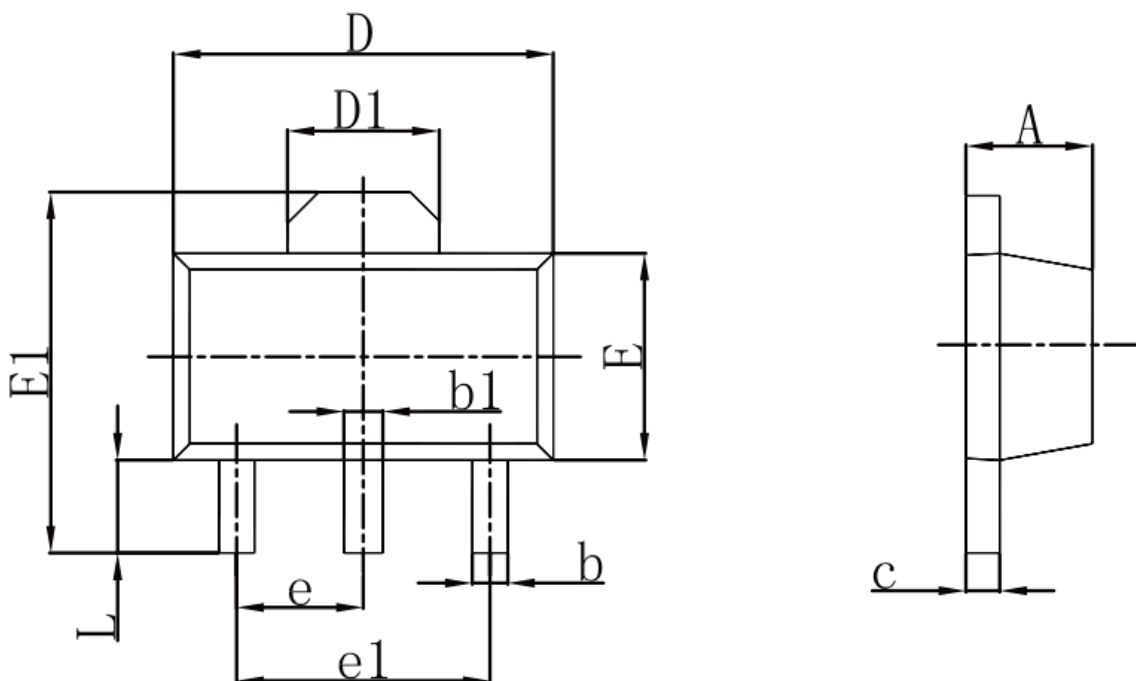
Fig 7. Normalised Gate Trigger Current, $I_{GT}(T_J)/I_{GT}(25^\circ\text{C})$, Versus Junction Temperature, T_J Fig 9. Normalised Holding Current, $I_H(T_J)/I_H(25^\circ\text{C})$, versus junction temperature, T_J Fig 11. Transient Thermal Impedance Z_{thj-mb} , Versus Pulse Width t_p Fig 8. Normalised Latching Current, $I_L(T_J)/I_L(25^\circ\text{C})$ Versus Junction Temperature, T_J 

Fig 10. Typical And Maximum On-state Characteristic

Fig 12. Typical Critical Rate Of Rise Of Off-satate Voltage, dV_D/dt Versus Junction Temperature, T_J 



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