BT131

SOT-89-3L Plastic-Encapsulate Transistors

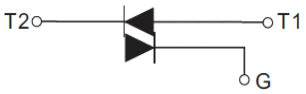
Features

- Medium current triac
- Low on state voltage drop
- High reliability and stability
- Low thermal resistance
- High commutation performances

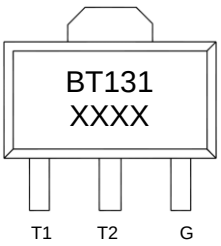
Application

- For power AC switching operations.Such as static relays,light dimmers and appliance motors speed controllers,etc

SOT-89-3L top view



Schematic diagram



Marking and pin assignment

Pb-Free RoHS Halogen-Free

Maximum Ratings(Ta=25℃ unless otherwise noted)

Symbol	Parameter		Rating	Unit
V_{DRM}/V_{RRM}	Repetitive peak off-state/reverse voltages		600	V
$I_{T(RMS)}$	RMS on-state current(full sine wave T_C=90℃)		1	A
I_{TSM}	Non repetitive surge peak on-state current		9	A
I^2t	I^2t for fusing		0.5	A^2s
di/dt	Repetitive rate of rise of on-state current after tiggering(T_j=125℃)	T2+ G+	50	A/us
		T2+ G-	50	
		T2- G-	50	
		T2- G+	10	
I_{GM}	Peak gate current		2	A
$P_{G(AV)}$	Average gate power dissipation(Tj=125℃)		0.35	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range		-40~+125	°C

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
BT131	SOT-89-3L	BT131	1,000	10,000	40,000	7"reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)

Symbol	Parameter	Condition		Min	Typ	Max	Unit
I_{GT}	Gate Trigger Current	V_D=12V, I_T=100mA	T2+ G+	--	0.4	5	mA
			T2+ G-	--	1.1	5	mA
			T2- G-	--	2.7	5	mA
			T2- G+	--	3.8	9	mA
I_L	Latching Current	V_D=12V, I_T=100mA	T2+ G+	--	0.6	5	mA
			T2+ G-	--	1.8	8	mA
			T2- G-	--	1.5	5	mA
			T2- G+	--	1.9	8	mA
I_D	Off-state leakage current	V_D = VDRM(max); T_j = 125 ˚C		--	--	0.5	mA
V_{GT}	Gate Trigger Voltage	V_D=12V, I_T=100mA		--	--	1.5	V
I_H	Holding Current	I_T=100mA		--	0.5	5	mA
dv/dt	Critical Rate of Rise of Off-State Voltage	V_D=67%V_{DRM}, Gate Open, T_J=125°C		50	--	--	V/us
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation	(dI/dt)c=0.3A/ms, T_J= 110°C		5	--	--	V/us

Typical Operating Characteristics

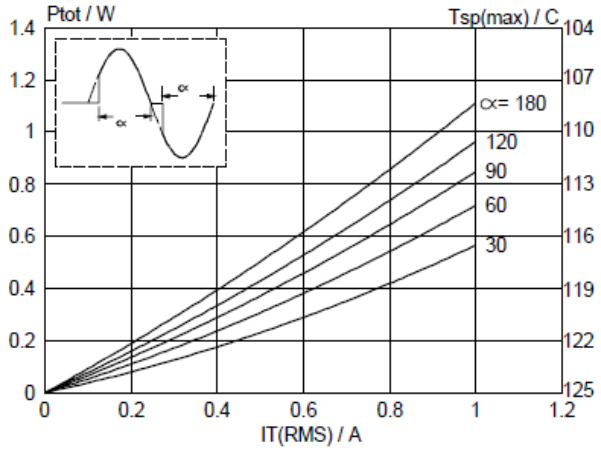


Fig.1. Maximum on-state dissipation, P_{tot}, versus rms on-state current, $I_{T(RMS)}$, where a = conduction angle.

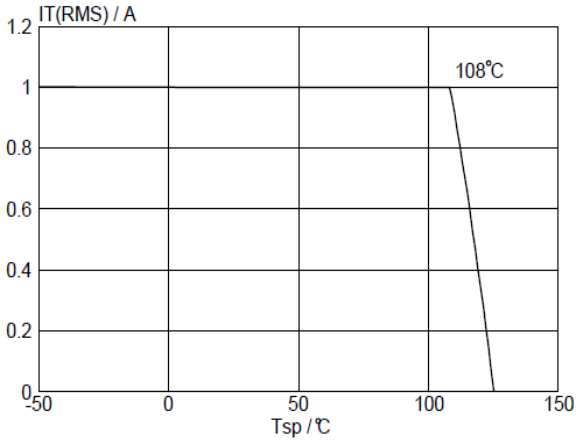


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus lead temperature T_{lead}.

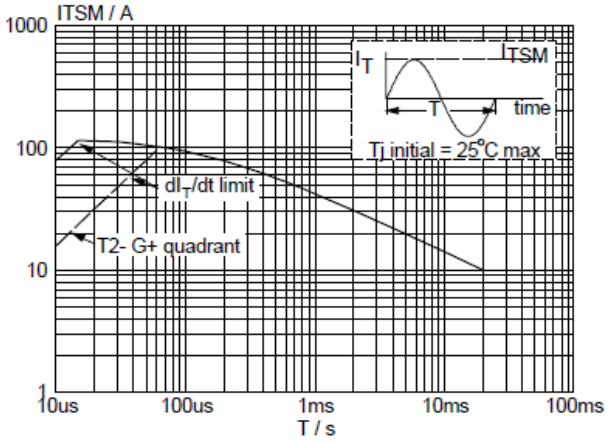


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leqslant 20ms$.

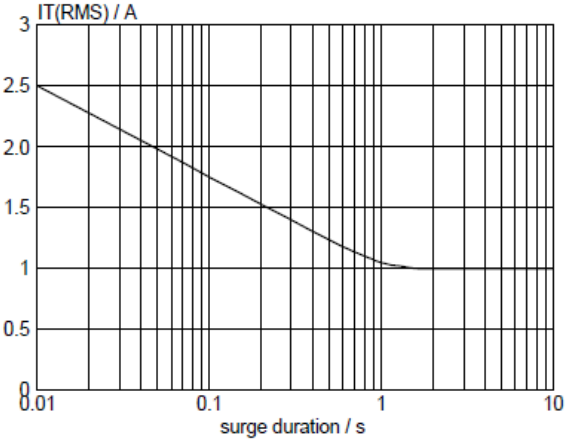


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; $T_{lead} \leqslant 108°C$.

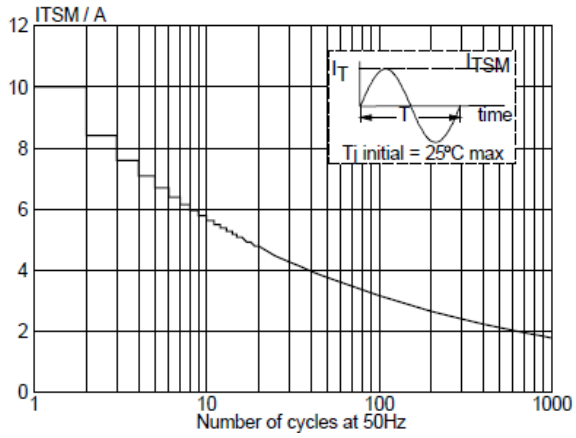


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.

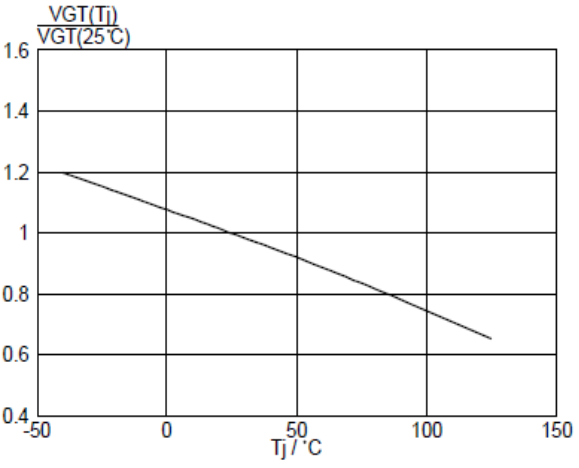
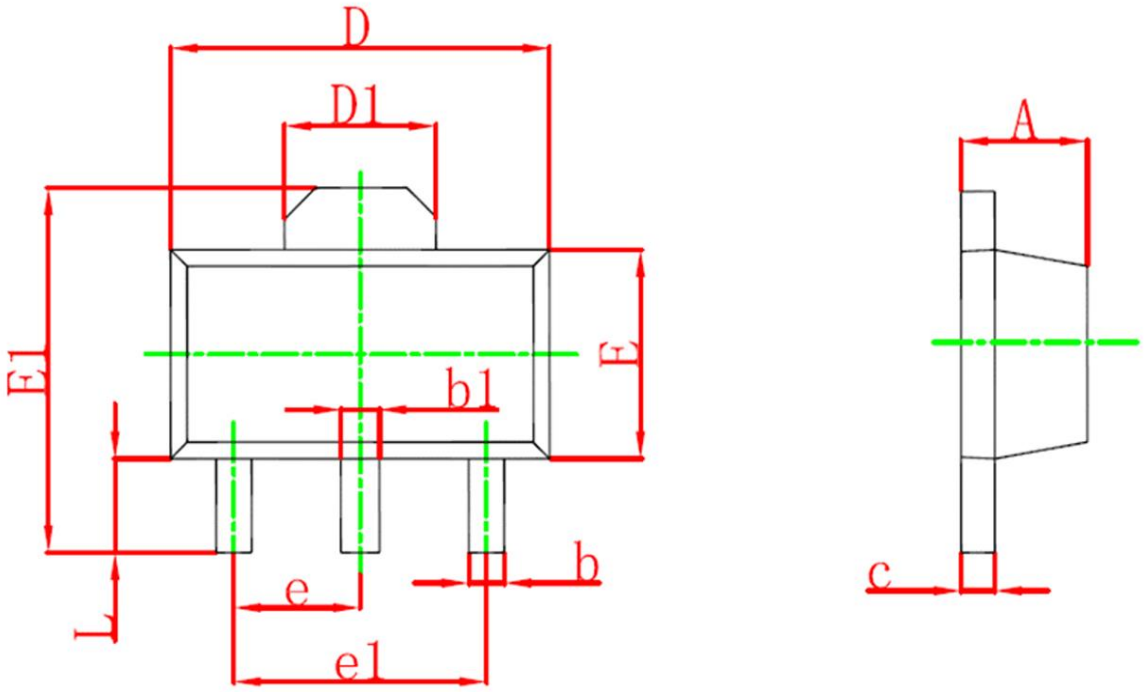


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/ V_{GT}(25°C)$, versus junction temperature T_j.

SOT-89-3L Package information



Symbol	Dimensions in Millimeters(mm)		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