

Features

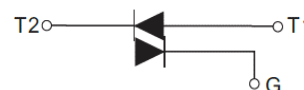
- Medium current triac
- Low on state voltage drop
- High reliability and stability
- Low thermal resistance
- High commutation performances

Application

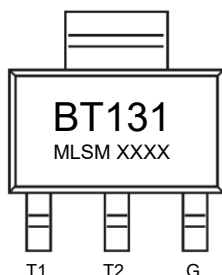
• For power AC switching operations. Such as static relays, light dimmers and appliance motors speed controllers, etc



SOT-223 top view



Schematic diagram



Marking and pin assignment



Halogen-Free

Maximum Ratings(Ta=25°C 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 $T_C=90^\circ\text{C}$)		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 triggering($T_j=125^\circ\text{C}$)	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($T_j=125^\circ\text{C}$)		0.5	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range		-40~+125	$^\circ\text{C}$

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
BT131	SOT-223	BT131	2,500	5,000	35,000	13"reel

Electrical Characteristics (T_J=25°C 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 = V _{DRM} (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

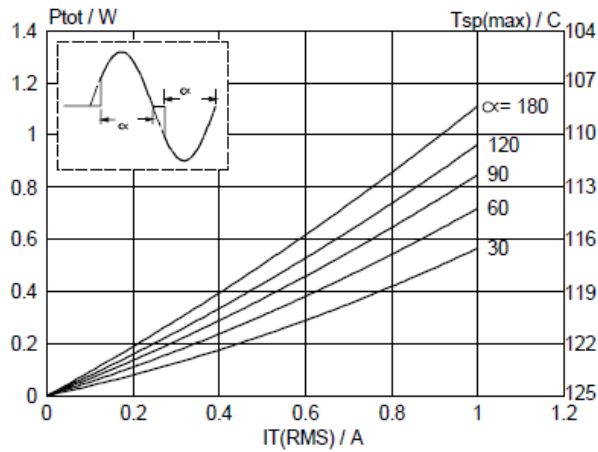


Fig.1. Maximum on-state dissipation, P_{tot} , versus rms on-state current, $I_{T(RMS)}$, where a = conduction angle.

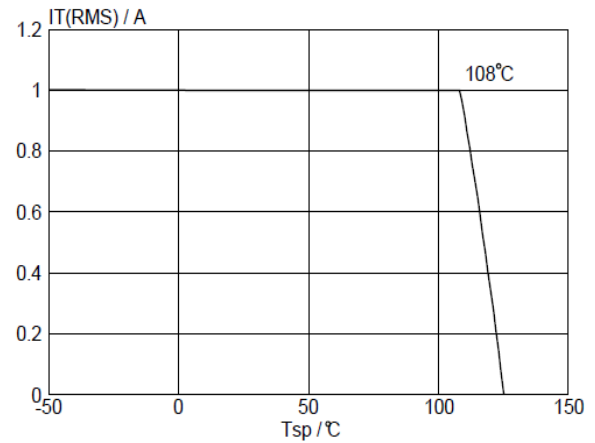


Fig.2. Maximum permissible rms current $I_{T(RMS)}$, versus lead temperature T_{lead} .

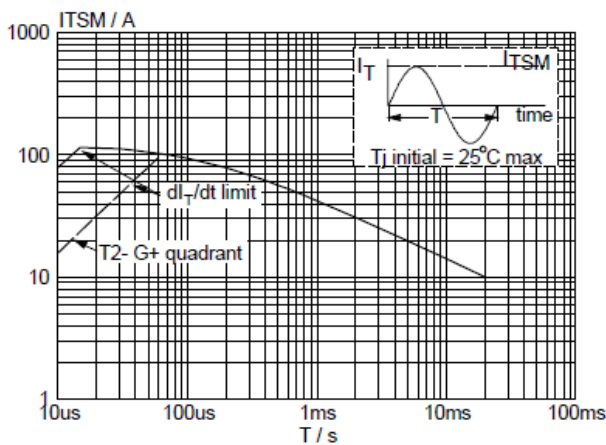


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus pulse width t_p , for sinusoidal currents, $t_p \leq 20ms$.

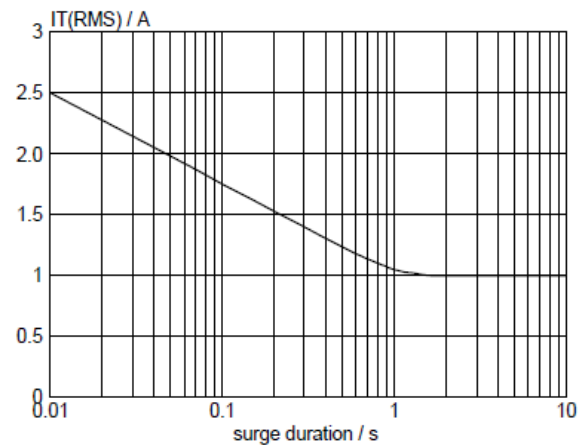


Fig.4. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, $f = 50 Hz$; $T_{lead} \leq 108^\circ C$.

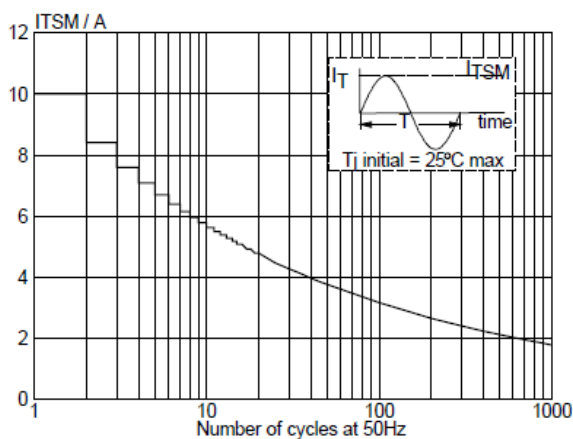


Fig.5. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50 Hz$.

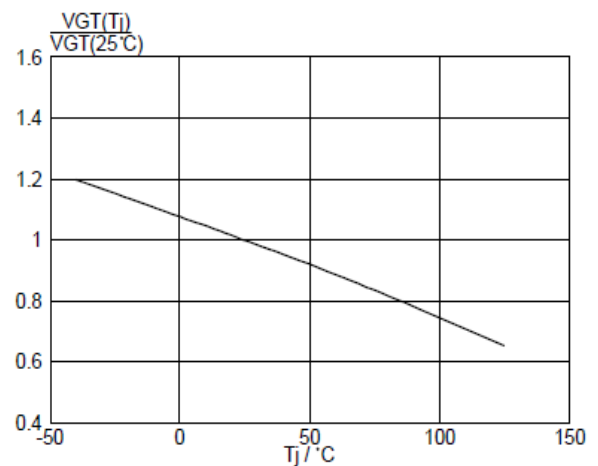
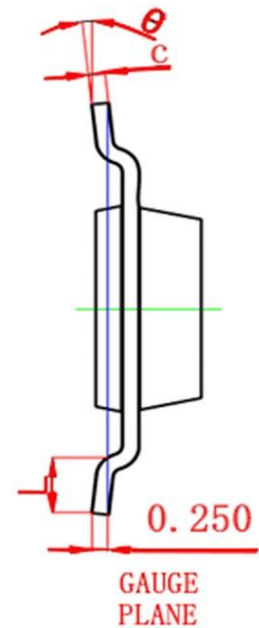
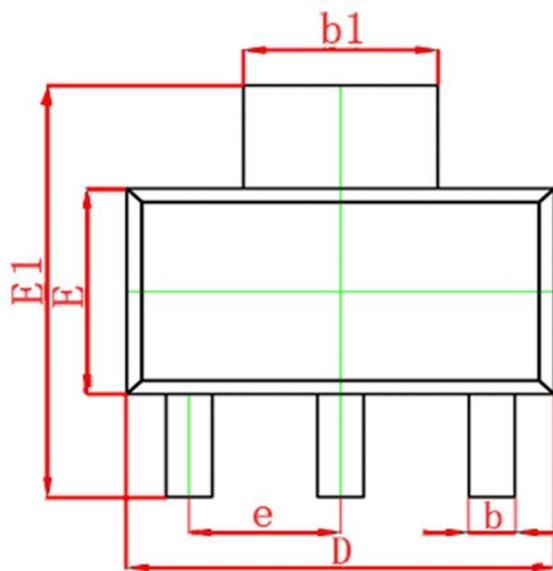


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j) / V_{GT}(25^\circ C)$, versus junction temperature T_j .

SOT-223 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	--	1.800	--	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	3.300	3.700	0.130	0.146
E1	6.700	7.300	0.264	0.287
e	2.300(BSC)		0.091(BSC)	
L	0.750	--	0.030	--
θ	0°	10°	0°	10°