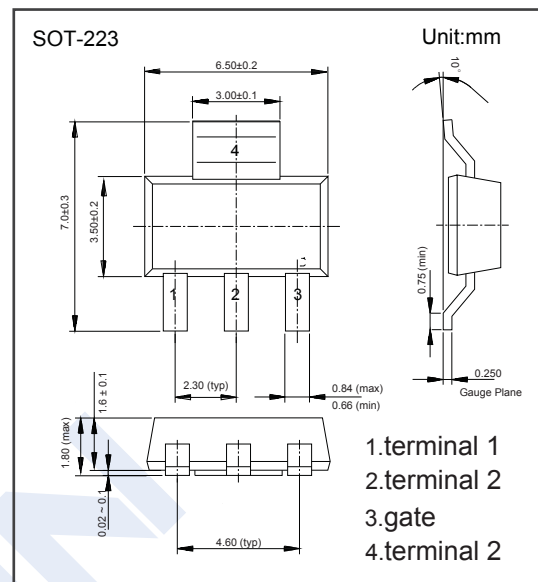
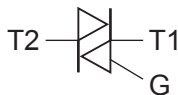


Triacs

BT131 Series

■ Features

- $V_{DRM} \leq 600$ V (BT131-600)
- $V_{DRM} \leq 800$ V (BT131-800)
- $I_{T(RMS)} \leq 1$ A
- $I_{TSM} \leq 12.5$ A



■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Repetitive Peak off-state Voltage	V_{DRM}	600 800	V
		BT131-600 ^{*1} BT131-800	
RMS on-state Current	$I_{T(RMS)}$	1	A
Non-Repetitive Peak on-state Current	I_{TSM}	12.5 13.8	A
		t=20ms t=16.7ms	
Circuit Fusing Considerations	I^2t	1.28	A ² s
Rate of Rise of on-state Current	di_T/dt	50 50 50 10	A/ μ s
		T2+ G+ T2+ G- T2- G- T2- G+	
Peak Gate Current	I_{GM}	2	A
Peak Gate Power	P_{GM}	5	W
Average Gate Power	$P_{G(AV)}$	0.1	W
Thermal Resistance Junction to Ambient ^{*2}	$R_{th j-a}$	150	$^{\circ}C/W$
Junction Temperature	T_J	125	$^{\circ}C$
Storage Temperature Range	T_{stg}	-40 ~ 150	$^{\circ}C$

*1: 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 3 A/ μ s.

*2: Mounted on a printed-circuit board

Triacs

BT131 Series

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

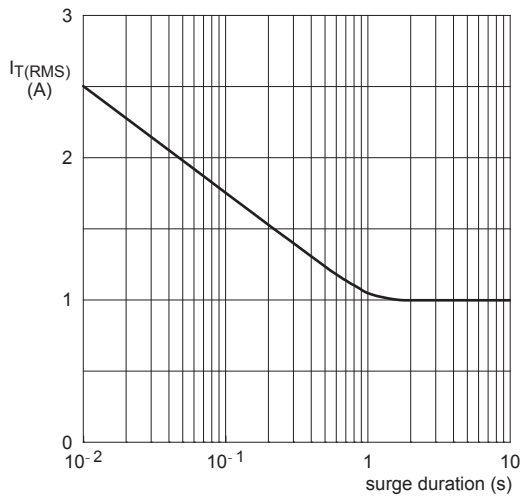
Parameter	Symbol	Test Conditions	Min	Typ.	Max	Unit
Repetitive Peak off-state Voltage	BT131-600	$I_{DRM}=50\mu\text{A}$	600			V
	BT131-800		800			
Gate Trigger Current	T2+ G+	$V_D = 12\text{ V}; I_T = 100\text{ mA};$ see Figure 4		0.4	3	mA
	T2+ G-			1.3	3	
	T2- G-			1.4	3	
	T2- G+			3.8	7	
Latching Current	T2+ G+	$V_D = 12\text{ V}; I_T = 100\text{ mA};$ see Figure 6		1.2	5	mA
	T2+ G-			4	8	
	T2- G-			1	5	
	T2- G+			2.5	8	
Holding Current	I_H	$V_D = 12\text{ V}; I_T = 100\text{ mA};$ see Figure 7		1.3	5	
On-state Voltage	V_T	$I_T = 1.4\text{ A};$ see Figure 5		1.2	1.5	
Gate Trigger Voltage	V_{GT}	$I_T = 10\text{ mA};$ gate open circuit, see Figure 3; $V_D = 12\text{ V}; I_{GT} = 100\text{ mA}$		0.7	1.5	V
		$I_T = 10\text{ mA};$ gate open circuit, see Figure 3; $V_D = 400\text{ V}; I_{GT} = 100\text{ mA}; T_j = 125^\circ\text{C}$	0.2	0.3		
Off-state Current	I_D	$V_D = V_{DRM(max)}; T_j = 125^\circ\text{C}$		0.1	0.5	mA
Rate of Rise of off-state Voltage	dV_D/dt	$V_{DM}=67\% V_{DRM(max)}; T_j=125^\circ\text{C};$ Exponential waveform; $R_{GK}=1\text{ k}\Omega;$ see Figure 8	10	20		$\text{V}/\mu\text{s}$
Rate of Change of Commutating Current	dV_{COM}/dt	$V_{DM} = 400\text{ V}; T_j = 125^\circ\text{C}; dI_{COM}/dt = 0.5\text{ A/ms}$	2			
Gate Controlled turn-on time	t_{gt}	$I_{TM}=1.5\text{ A}; V_D=V_{DRM(max)};$ $I_G=100\text{ mA}; dI_G/dt=5\text{ A}/\mu\text{s}$		2		μs

■ Marking

Marking	BT131 K****
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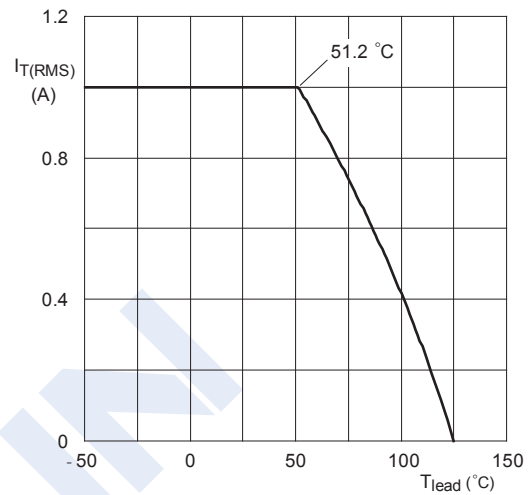
Triacs BT131 Series

■ Typical Characteristics



$f = 50 \text{ Hz}; T_{lead} \leq 51.2$

Fig 1. RMS on-state current as a function of surge duration, for sinusoidal currents; maximum values



$T_{lead} = 51.2 \text{ }^{\circ}C$

Fig 2. RMS on-state current as a function of lead temperature; maximum values

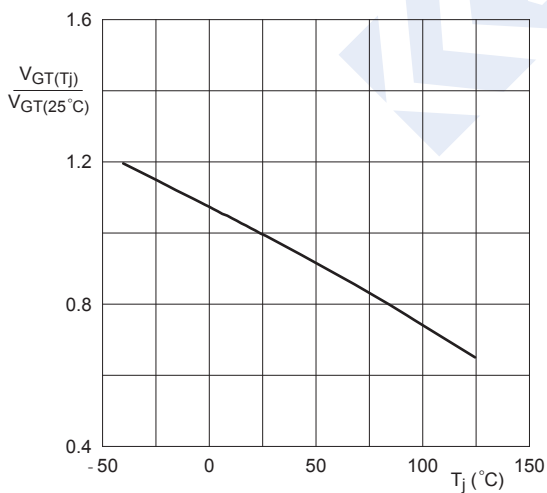
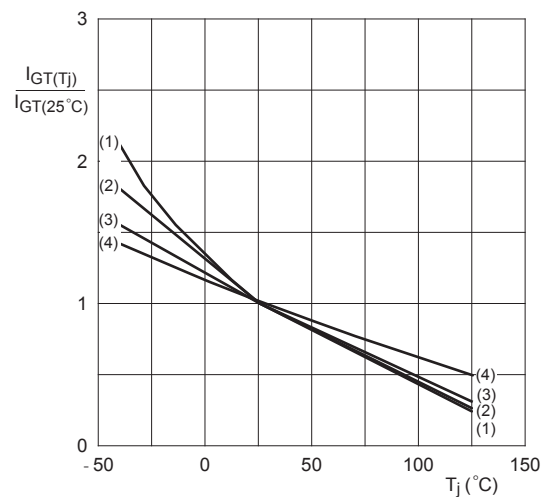


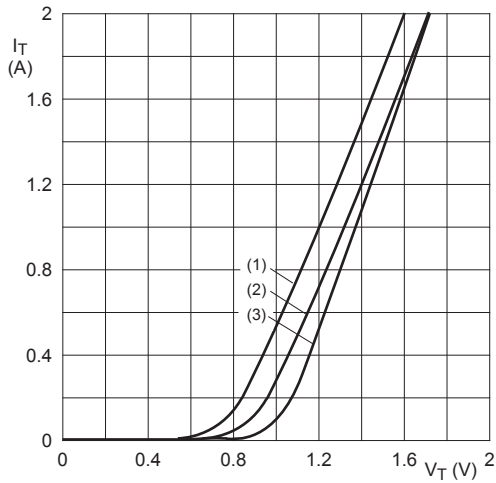
Fig 3. Normalized gate trigger voltage as a function of junction temperature



- (1) T2- G+
- (2) T2- G-
- (3) T2+ G-
- (4) T2+ G+

Fig 4. Normalized gate trigger current as a function of junction temperature

Triacs BT131 Series



$V_o = 0.92\text{ V}$
 $R_s = 0.4\ \Omega$

- (1) $T_j = 125^\circ\text{C}$; typical values
- (2) $T_j = 125^\circ\text{C}$; maximum values
- (3) $T_j = 25^\circ\text{C}$; maximum values

Fig 5. On-state current characteristics

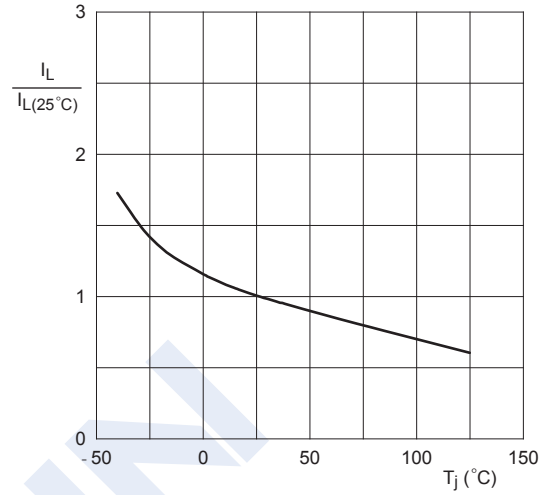


Fig 6. Normalized latching current as a function of junction temperature

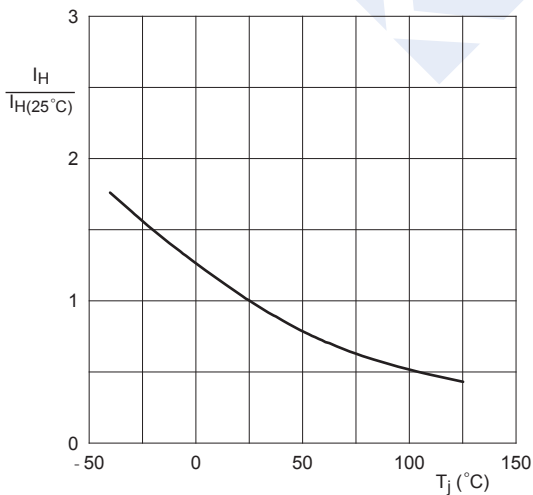


Fig 7. Normalized holding current as a function of junction temperature

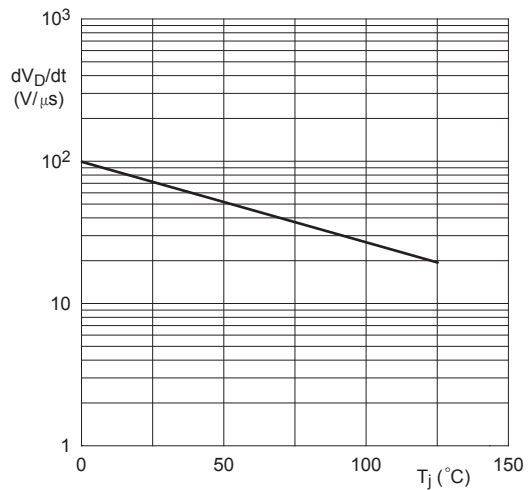


Fig 8. Rate of rise of off-state voltage as a function of junction temperature; minimum values