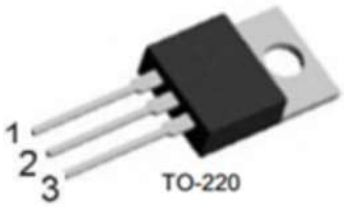
Features:

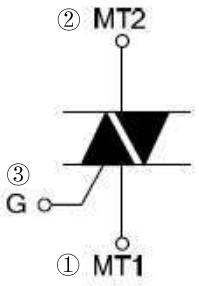
Triacs is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly sensitive triggering levels and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.



Applications:

Domestic lighting ,heating and motor speed controllers.

Symbol



Ordering Information

Part No.	Package	Packing
BT137-600E	TO-220	50pcs / Tube
BT137-800E	TO-220	50pcs / Tube

ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS		UNIT
Repetitive Peak Off State Voltage BT137-600E	V_{DRM}	600	-600	V
Repetitive Peak Off State Voltage BT137-800E	V_{DRM}	800*	-800	V
RMS On-state Current (Full sine wave; Tmb≤107°C)	$I_{T(RMS)}$	8		A
Non-Repetitive Peak. On-State Current (Full sine wave; Tj=25°C prior to surge) t = 20 ms	I_{TSM}	65		A
Non-Repetitive Peak. On-State Current (Full sine wave; Tj=25°C prior to surge) t=16.7ms	I_{TSM}	71		A
I^2t For Fusing t=10ms	I^2t	21		A^2s
Rate of Rise of On-state Current I_{TM}=6A;I_G=0.2A,dI_G/dt=0.2A/μs T2+G+	dI_T/dt	50		A/μs
Rate of Rise of On-state Current I_{TM}=6A;I_G=0.2A,dI_G/dt=0.2A/μs T2+G-	dI_T/dt	50		A/μs
Rate of Rise of On-state Current I_{TM}=6A;I_G=0.2A,dI_G/dt=0.2A/μs T2-G-	dI_T/dt	50		A/μs
Rate of Rise of On-state Current I_{TM}=6A;I_G=0.2A,dI_G/dt=0.2A/μs T2-G+	dI_T/dt	10		A/μs
Peak Gate Voltage	V_{GM}	5		V
Peak Gate Current	I_{GM}	2		A
Peak Gate Power	P_{GM}	5		W
Average Gate Power (Over any 20ms period)	$P_{G(AV)}$	0.5		W
Operating Junction Temperature	Tj	125		°C
Storage Temperature	Tstg	-40~150		°C

*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 6A/μs.

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Thermal Resistance Junction to Mounting Base Full cycle Half cycle	Rth j-mb			2.0 2.4	K/W
Thermal Resistance Junction to Ambient In free air	Rth j-a		60		K/W

ELECTRICAL CHARACTERISTICS (T_J = 25°C, unless otherwise stated)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS						
Gate Trigger Current	I_{GT}	V_D=12V, I_T=0.1A T2+G+ T2+G- T2-G- T2-G+		 2.2 5.5 5.2 32	 10 10 10 35	mA
Latching Current	I_L	V_D=12V, I_T=0.1A T2+G+ T2+G- T2-G- T2-G+		 5.8 13 7 16	 25 35 25 35	mA
Holding Current	I_H	V_D=12V, I_T=0.1A		5	20	mA
Gate Trigger Voltage	V_{GT}	V_D=12V, I_T=0.1A; Tj=25°C		0.7	1.0	V
		V_D=400V, I_T=0.1A; Tj=125°C	0.25	0.4		V
On-State Voltage	V_T	I_T=10A		1.3	1.65	V
Off-state Leakage Current	I_D	V_D=600V, Tj=125°C		0.1	0.5	mA
DYNAMIC CHARACTERISTICS						
Critical Rate of Rise of off-state Voltage	dV_D/dt	V_{DM}=67% $V_{DRM(max)}$, Tj=125°C Exponential waveform,Gate open circuit	100	250		V/μs
Gate Controlled Turn-on Time	tgt	I_{TM}=12A,V_D=V_{DRM},I_G=0.1A dI_G/dt=5A/μs		2		μs

TYPICAL CHARACTERISTICS

Figure 1.Maximum on -state Dissipation.Ptot vs RMS On-state Current,$I_{T(RMS)}$,Where α =conduction Angle.

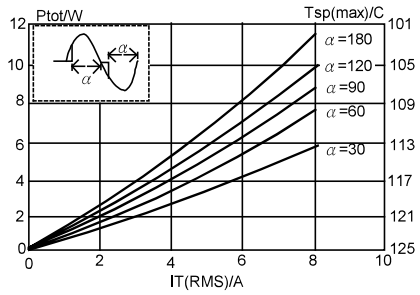


Figure 4.Maximum Permissible RMS Current $I_{T(RMS)}$ vs mounting baseTemperature T_{mb}

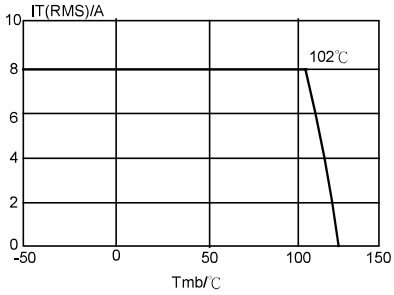


Figure 2. Maximum Permissible Non-repetitive Peak On-state Current I_{TSM},vs Pulse Width t_p,for Sinusoidal Currents,t_p≒20ms

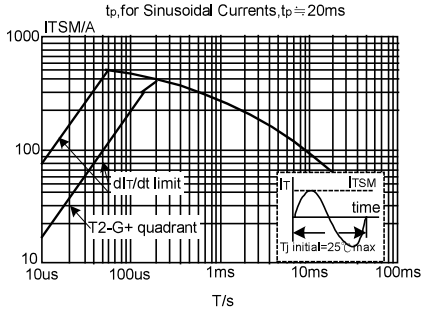


Figure 5.Maximum Permissible Repetitive RMS on-state Current $I_{T(RMS)}$,vs Surge Duration,for Sinusoidal Currents,f=50Hz;Tmb≒102℃

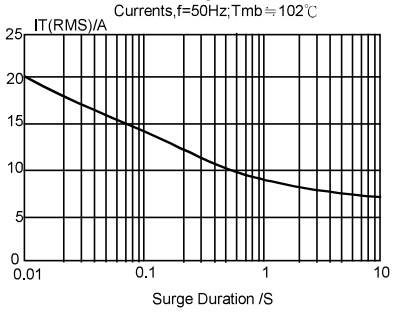


Figure 3 .Maximum Permissible Non-Repetitive peak on-state Current I_{TSM},vs Number of Cycles, for Sinusoidal Currents,f=50Hz

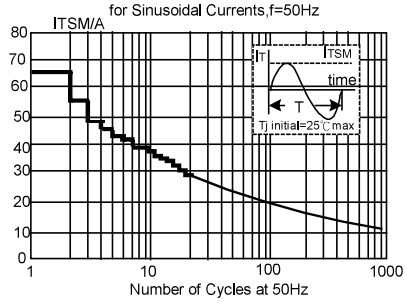
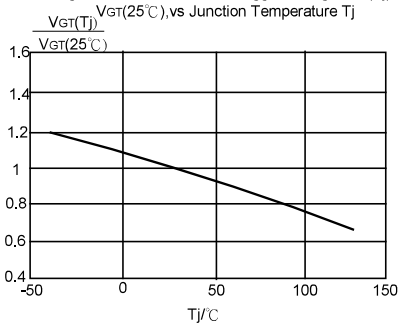


Figure 6.Normalised Gate Trigger Voltage $V_{GT}(Tj)$/ $V_{GT}(25℃)$,vs Junction Temperature Tj



TYPICAL CHARACTERISTICS

Figure 7.Normalised Gate Trigger Current
$I_{GT}(Tj)/I_{GT}(25℃)$,vs Junction Temperature Tj

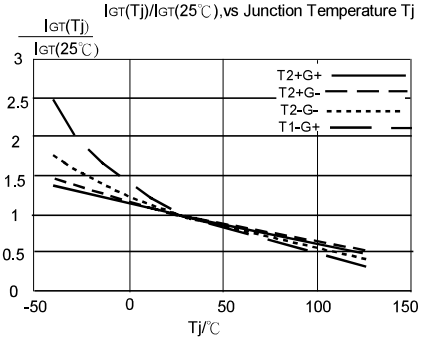


Figure 8.Normalised Latching Current
$I_L(Tj)/I_L(25℃)$,vs Junction Temperature Tj

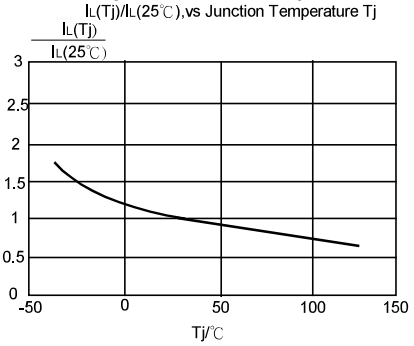


Figure 9.Normalised Holding Current
$I_H(Tj)/I_H(25℃)$,vs Junction Temperature Tj

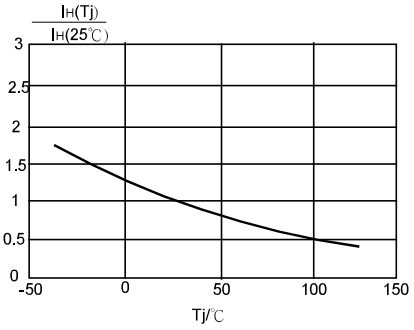


Figure 10.Typical and Maximum
On-state Characteristic

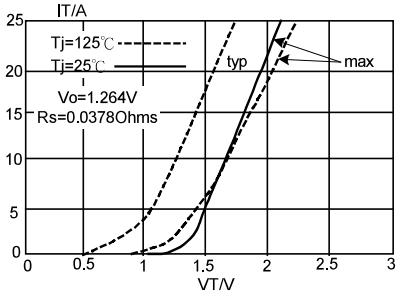


Figure 11.Transient Thermal Impedance
Zth j-mb,vs Pulse Width tp

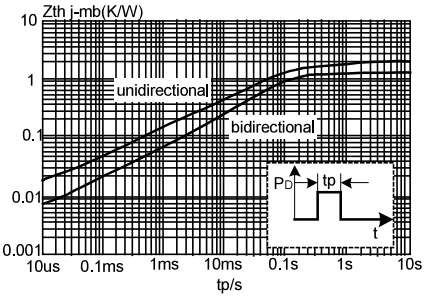
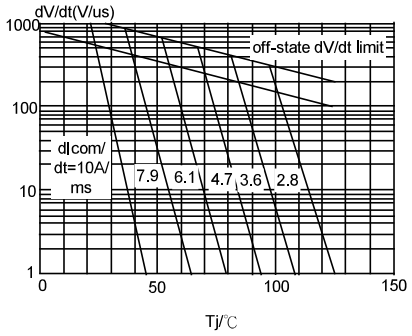
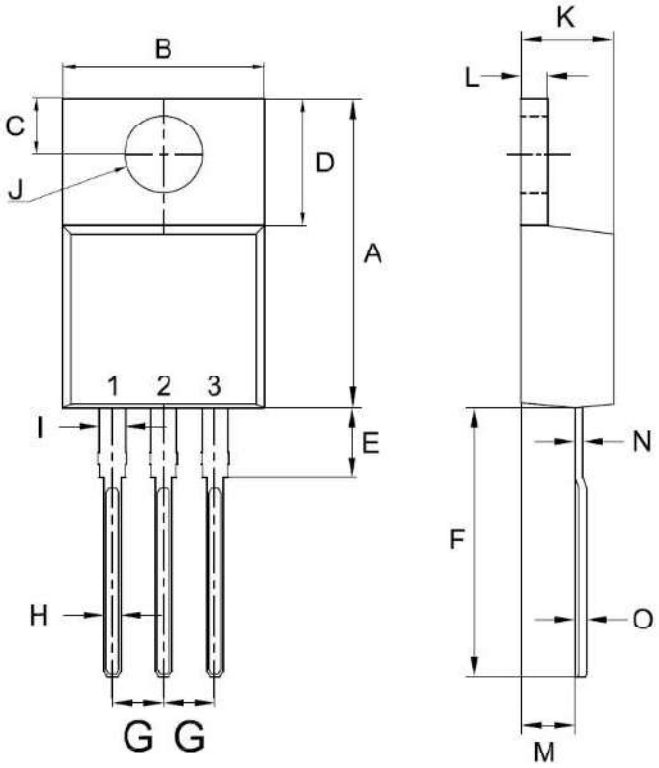


Figure 12.Typical commutation dV/dt vs junction temperature,parameter commutation dI_T/dt.The triac should commutate when the dV/dt is below the value on the appropriate curve for pre-commutation dI_T/dt



TO-220 Mechanical Drawing



TO-220AB Unit:mm		
DIM	MIN	MAX
A	14.80	15.80
B	9.57	10.57
C	2.54	2.94
D	5.80	6.80
E	2.95	3.95
F	12.70	13.40
G	2.34	2.74
H	0.51	1.11
I	0.97	1.57
J	3.54ϕ	4.14ϕ
K	4.27	4.87
L	1.07	1.47
M	2.65	3.05
N	0.30	0.46
O	0.48	0.64