Kingtronics®

BT134-600E

SENSITIVE GATE TRIAC

Blocking voltage - 600 Volts **On-state RMS current -** 4.0 Ampere

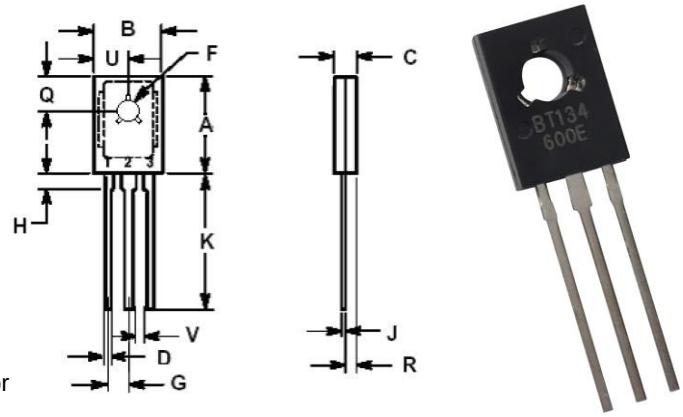
FEATURES

◆Ultra low gate trigger current
◆Low cost package

APPLICATIONS

◆Motor control
◆Industrial and domestic lighting
◆Heating
◆Static switching

SOT-126

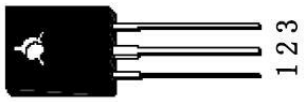


DESCRIPTION

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

DIM	Inches			Milimeters		
	Min	Type	Max	Min	Type	Max
A	0.419	-	0.429	10.650	-	10.890
B	0.284	-	0.312	7.220	-	7.920
C	0.091	0.100	0.109	2.300	2.540	2.760
K	0.520	-	0.598	13.200	-	15.200
D	0.025	0.029	0.031	0.640	0.730	0.800
J	0.011	-	0.020	0.280	-	0.520
G	0.087	0.091	0.094	2.200	2.300	2.400
V	0.040	-	-	1.020	-	-
F	0.115	0.122	0.130	2.930	3.100	3.300
U	0.142	-	0.157	3.600	-	4.000
Q	0.151	-	0.163	3.830	-	4.130
H	0.071	0.102	0.114	1.800	2.600	2.900
R	0.045	-	0.065	1.150	-	1.650

PINNING INFORMATION

PIN	Description	Simplified outline	Symbol
1	main terminal 1(T1)	 TO-126	
2	main terminal 2(T2)		
3	Gate(G)		
tab	main terminal		

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state voltages	600	V
$I_{T(RMS)}$	RMS on-state current	4	A
I_{TSM}	Non-repetitive peak on-state current	10	A

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Thermal Resistance,Junction to Case	in free air	-	-	3.5	°C /W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	in free air	-	-	75	°C /W
T_L	Maximum Lead Temperature for SolderingPurposes for 10 Seconds	in free air	-	-	260	°C

SENSITIVE GATE TRIAC

Blocking voltage - 600 Volts **On-state RMS current -** 4.0 Ampere

LIMITING VALUE

Limiting values in accordance with the Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-statevoltages		-	600	V
$I_{T(RMS)}$	RMS on-state current	Full Cycle Sine Wave 50 to 60 Hz (TC = 85°C)	-	4	A
I_{TSM}	Non-repetitive peak on -state current	One Full Cycle, Sine Wave 60 Hz (TC = 110°C)	-	40	A
I^2t	I^2t for fusing	t = 8.3 ms	-	3.7	A^2s
V_{GM}	Peak gate voltage	Pulse Width ≤ 1.0us, TC = 85°C	-	5	V
P_{GM}	Peak gate power	Pulse Width ≤ 1.0us, TC = 85°C	-	10	W
$P_{G(AV)}$	Average gate power	Pulse Width ≤ 1.0us, TC = 85°C	-	0.5	W
T_{stg}	Storage temperature		-40	150	°C
T_j	Operating junction temperature		-40	110	°C

CHARACTERISTICS

T_J = 25℃ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	VD = 12 V; IT = 0.1A T2+ G+	-	3	10	mA
		T2+ G-	-	3	10	mA
		T2- G-	-	3	10	mA
		T2- G+	-	8	25	mA
I_L	Latching current	V_D = 12 V; I_{GT} = 0.1A				
		T2+ G+	-	1.5	15	mA
		T2+ G-	-	5	20	mA
		T2- G-	-	1.0	15	mA
		T2- G+	-	3.0	20	mA
I_H	Holding current	Main Terminal Voltage = 12 Vdc, Gate Open, Initiating Current ≤1 Adc TJ = 25°C	-	-	15	mA
		TJ =-40°C	-	-	30	
V_{TM}	On-state voltage	I_{TM} = ±6 A Peak	-	1.4	2	V
V_{GT}	Gate trigger voltage (Continuous dc)	Main Terminal Voltage = 12 Vdc, R_L= 100 Ohms, T_J = –40°C All Quadrants	-	1.4	2.5	V
V_{GD}	Gate Non–Trigger Voltage	Main Terminal Voltage = 12 Vdc, R_L = 100 Ohms, T_J = 110°C All Quadrants	0.2	-	-	V
Dynamic Characteristics						
dv/dt(c)	Critical rate of rise of off-state voltage	V_{DRM}, T_J = 85°C, Gate Open, I_{TM} =5.7 A, Exponential Waveform, Commutating di/dt = 2.0 A/ms	-	5	-	V/μs
tgt	Gate controlled turn-ontime	I_{TM} = 14 Adc, I_{GT} = 100 mAdc	-	1.5	-	μs

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RATINGS AND CHARACTERISTIC CURVES BT134-600E

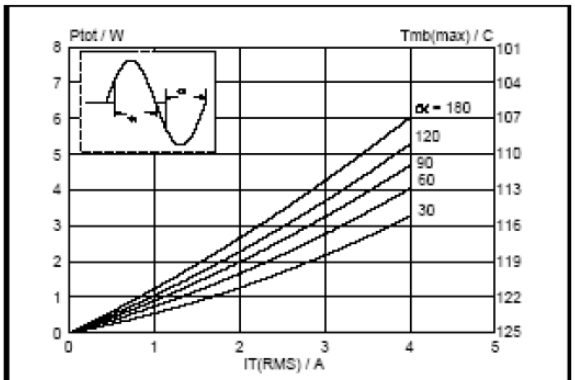

Fig.1. Maximum on-state dissipation, P_{tot}, versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

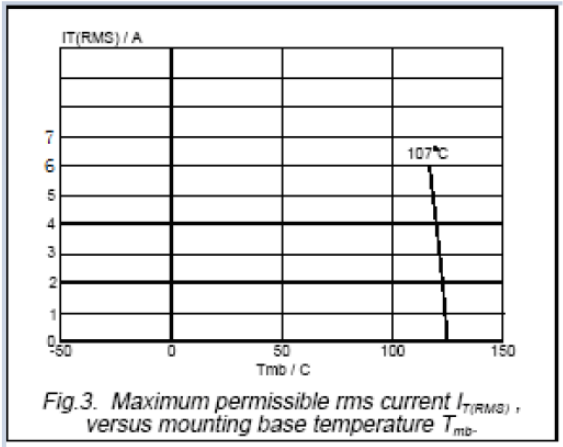

Fig.3. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

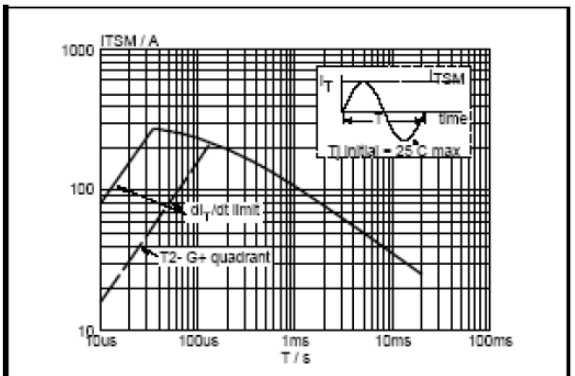

Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leq 20ms$.

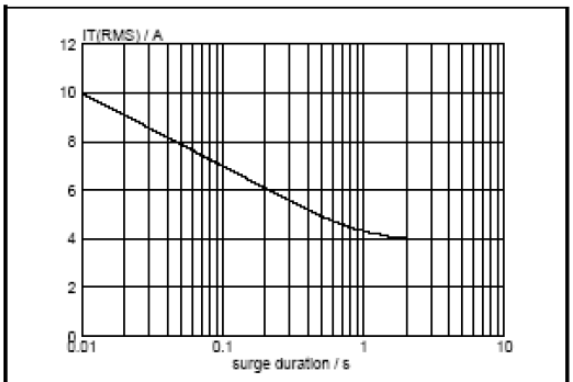

Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; $T_{mb} \leq 107°C$.

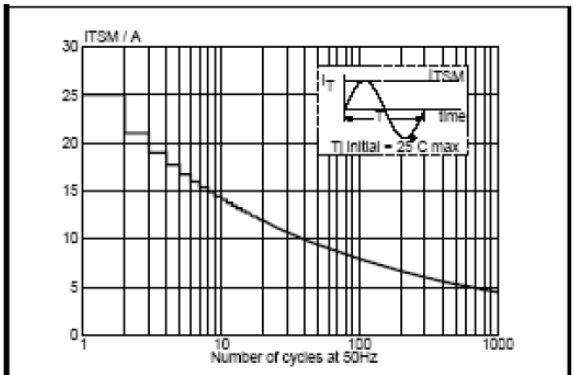

Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.

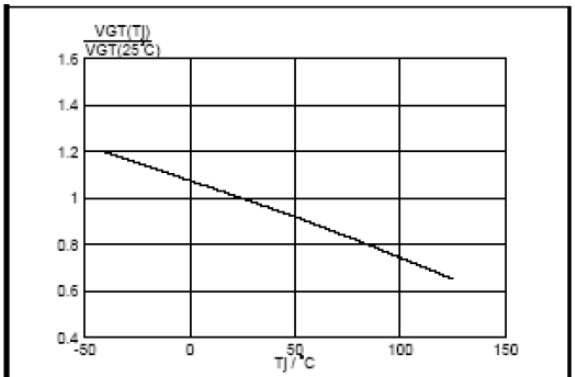

Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/ V_{GT}(25°C)$, versus junction temperature T_j.

Note: Specifications are subject to change without notice.

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RATINGS AND CHARACTERISTIC CURVES BT134-600E

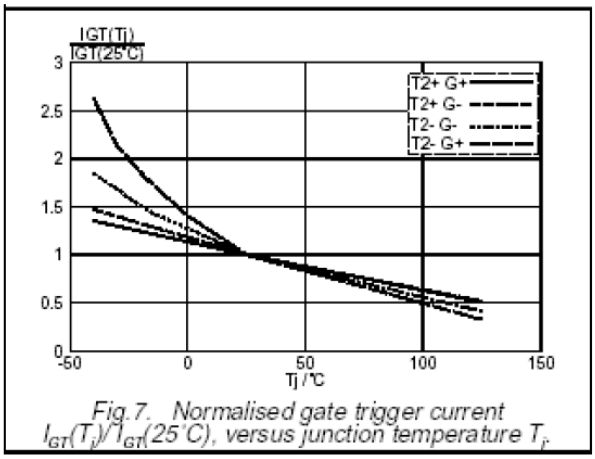

Fig.7. Normalised gate trigger current $I_{GT}(T_j)/I_{GT}(25°C)$, versus junction temperature T_j.

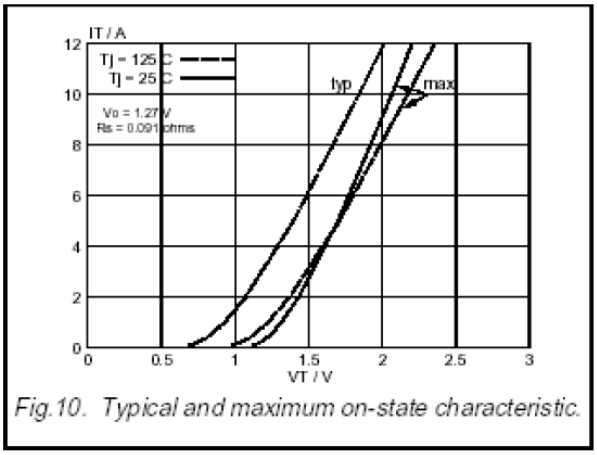

Fig.10. Typical and maximum on-state characteristic.

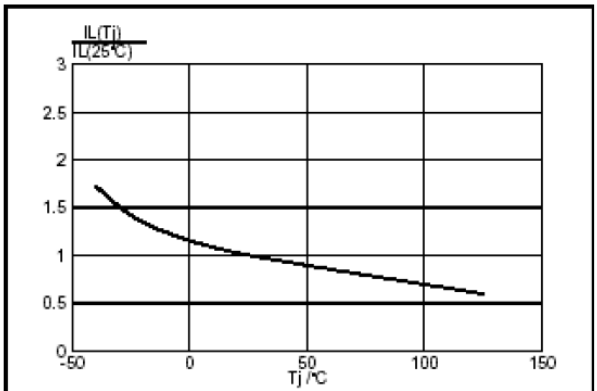

Fig.8. Normalised latching current $I_L(T_j)/I_L(25°C)$, versus junction temperature T_j.

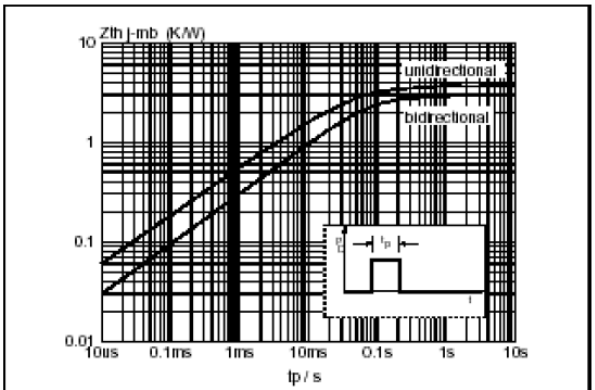

Fig.11. Transient thermal impedance $Z_{th\ j\text{-}mb}$, versus pulse width t_p.

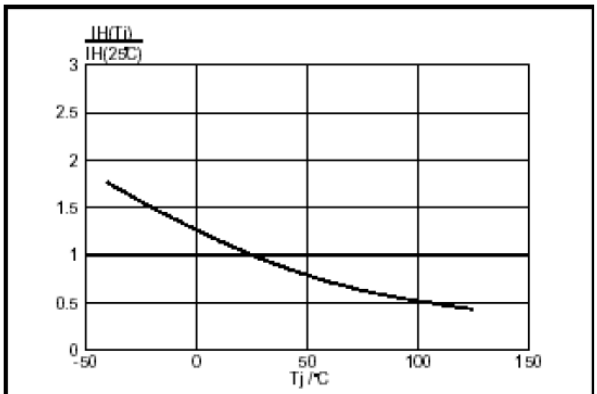

Fig.9. Normalised holding current $I_H(T_j)/I_H(25°C)$, versus junction temperature T_j.

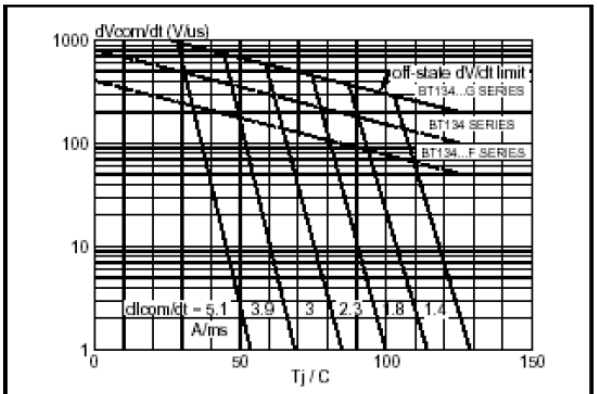

Fig.12. Typical commutation dV/dt versus junction temperature, parameter commutation dI_T/dt. The triac should commutate when the dV/dt is below the value on the appropriate curve for pre-commutation dI_T/dt.

Note: Specifications are subject to change without notice.