BT134-600D

Sensitive Gate Triacs
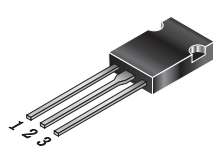
HAOPIN MICROELECTRONICS CO.,LTD.

Description

Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

Symbol	Simplified outline
T2 ◁ T1 G	SOT-82

Pin	Description
1	Main terminal 1 (T1)
2	Main terminal 2 (T2)
3	gate (G)
TAB	Main terminal 2 (T2)

Applications:

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

Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 4 A

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_{T(RMS)}$	RMS on-state current （full sine wave）	4	A
I_{TSM}	Non-repetitive peak on-state current	25	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{th\,j-mb}$	Thermal resistance Junction to mounting base	Full cycle	-	-	3.0	K/W
		Half cycle	-	-	3.7	K/W
$R_{th\,j-a}$	Thermal resistance Junction to ambient	In free air	-	100	-	K/W

Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS		MIN	Value	UNIT
V_{DRM}	Repetitive peak off-state Voltages			-	600	V
$I_{T(RMS)}$	RMS on-state current	Full sine wave;$T_{mb} \leqslant 107℃$		-	4	A
I_{TSM}	Non-repetitive surge peak on-statecurrent	full sine wave;, $T_j=25℃$ prior to surge	t=20ms	-	25	A
			t=16.7ms	-	27	A
I^2t	I^2t for fusing	T=10ms		-	3.1	A^2S
dI_T/dt	Repetitive rate of rise of on-state current after triggering	I_{TM}=6A; I_G=0.2A; DI_G/dt=0.2A/μs	T2+G+	-	50	A/μs
			T2+G-	-	50	A/μs
			T2-G-	-	50	A/μs
			T2-G+	-	10	A/μs
I_{GM}	Peak gate current			-	2	A
V_{GM}	Peak gate voltage			-	5	V
P_{GM}	Peak gate power			-	5	W
$P_{G(AV)}$	Average gate power	Over any 20 ms period		-	0.5	W
T_{stg}	Storage temperature			-40	150	℃
T_j	Operating junction Temperature			-	125	℃

$T_J=25^OC$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS		MIN	TYP	MAX	UNIT
Static characteristics							
I_{GT1}	Gate trigger current	V_D=12V; I_T=0.1A	T2+G+	-	2.0	5	mA
			T2+G-	-	2.5	5	mA
			T2-G-	-	2.5	5	mA
			T2-G+	-	5.0	10	mA
I_L	Latching current	V_D=12V; I_{GT}=0.1A	T2+G+	-	1.6	10	mA
			T2+G-	-	4.5	15	mA
			T2-G-	-	1.2	10	mA
			T2-G+	-	2.2	15	mA
I_H	Holding current	V_D=12V; I_{GT}=0.1A		-	1.2	10	mA
V_T	On-state voltage	I_T=5A		-	1.4	1.70	V
V_{GT}	Gate trigger voltage	V_D=12V;I_T=0.1A		-	0.7	1.5	V
		V_D=400V;I_T=0.1A;T_J=125℃		0.25	0.4	-	V
I_D	Off-state leakage current	V_D=$V_{DRM(max)}$;T_J=125℃		-	0.1	0.5	mA

Dynamic Characteristics

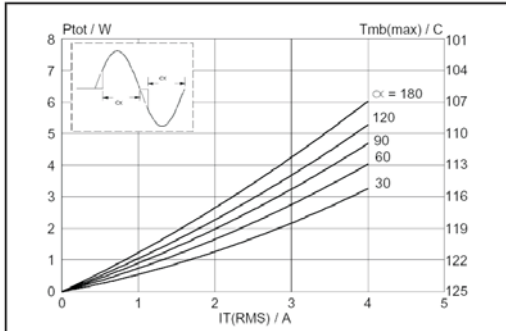| SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
dV_D/dt	Critical rate of rise of Off-state voltage	V_{DM}=67% $V_{DRM(max)}$;Tj=125℃; Exponential wave form;R_{GK}=1KΩ	-	5	-	V/μs
t_{gt}	Gate controlled turn-on time	I_{TM}=6A;V_D=$V_{DRM(max)}$; I_G=0.1A; DI_G/dt=5A/μs	-	2	-	μs

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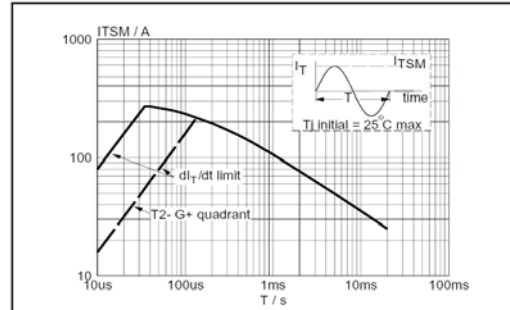

Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leq 20ms$.
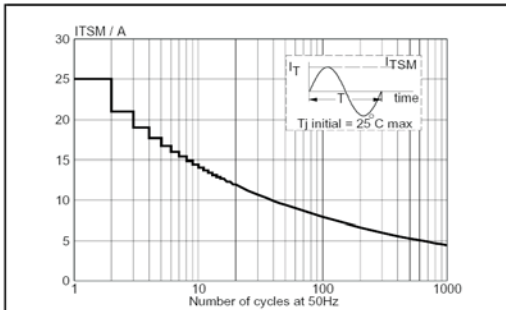

Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.
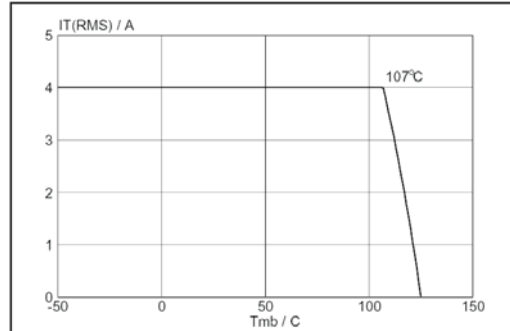

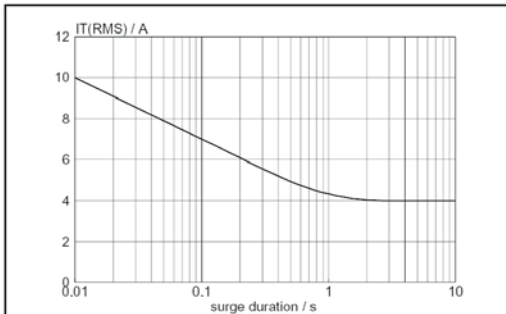Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

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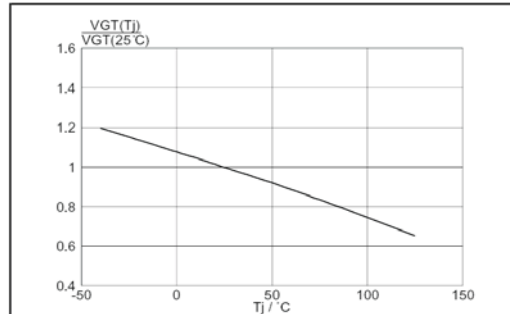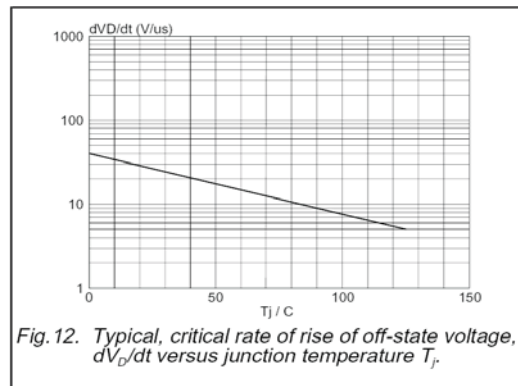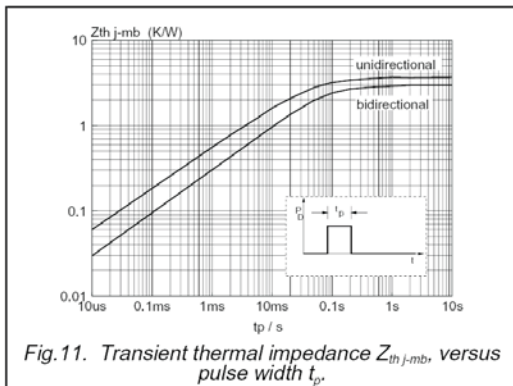

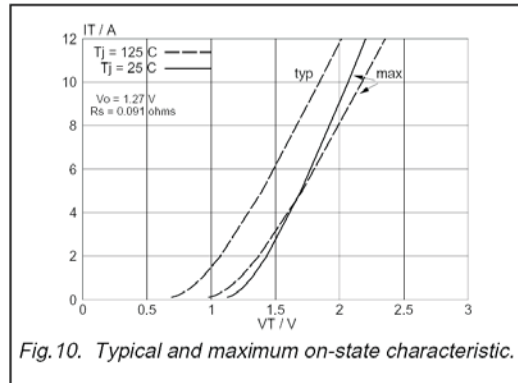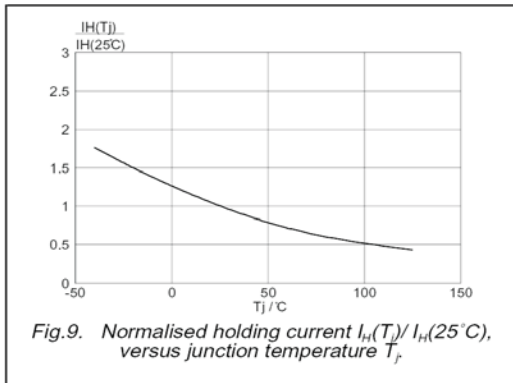
Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/ V_{GT}(25°C)$, versus junction temperature T_j.

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

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

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

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

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

Fig.12.   Typical, critical rate of rise of off-state voltage, dV_D/dt versus junction temperature T_j.

™
HPM

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MECHANICAL DATA

Dimensions in mm

Net Mass: 0.8 g

SOT-82

mounting
base

2.8
2.3

7.8
max

3.1
2.5

3.75

11.1
max

1) 2.54 max

1.2

15.3
min

1   2   3

4.58

0.5

2.29

0.88
max
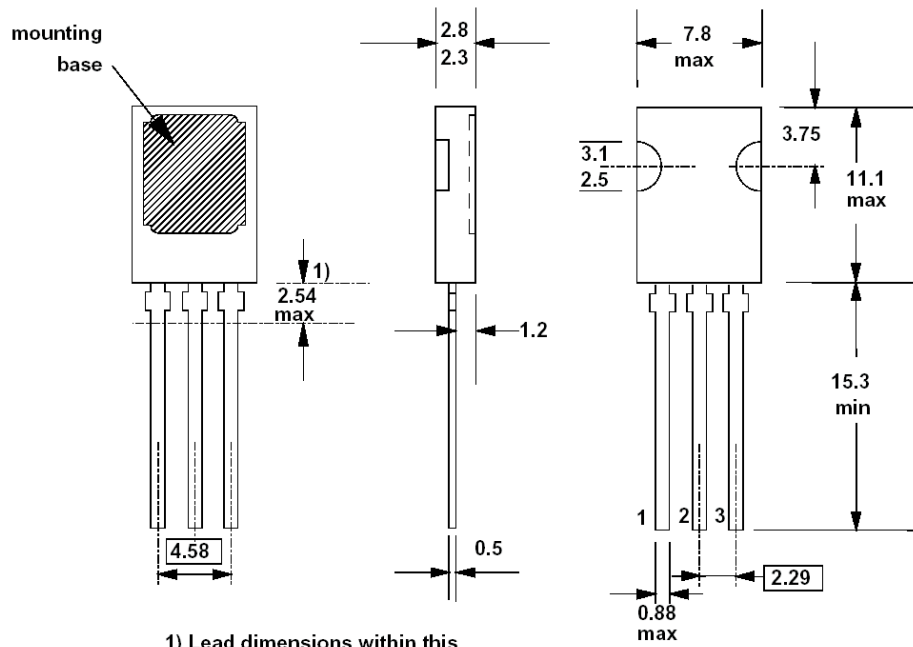
1) Lead dimensions within this
   zone uncontrolled.