Four quadrant Triacs BT134-600D

1、Description

Passivated triacs in a full pack plastic envelope, intended for use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting heating and static switching.

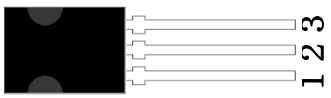
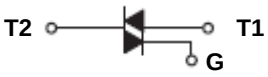
2、Applications

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

3、Features

- Blocking voltage to 600 thru 800 V
- On-state RMS current to 4 A
- Ultra low gate trigger current
- Low cost package.

4、Pinning information

PIN	Description	Simplified outline	Symbol
1	main terminal 1(T1)	 SOT-82	
2	main terminal 2(T2)		
3	gate (G)		

5、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	25	A

6、Thermal characteristics

SYMBOL	PARAMETER		Value	UNIT
Rth(j-c)	**junction to case(AC)**	SOT-82	4.1	°C/W

7、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-state voltages		-	600	V
$I_{T(RMS)}$	RMS on-state current	Full Cycle Sine Wave 50 to 60 Hz (TC = 107°C)	-	4	A
I_{TSM}	Non-repetitive peak Surge current	One Full cycle, 60 Hz, T_J = +110°C	-	25	A
I^2t	I^2t for fusing	t =8.3ms	-	3.1	A^2s
V_{GM}	Peak gate voltage	Pulse Width ≤ 1.0 μs, TC = 85°C	-	5	V
P_{GM}	Peak gate power	Pulse Width ≤1.0 μs, TC = 85°C	-	5	W
$P_{G(AV)}$	Average gate power	Pulse Width ≤1.0 μs, TC = 85°C	-	0.5	W
T_{stg}	Storage temperature		-40	150	°C
T_j	Operating junction temperature		-40	125	°C

8、Characteristics

T_J = 25℃ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	V_D = 12 V; I_T = 0.1A T2+ G+ T2+ G- T2- G- T2- G+	 - - - -	 - - - -	 5 5 5 10	 mA mA mA mA
I_L	Latching current	V_D = 12 V; I_{GT} = 0.1A T2+ G+ T2+ G- T2- G- T2- G+	 - - - -	 - - - -	 20 35 20 20	 mA mA mA mA
I_H	Holding current	Main Terminal Voltage = 12 Vdc, Gate Open, Initiating Current ≤1 Adc T_J = 25°C	-	-	25	mA
V_{TM}	On-state voltage	I_{TM} = 5.5A,tp=380us	-	-	1.7	V
V_{GT}	Gate trigger voltage (Continuous dc)	Main Terminal Voltage = 12 Vdc, R_L = 100 Ohms, T_J = –40°C All Quadrants	-	-	1.5	V
V_{GD}	Gate Non–Trigger Voltage	VD=VDRM Tj=125℃ RL=3.3KΩ	0.2	-	-	V
Dynamic Characteristics						
dV/dt	Critical rate of rise of off-state voltage	V_{DM} = 67% $V_{DRM(max)}$; T_j = 125 °C; Exponential wave form; RGK=1KΩ	5	-	-	V/μs
(dV/dt)c	Critical rate of change of commutating voltage	(dI/dt)c=-1.7A/ms Tj=125℃	0.1	-	-	V/μs

9、Electrical Characteristics Curve

FIG.1 Maximum power dissipation versus RMS on-state current

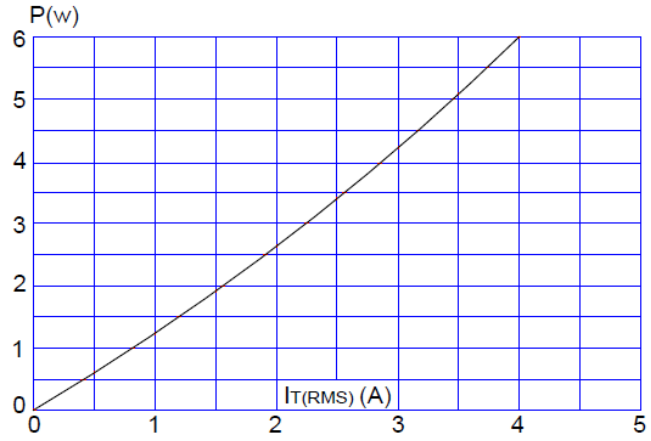


FIG.2: RMS on-state current versus case temperature

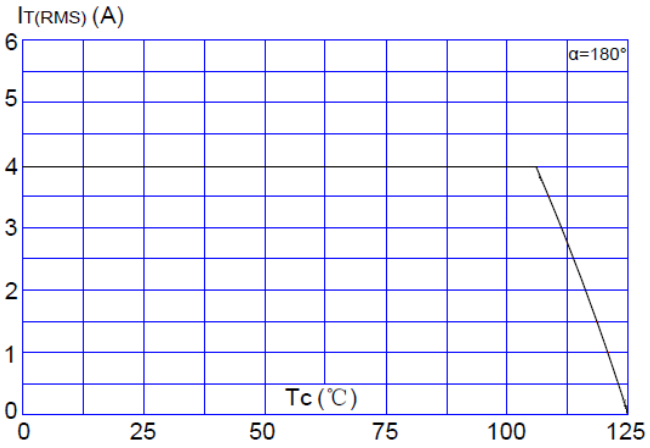


FIG.3: Surge peak on-state current versus number of cycles

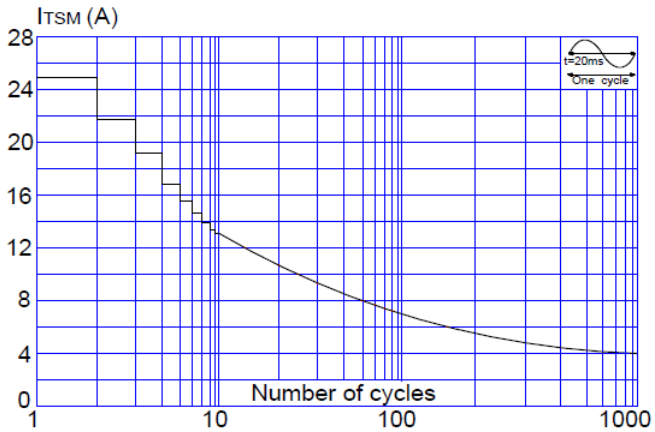


FIG.4: On-state characteristics (maximum values)

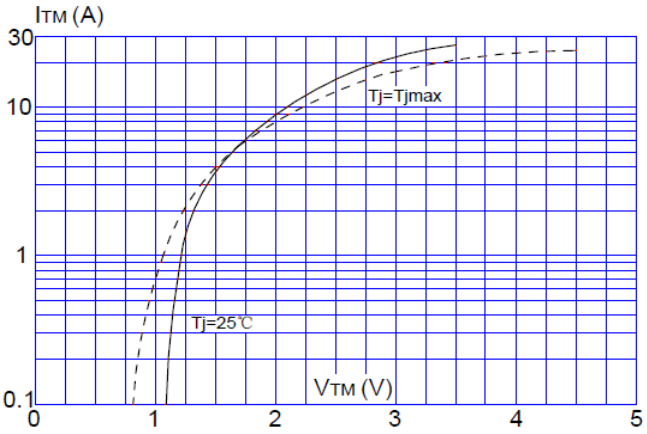


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of I^2t (Ⅰ-Ⅱ-Ⅲ:dI/dt < 50A/μs; Ⅳ:dI/dt < 10A/μs)

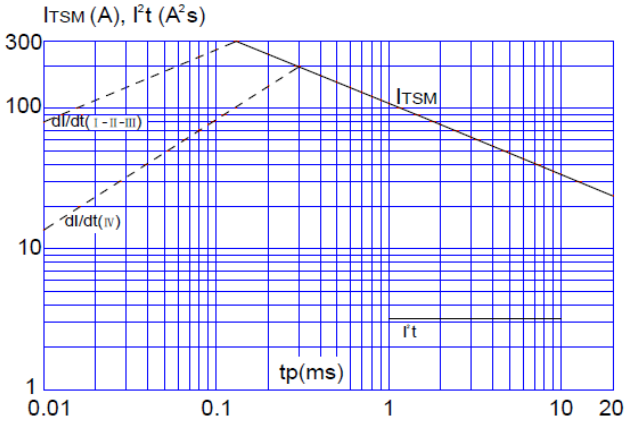
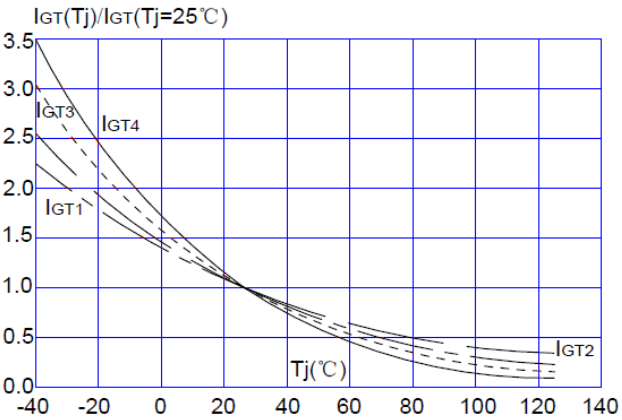
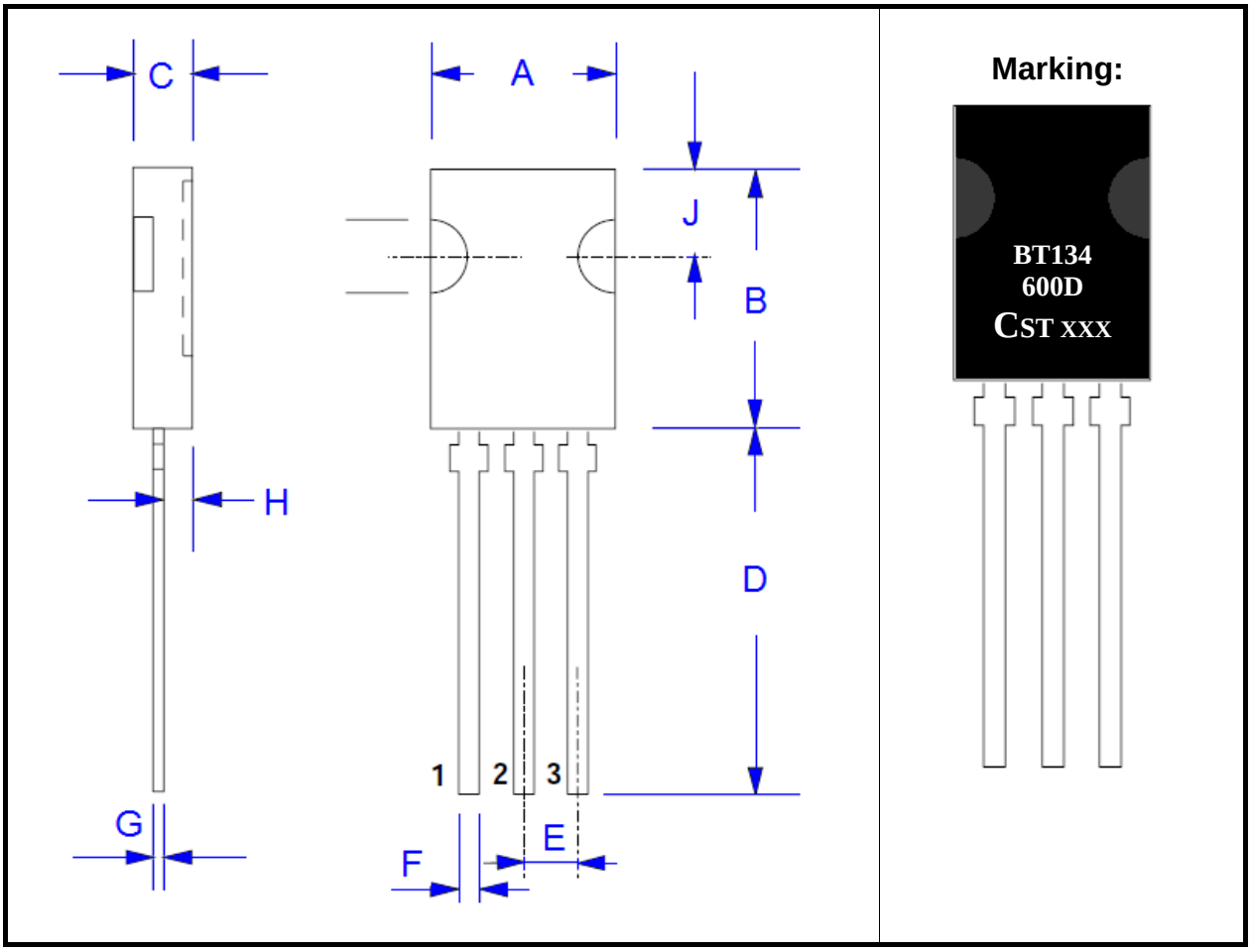


FIG.6: Relative variations of gate trigger current versus junction temperature



10、Package outline(SOT-82)



DIM	Inches			Milimeters		
	Min	Type	Max	Min	Type	Max
A	-	-	0.305	-	-	7.75
B	-	-	0.445	-	-	11.3
C	0.091	-	0.110	2.3	-	2.8
D	0.571	-	-	14.5	-	-
E	-	0.090	-	-	2.29	-
F	-	-	0.035	-	-	0.88
G	-	0.019	-	-	0.48	-
H	-	0.049	-	-	1.25	-
J	-	0.148	-	-	3.75	-