

DATA SHEET

BT134W series E
Triacs
sensitive gate

Product specification

August 1997



Triacs sensitive gate

BT134W series E

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-sp}$	Thermal resistance junction to solder point	full or half cycle	-	-	15	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	pcb mounted; minimum footprint pcb mounted; pad area as in fig:14	-	156 70	-	K/W K/W

STATIC CHARACTERISTICS

 $T_j = 25\text{ °C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{GT}	Gate trigger current	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	2.5	10	mA
		T2+ G+	-	4.0	10	mA
		T2+ G-	-	5.0	10	mA
		T2- G-	-	11	25	mA
		T2- G+	-	3.0	15	mA
I_L	Latching current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	10	20	mA
		T2+ G+	-	2.5	15	mA
		T2+ G-	-	4.0	20	mA
		T2- G-	-	2.2	15	mA
		T2- G+	-	2.2	15	mA
I_H	Holding current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	1.2	1.5	V
V_T	On-state voltage	$I_T = 2\text{ A}$	-	0.7	1.5	V
V_{GT}	Gate trigger voltage	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	0.4	-	V
		$V_D = 400\text{ V}; I_T = 0.1\text{ A}; T_j = 125\text{ °C}$	0.25	0.1	0.5	mA
I_D	Off-state leakage current	$V_D = V_{DRM(max)}; T_j = 125\text{ °C}$	-	0.1	0.5	mA

DYNAMIC CHARACTERISTICS

 $T_j = 25\text{ °C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
dV_D/dt	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM(max)}; T_j = 125\text{ °C};$ exponential waveform; gate open circuit	-	30	-	V/ μ s
t_{gt}	Gate controlled turn-on time	$I_{TM} = 1.5\text{ A}; V_D = V_{DRM(max)}; I_G = 0.1\text{ A};$ $dI_G/dt = 5\text{ A}/\mu$ s	-	2	-	μ s

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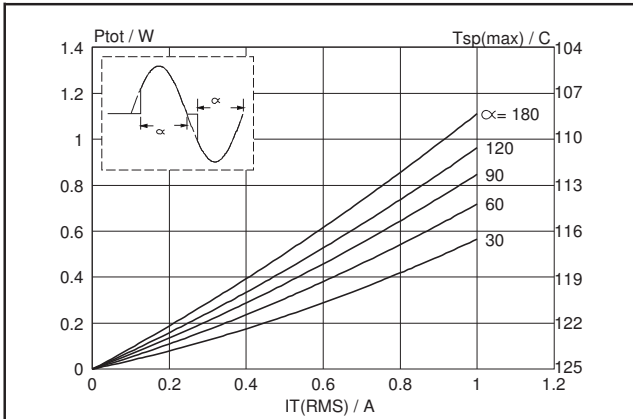


Fig.1. Maximum on-state dissipation, P_{tot} , versus rms on-state current, $I_{T(RMS)}$, where $\alpha =$ conduction angle.

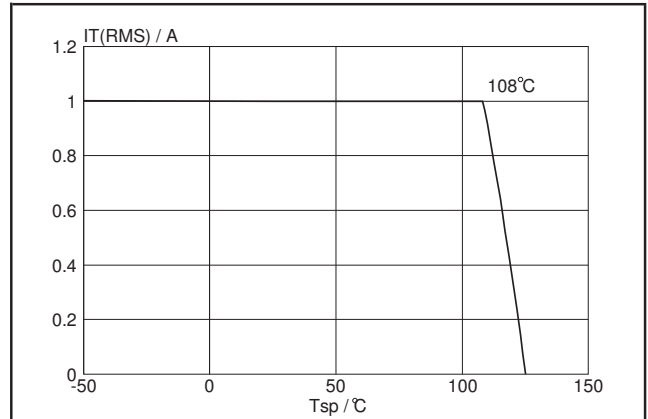


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus solder point temperature T_{sp} .

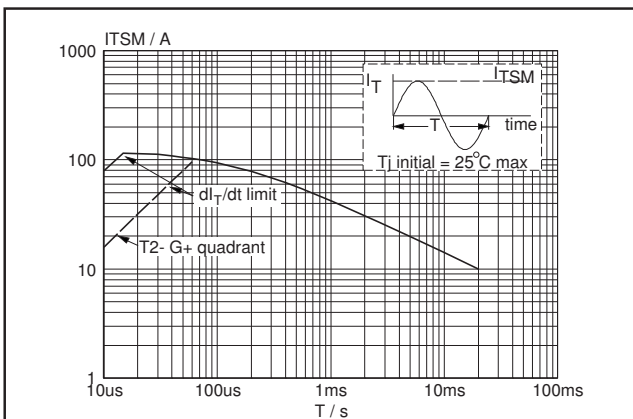


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus pulse width t_p , for sinusoidal currents, $t_p \leq 20ms$.

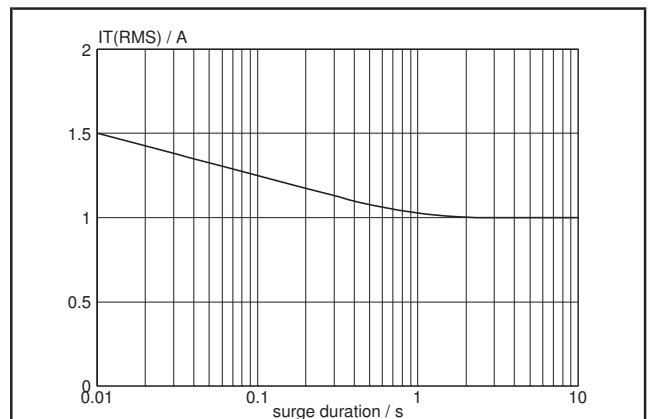


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, $f = 50 Hz$; $T_{sp} \leq 108^\circ C$.

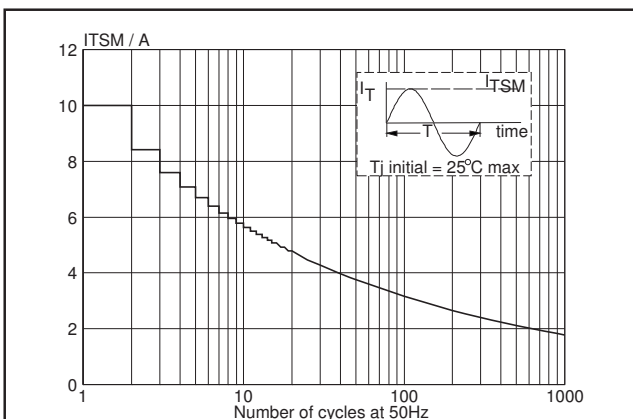


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50 Hz$.

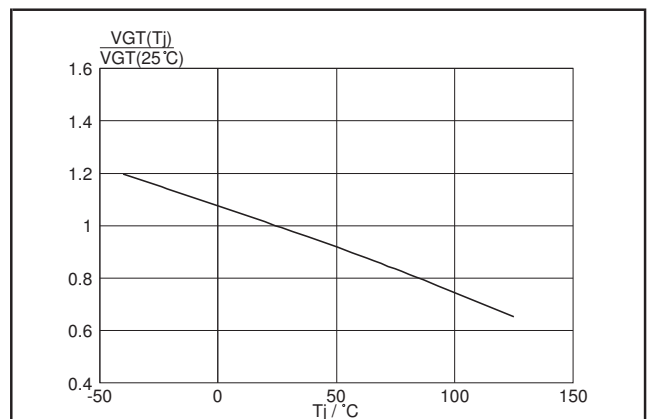
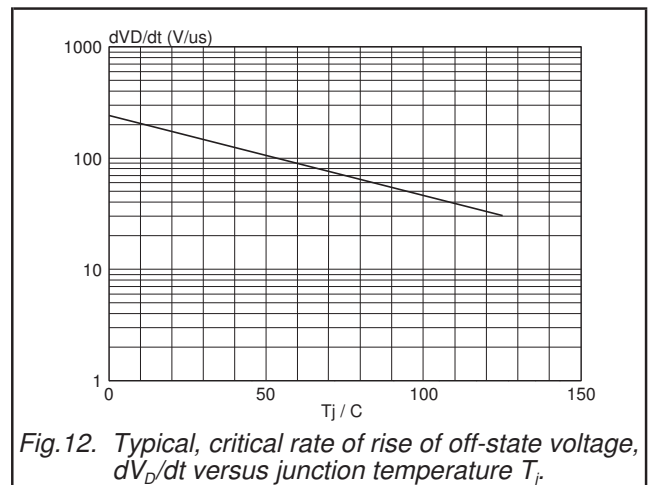
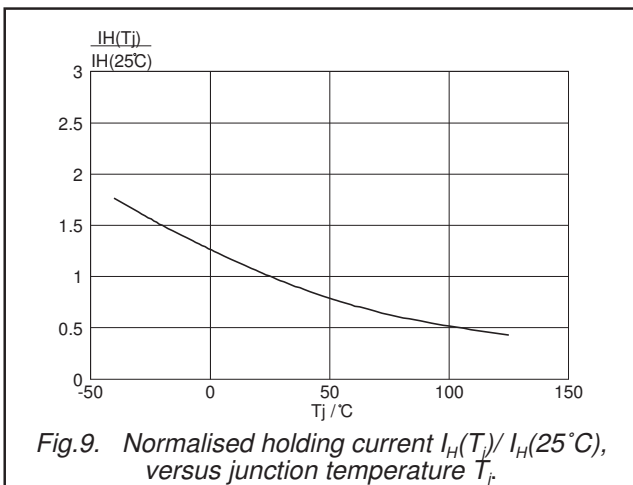
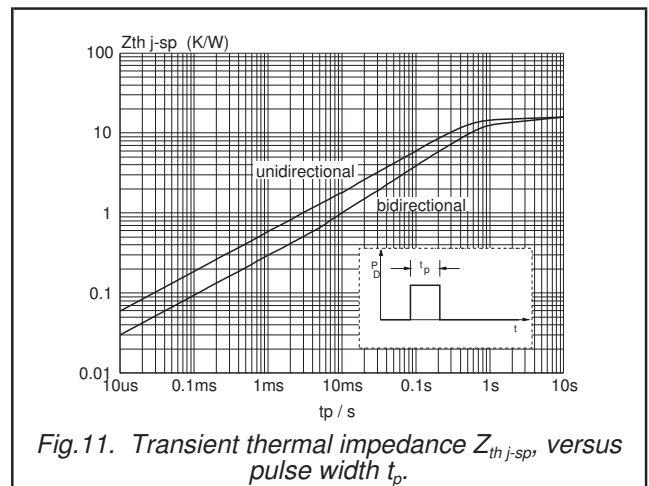
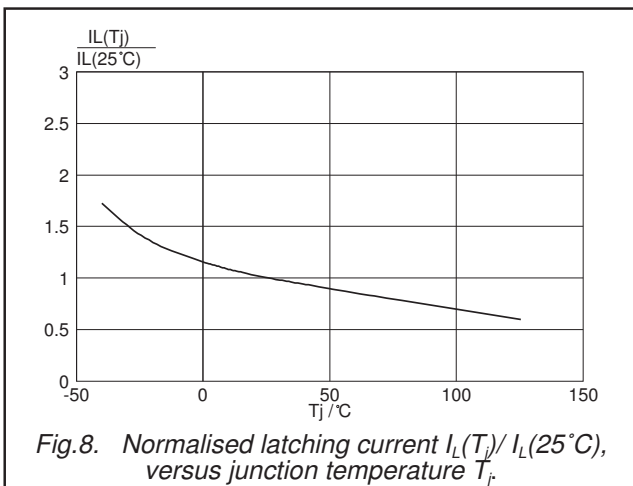
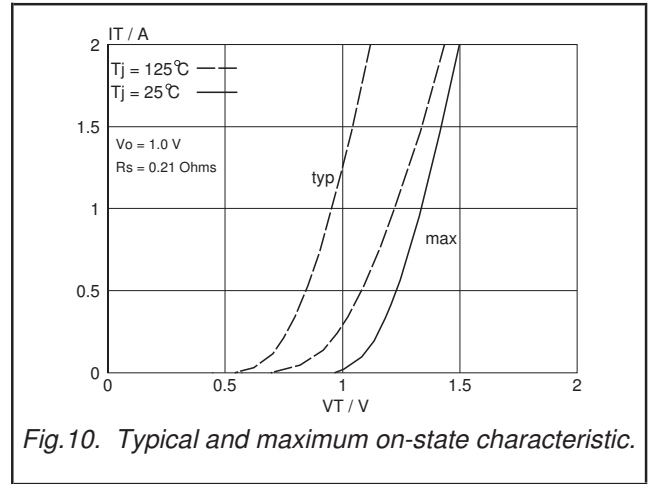
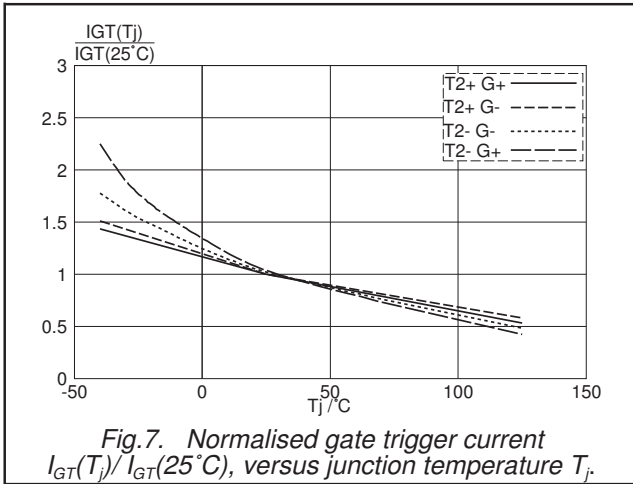


Fig.6. Normalised gate trigger voltage $V_{GT(T_j)} / V_{GT(25^\circ C)}$, versus junction temperature T_j .

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MOUNTING INSTRUCTIONS

Dimensions in mm.

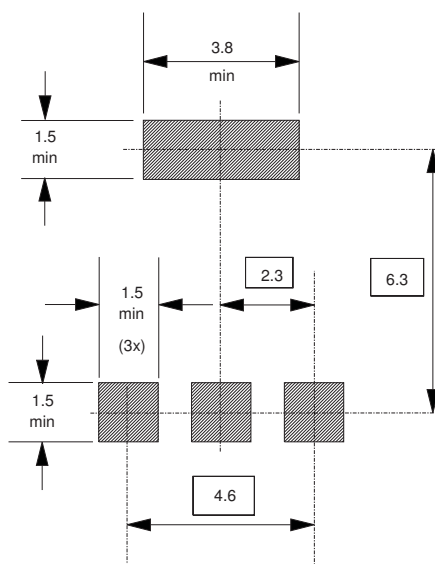
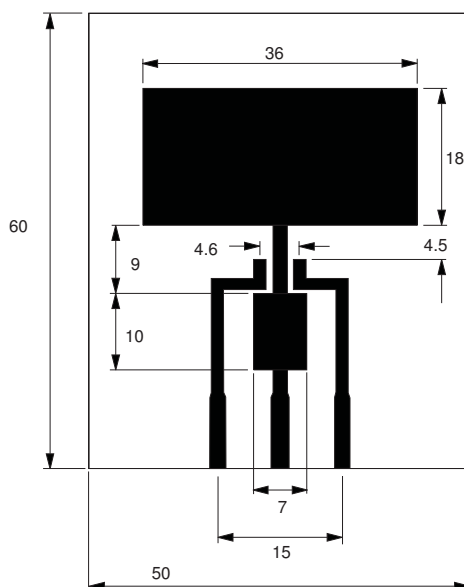


Fig.13. soldering pattern for surface mounting SOT223.

PRINTED CIRCUIT BOARD

Dimensions in mm.



*Fig.14. PCB for thermal resistance and power rating for SOT223.
PCB: FR4 epoxy glass (1.6 mm thick), copper laminate (35 μm thick).*

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MECHANICAL DATA

Dimensions in mm

Net Mass: 0.11 g

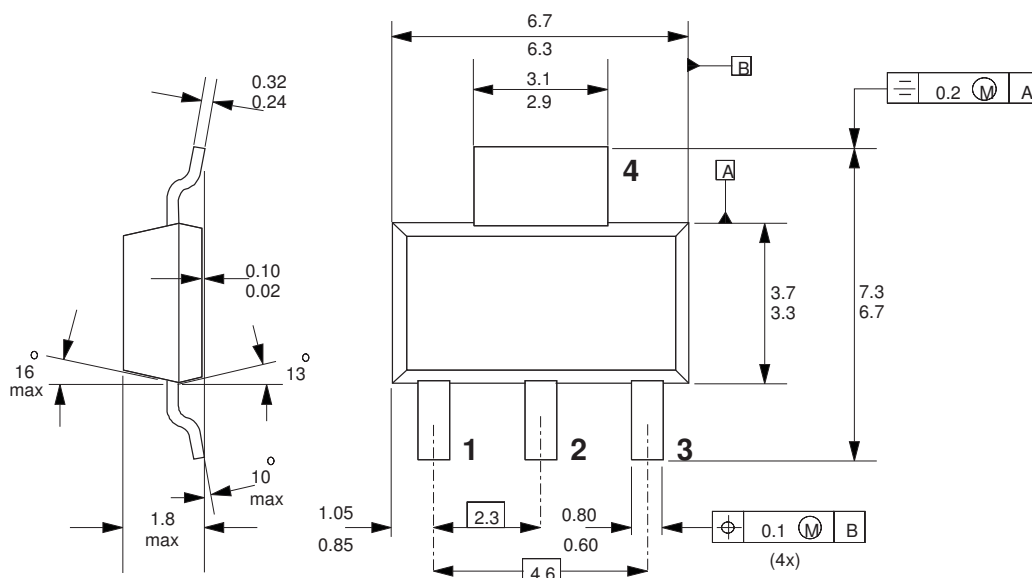


Fig.15. SOT223 surface mounting package.

Notes

1. For further information, refer to Philips publication SC18 " SMD Footprint Design and Soldering Guidelines".
Order code: 9397 750 00505.
2. Epoxy meets UL94 V0 at 1/8".

Legal information

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Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
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