# Triacs logic level

## **GENERAL DESCRIPTION**

Glass passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

## **PINNING - TO92**



BT132 series D

# QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	MAX.	UNIT
V <sub>drm</sub> I <sub>t(rms)</sub> I <sub>tsm</sub>	BT132- Repetitive peak off-state voltages RMS on-state current Non-repetitive peak on-state current	<b>500D</b> 500 1 16	<b>600D</b> 600 1 16	V A A

## **PIN CONFIGURATION**

# SYMBOL

PIN	DESCRIPTION	VVV. 100 V.COM TOW VV VV	
N10	main terminal 2		
2	gate	NYOW, 100 COT TW NWW	T2
3	main terminal 1	WWW.1000X.CC	
	LIVO COM. TW		Construction of the second

### LIMITING VALUES

SYMBOL	PARAMETER	CONDITIONS	MIN.	MA	X.	UNIT
V <sub>DRM</sub>	Repetitive peak off-state voltages	WWW.100Y.COM.TW	-	<b>-500</b> 500 <sup>1</sup>	<b>-600</b> 600 <sup>1</sup>	V
I <sub>T(RMS)</sub> I <sub>TSM</sub>	RMS on-state current Non-repetitive peak on-state current	full sine wave; T <sub>lead</sub> ≤51 °C full sine wave; T <sub>j</sub> = 25 °C prior to surge	N - 1	MMM	100X.C	A
	WWW.Incov.COM.	t = Ž0 ms	W			A
l <sup>2</sup> t	I <sup>2</sup> t for fusing	t = 16.7 ms t = 10 ms	T-N	17 1.2		A A <sup>2</sup> s
dl <sub>T</sub> /dt	Repetitive rate of rise of on-state current after	I <sub>TM</sub> = 1.5 A; I <sub>G</sub> = 0.2 A; dI <sub>G</sub> /dt = 0.2 A/μs	T.I.			I.CON
	triggering	T2+ G+ T2+ G-	Mr.	5 5		A/μs A/μs
	WW.100 1. CON	T2- G- C	DW.	S 5	0	A/µs
	W 1002.0	T2- G+	1.170			A/µs
I <sub>GM</sub> V <sub>GM</sub>	Peak gate current Peak gate voltage	TW WW 100Y.		11 22 55 55		A
PGM	Peak gate power	WWW.	COM	TN 5		Ŵ
P <sub>G(AV)</sub>	Average gate power	over any 20 ms period	$CO^{N}$	0.	5	W
T <sub>stg</sub> T <sub>j</sub>	Storage temperature Operating junction	ON.TW WILLIN.100	-40	15		°C O
•]	temperature	WITH WWW TIO	N.C.	M.TW		10

<sup>1</sup> 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 3 A/µs.

Triacs

logic level

# THERMAL RESISTANCES

100X.COM.TW

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	רואט
R <sub>th j-lead</sub> R <sub>th j-a</sub>	Thermal resistance junction to lead Thermal resistance junction to ambient	full cycle half cycle pcb mounted;lead length = 4mm	COMIN X.COMIN	- - 150	60 80 -	K/W K/W K/W

WWW.100Y.COM.TW

WWW.100Y.C

100X.COM.TW

W.100Y.COM.TW

OM.TW

#### 100Y.COT STATIC CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
I <sub>GT</sub>	Gate trigger current	$V_{\rm D} = 12 \text{ V}; I_{\rm T} = 0.1 \text{ A}$	WWW.	N.CO	17.		
1001		100 CON. I	T2+ G+		2.0	5	mA
	WW WN	The second second	T2+ G-	007.0	2.5	5	mA 🛛
	CON-1	N.IOC CONL.	T2- G-	× (	2.5	5	mA
	WW WTM	100X.0 M.TW	T2- G+	1067.	5.0	10	mA
LN.10	Latching current	$V_{\rm D} = 12 \text{ V}; I_{\rm GT} = 0.1 \text{ A}$	_www.	Va	COF	WT	
	. M.T.	NICON TONI	T2+ G+	N.140	1.6	10	mA
	V.COM WW	N W. OV.	T2+ G-	1.00	4.5	15	mA
	CONFIL	W.100 COM.	T2- G-	N.100	1.2	10	mA
	NT WT	NT I CONTRACTOR	T2- G+	-10	2.2	15	mA mA
н Vт	Holding current	$V_{\rm D} = 12 \text{ V}; I_{\rm GT} = 0.1 \text{ A}$			1.2	10	mA
	On-state voltage	$I_T = 5 A$			1.4	1.70	N N
V <sub>GT</sub>	Gate trigger voltage	$\dot{V}_{\rm D} = 12 \text{ V}; \text{ I}_{\rm T} = 0.1 \text{ A}$			0.7	1.5	V V
NI	1002.001.11	$V_{\rm D} = 400 \text{ V}; \text{ I}_{\rm T} = 0.1 \text{ A}; \text{ T}_{\rm L} = 125$	Ċ	0.25	0.4	-01-'	V
D	Off-state leakage current	$V_D = V_{DRM(max)}; T_j = 125 °C$		1 <del>1</del> 1	0.1	0.5	mA

### DYNAMIC CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
dV <sub>D</sub> /dt t <sub>gt</sub>	Critical rate of rise of off-state voltage Gate controlled turn-on time	$ \begin{array}{l} V_{\text{DM}} = 67\% \; V_{\text{DRM(max)}}; \; T_{j} = 125 \; ^{\circ}\text{C}; \\ \text{exponential waveform}; \; R_{\text{GK}} = 1 \; k\Omega \\ I_{\text{TM}} = 6 \; \text{A}; \; V_{\text{D}} = V_{\text{DRM(max)}}; \; I_{\text{G}} = 0.1 \; \text{A}; \\ dI_{\text{G}}/dt = 5 \; \text{A}/\mu\text{s} \end{array} $	- V	5 2	00 <del>4</del> .C4 10 <del>0</del> ¥.C	V/μs μs

WWW.100X	COM.TW	WWW.100Y
WW 100	勝特力材料	886-3-5753170
WW 100	胜特力电子(上海	) 86-21-54151736
WWW.	胜特力电子(深圳	) 86-755-83298787
WW.L	Http://www	v. 100y. com. tw

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# BT132 series D

WWW.100Y.COM.TW

WWW.100Y.C



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BT132 series D

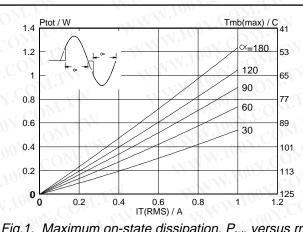


Fig.1. Maximum on-state dissipation, P<sub>tot</sub>, versus rms on-state current,  $I_{T(RMS)}$ , where  $\alpha = conduction$  angle.

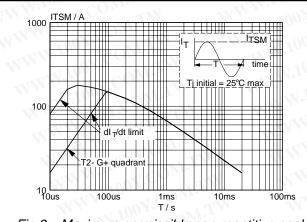
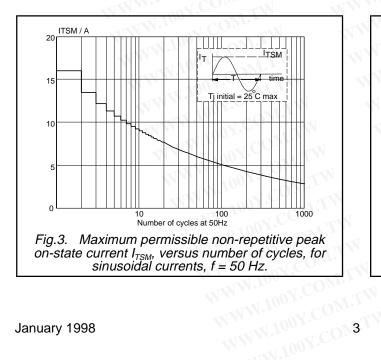
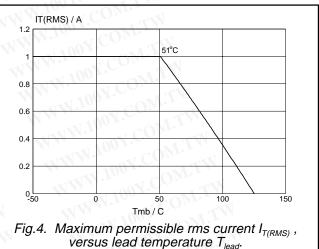
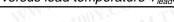


Fig.2. Maximum permissible non-repetitive peak on-state current  $I_{TSM}$ , versus pulse width  $t_p$ , for sinusoidal currents,  $t_0 \leq 20ms$ .







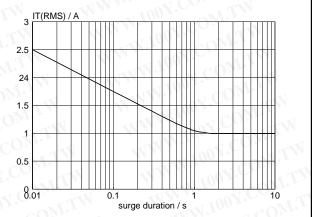
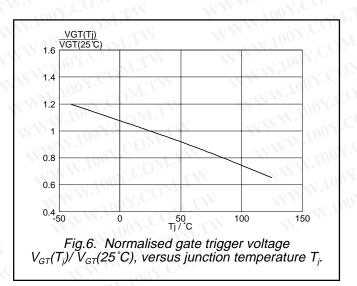
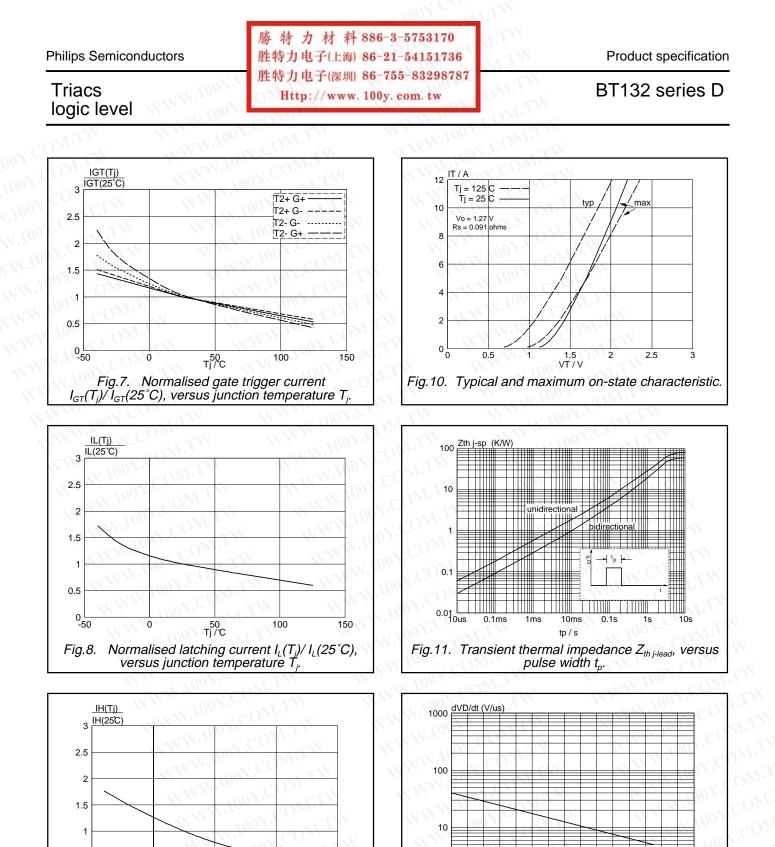


Fig.5. Maximum permissible repetitive rms on-state current  $I_{T(RMS)}$ , versus surge duration, for sinusoidal currents, f = 50 Hz;  $T_{lead} \le 51$  °C.





0.5

0 └ -50

50 Tj /℃

Fig.9. Normalised holding current  $I_H(T_j)/I_H(25^{\circ}C)$ , versus junction temperature  $T_j$ .

100

150

0

150

100

50

WWW.100

Tj / C

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

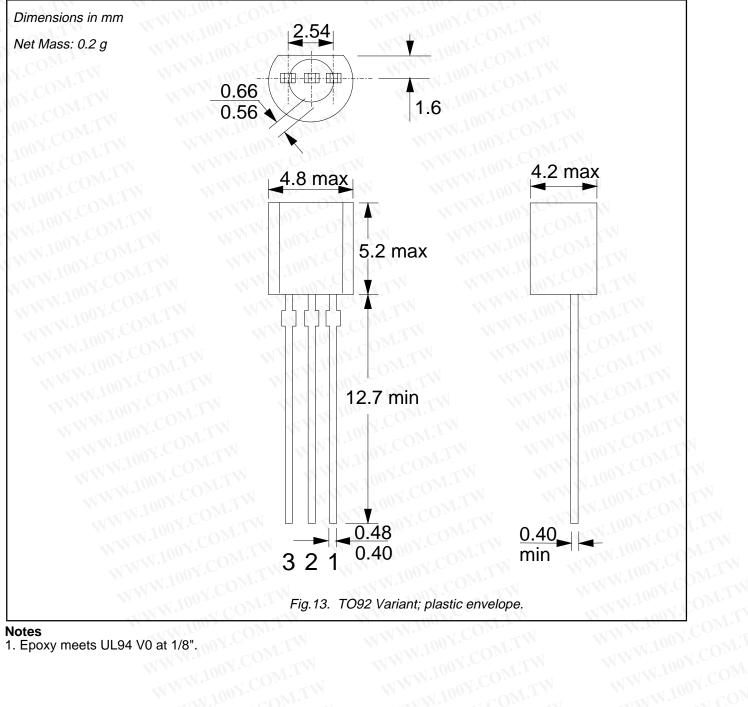
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BT132 series D

# **MECHANICAL DATA**



1. Epoxy meets UL94 V0 at 1/8". WWW.100Y.COM.TW

Product specification

#### Triacs logic level

# DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	WWW. 100Y.CO.T. TW WWW.TI 100Y.CO.M.TW
or more of the limiting val operation of the device at	in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one ues may cause permanent damage to the device. These are stress ratings only and these or at any other conditions above those given in the Characteristics sections of uplied. Exposure to limiting values for extended periods may affect device reliability.

#### Application information

Where application information is given, it is advisory and does not form part of the specification.

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