

JST41Z-800B 40A TRIAC

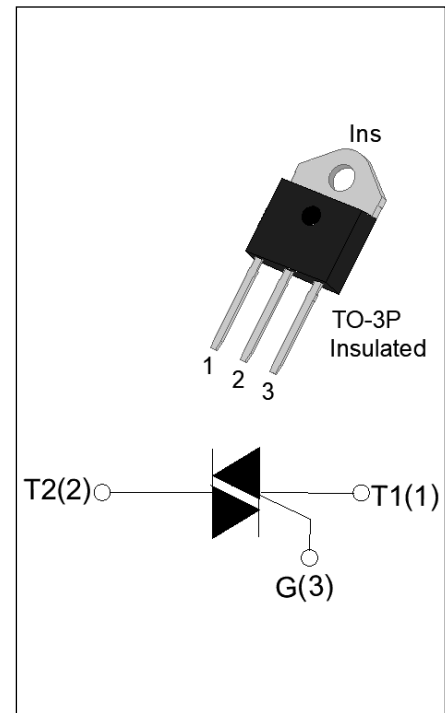
Rev.A.1.1

DESCRIPTION:

The JST41Z-800B triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. By using an internal ceramic pad, JST41Z-800B provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-3P is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM}/V_{RRM}	800	V
$I_{GT\ I/II/III/IV}$	50/50/50/70	mA


ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T _{stg}	-40-150	℃
Operating junction temperature range		T _j	-40-125	℃
Repetitive peak off-state voltage (T _j =25℃)		V _{DRM}	800	V
Repetitive peak reverse voltage (T _j =25℃)		V _{RRM}	800	V
RMS on-state current (T _c ≤81℃)		I _{T(RMS)}	40	A
Non repetitive surge peak on-state current (full cycle , t _p =20ms , T _j =25℃)		I _{TSM}	420	A
Non repetitive surge peak on-state current (full cycle , t _p =16.6ms , T _j =25℃)			462	
I ² t value for fusing (t _p =10ms , T _j =25℃)		I ² t	1000	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT} , f=100Hz , T _j =125℃)	I - II	di/dt	100	A/μs
	III-IV		50	
Peak gate current (t _p =20μs , T _j =125℃)		I _{GM}	8	A
Average gate power dissipation (T _j =125℃)		P _{G(AV)}	1	W
Peak gate power		P _{GM}	40	W

Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	0.9	kV
--	----------	-----	----

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I - II - III	MAX.	50	mA
		IV		70	
V_{GT}		ALL	MAX.	1.3	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	ALL	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I - III - IV	MAX.	80	mA
		II		160	
I_H	$I_T=500\text{mA}$		MAX.	80	mA
dV/dt	$V_D=540\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	1200	V/ μs
$(dV/dt)_c$	$(dI/dt)_c=20\text{A/ms}$, $T_j=125^{\circ}\text{C}$		MIN.	20	V/ μs
t_{on}	$I_G=80\text{mA}$ $I_A=400\text{mA}$ $I_R=40\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	10	μs
t_{off}				70	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=60\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.4	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.73	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	10	m Ω
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	0.85	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	junction to ambient (AC)	50	$^{\circ}\text{C/W}$

ORDERING INFORMATION

J	ST	41	Z	-800	B
JieJie Microelectronics Co., Ltd.	Triacs	$I_{T(RMS)}:40A$	Z:TO-3P(Ins)	800: $V_{DRM}/V_{RRM} \geq 800V$	B: $I_{GT1-3} \leq 50mA$ $I_{GT4} \leq 70mA$

MARKING

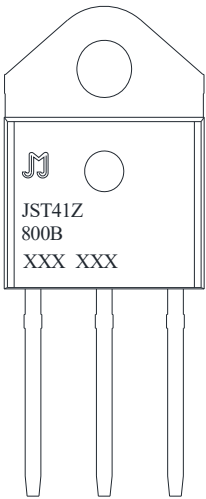
	XXX XXX Year _____ Month _____ Production Code
---	---

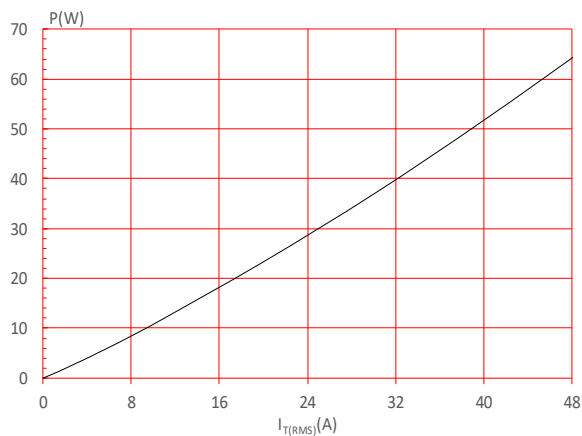
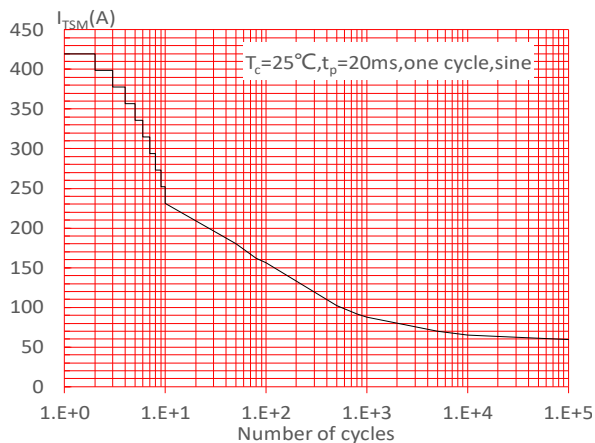
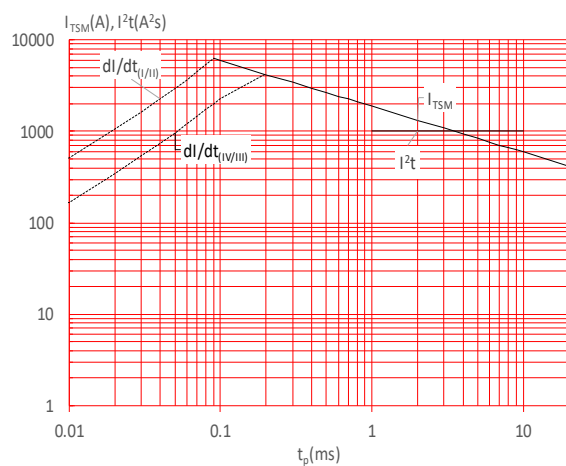
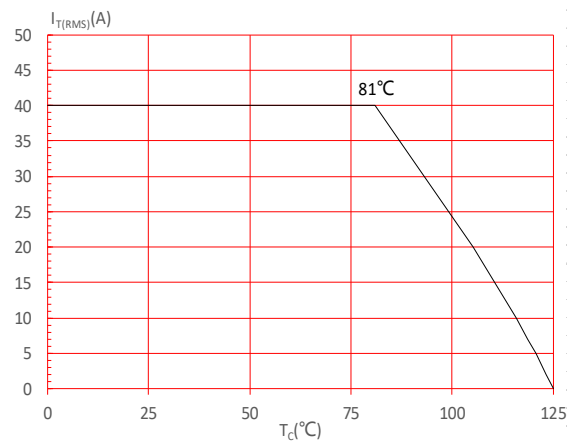
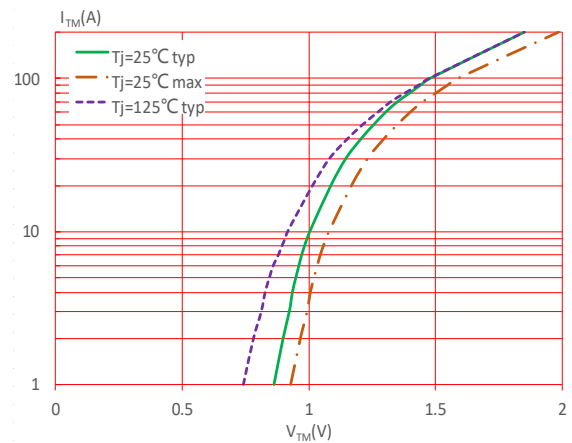
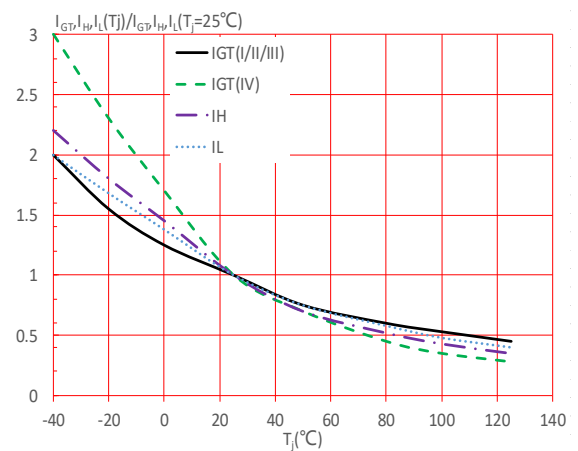
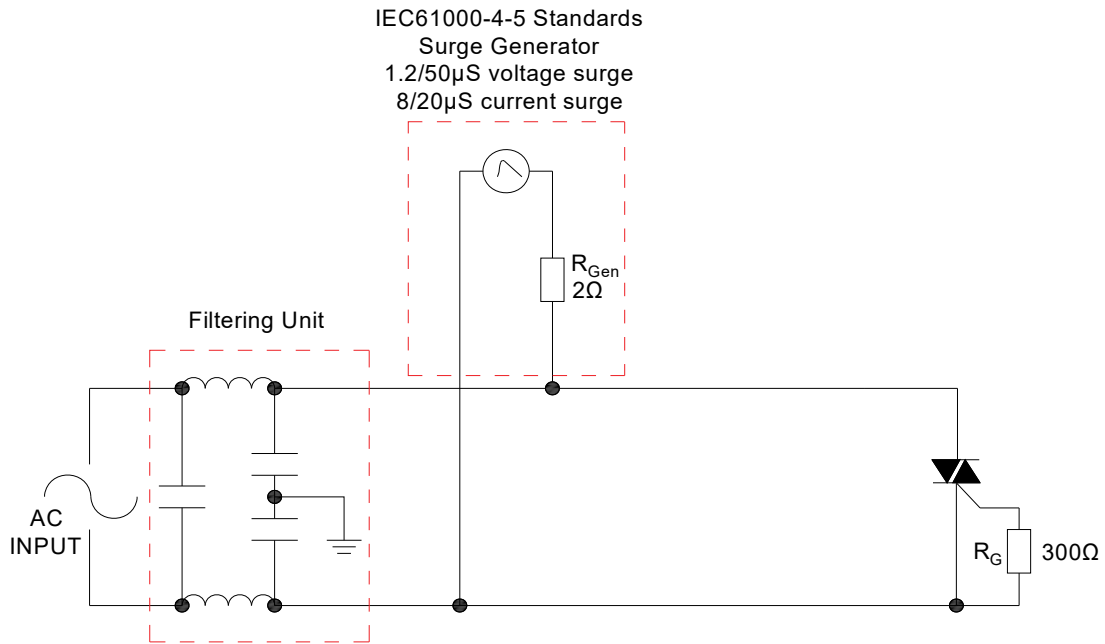
FIG.1: Maximum power dissipation versus RMS on-state current**FIG.3:** Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t (I - II: $dl/dt < 100A/\mu s$; III-IV: $dl/dt < 50A/\mu s$)**FIG.2:** RMS on-state current versus case temperature**FIG.4:** On-state characteristics**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics

ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III	IV			
JST41Z-800B	800	50	70	TO-3P(Ins)	30	Tube

Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last update
Oct.17, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin electronic component, showing three views: a top view, a side view, and a front view.

Top View:

- Overall width: H
- Overall height: G
- Distance from top edge to center of mounting hole: F
- Radius of mounting hole: R
- Distance from center of mounting hole to center of pin: I
- Pin diameter: $\Phi 4.05-4.25\text{mm}$
- Pin length: L
- Pin diameter: P
- Pin length: J
- Pin length: K
- Pin length: Q

Side View:

- Pin diameter: A
- Pin length: B
- Pin length: N
- Pin length: M
- Pin length: E
- Pin length: D

Front View:

- Pin length: $F1$
- Pin length: $H1$

Callouts:

- $2-R0.5$ (Top edge radius)

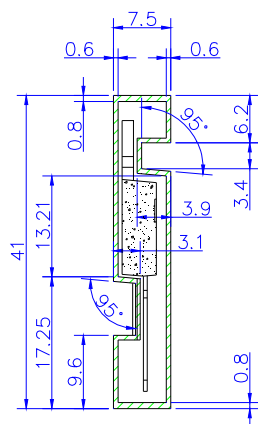
Technical drawing of a mechanical part, likely a bracket or support, showing two views: a front view (left) and a side view (right).

Front View (Left):

- The part has a central rectangular section with a stippled pattern, indicating a specific material or finish.
- There is a circular hole in the center of the stippled section.
- Below the stippled section are three vertical, tapered legs.
- A circular feature is located above the stippled section, centered horizontally.
- A dimension line indicates a total width of 471.0 mm.
- A dimension line indicates a total height of 530 ± 0.5 mm.

Side View (Right):

- The part has a curved profile on the left side.
- A circular hole is located on the right side.
- A dimension line indicates a distance of 29.50 mm from the right edge to the center of the hole.
- A dimension line indicates a height of 17 mm from the bottom edge to the center of the hole.
- A dimension line indicates a distance of $\phi 3.00 \pm 0.05$ mm from the curved surface to the center of the hole.



7

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied.



is a registered trademark of Jiangsu JieJie Microelectronics Co., Ltd.

Copyright © 2025 Jiangsu JieJie Microelectronics Co., Ltd. All rights reserved.