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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	Ņ
Operating junction temperature range	T_j	-40-125	Ņ
Repetitive peak off-state voltage (T_j=25Ņ)	V_{DRM}	800	V
Repetitive peak reverse voltage (T_j=25Ņ)	V_{RRM}	800	V
RMS on-state current (T_C Ů 81Ņ)	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25Ņ)	I_{TSM}	420	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25Ņ)		462	
I^2t value for fusing (t_p=10ms , T_j=25Ņ)	I^2t	1000	A^2s
Critical rate of rise of on-state current (I_G=2 ¦ I_{GT}, f=100Hz , T_j=125Ņ)	dI/dt	100	A/µs

Peak pulse voltage (T_j=25℃; non-repetitive,off-state;FIG.7)	V_{pp}	0.9	kV

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

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

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=60A t_p=380μs	T_j=25℃	1.4	V
V_{TO}	Threshold voltage	T_j=125℃	0.73	V
R_D	Dynamic resistance	T_j=125℃	10	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	5	mA

THERMAL RESISTANCES

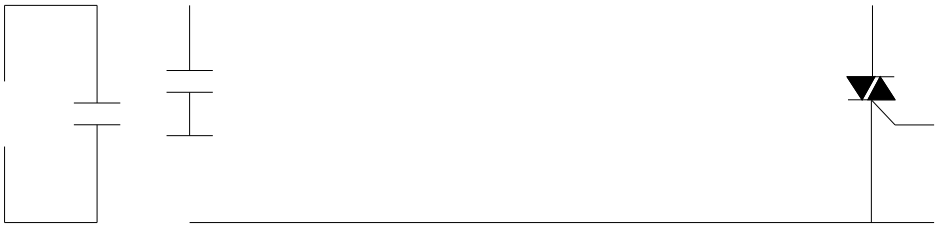
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	0.85	℃/W
$R_{th(j-a)}$	junction to ambient (AC)	50	℃/W

ORDERING INFORMATION

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

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

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



ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		- -				
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

PACKAGE MECHANICAL DATA