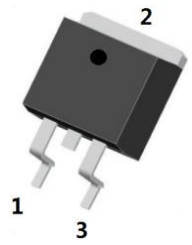
P/N:YZPST-BTA216B-600B/800B

TRIACS

●DESRCRIPTION:

Due to separation glass passivation, these devices have good performance at dv/dt and reliability. The Triac series is suitable for general purpose AC switching. They can be used as an On-Off function in the applications such as static relays, heating regulation, or for phase control operation in light dimmers, motor speed controllers.



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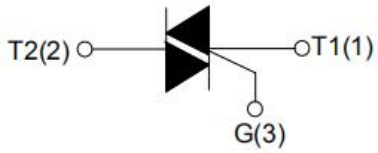

●MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	600/800	V
I_{GT}	⩽10	mA

●ABSOLUTE MAX I MUM RATINGS

Symbol	PARAMETER		Value	Unit
$I_{T(RMS)}$	RMS on-state current(full sine wave)	TO-263.Non-Ins T_C⩽99℃	16	A
I_{TSM}	Non repetitive surge peak on-state current (full sine wave, Tj=25℃)	t=20ms	140	A
		t=16.7ms	150	
I^2t	I^2t Value for fusing	t=10ms	98	A^2S
di/dt	Repetitive rate of rise of on-state Current after triggering	I_{TM} = 20 A; I_G = 0.2 A dI_G/dt = 0.2 A/us	100	A/μs
I_{GM}	Peak gate current,	—	2	A
V_{GM}	Peak gate voltage	—	5	W
P_{GM}	Peak gate power	—	5	W
$P_{G(AV)}$	Average gate power	over any 20 ms period	0.5	W
T_{stg}	Storage junction temperature range	-40 to +150		℃
T_j	Operating junction temperature range	125		℃

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● ELECTRICAL CHARACTERISTICS (Tj = 25°C, unless otherwise specified)

STATIC CHARACTERISTICS

Symbol	Parameter	Test Condition	Quadrant	Value			Unit
				MIN	TYPE	MAX	
I_{GT}	Gate trigger current	V_D=12V, I_T=0.1A	I-II-III	-	-	10	mA
V_{GT}	Gate trigger voltage	V_D=12V, I_T=0.1A		-	0.7	1.5	V
		V_D=400V, I_T=0.1A,Tj=125°C		0.25	0.4	-	
V_T	On-state voltage	I_T=20A		-	1.2	1.5	V
I_H	Holding current	V_D=12V, I_{GT}=0.1A	I-II-III	-	-		mA
I_L	Latching current	V_D=12V, I_{GT}=0.1A	I-III	-	-	60	mA
			II	-	-	90	mA
I_D	Off-state leakage current	V_D = $V_{DRM(max)}$; Tj= 125 ˚C		-	0.1	0.5	mA

DYNAMIC CHARACTERISTICS

Symbol	Parameter	Test Condition	Value		Unit
			MIN	TYPE	
dV_D/dt	Critical rate of rise of off-state voltage	V_{DM} = 67% $V_{DRM(max)}$; Tj = 125 ˚C exponential waveform; gate open circuit	1000	4000	V/us
dIcom/dt	Critical rate of change of commutating current	V_{DM} = 400 V; Tj = 125 ˚C; $I_{T(RMS)}$ = 16A; without snubber; gate open circuit		28	A/ms
t_{gt}	Gate controlled turn-on time	I_{TM} = 20 A; V_D= $V_{DRM(max)}$; I_G = 0.1 A; dI_G/dt = 5 A/μs		2	us

● THERMAL RESISTANCES

Symbol	Parameter	Test Condition	Value			Unit
			MIN	TYPE	MAX	
$R_{th\ j\text{-}mb}$	Thermal resistance junction to mounting base	full cycle			1.2	K/W
		half cycle			1.7	
$R_{th\ j\text{-}a}$	Thermal resistance junction to ambient	In free air		60		K/W

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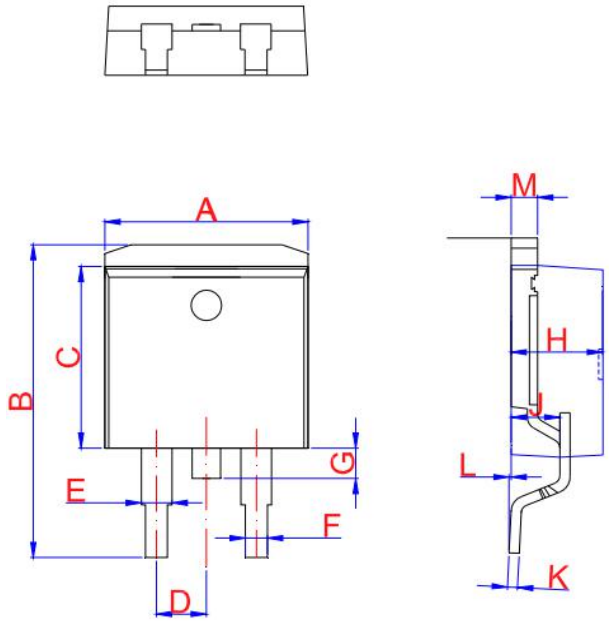
PACKAGE MECHANICAL DATA



TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.9		10.3	0.390		0.406
B	14.7		15.8	0.579		0.622
C	8.5		8.9	0.370		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40	4.60	4.80	0.173	0.181	0.189
J	2.40	2.60	2.80	0.094	0.102	0.110
L	0	0.1	0.25	0	0.004	0.010
M	1.17	1.27	1.37	0.046	0.05	0.054

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ELECTRICAL CHARACTERISTICS (CURVES)

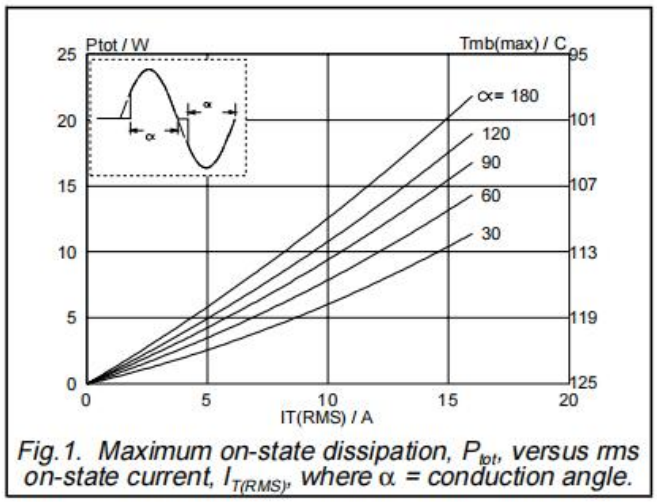

Fig.1. Maximum on-state dissipation, P_{tot}, versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

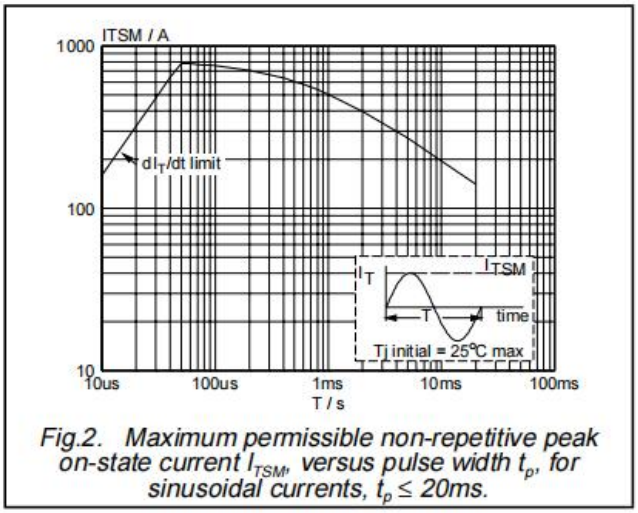

Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leq 20ms$.

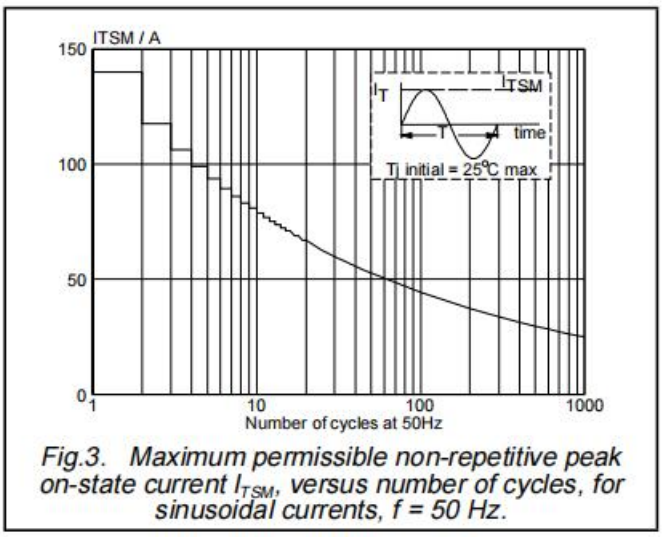

Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.

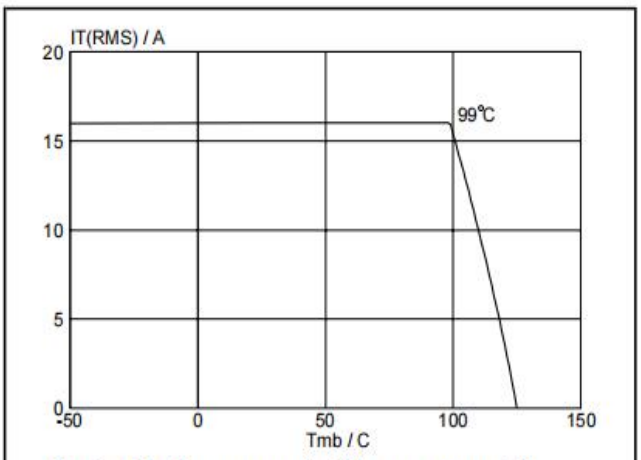

Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

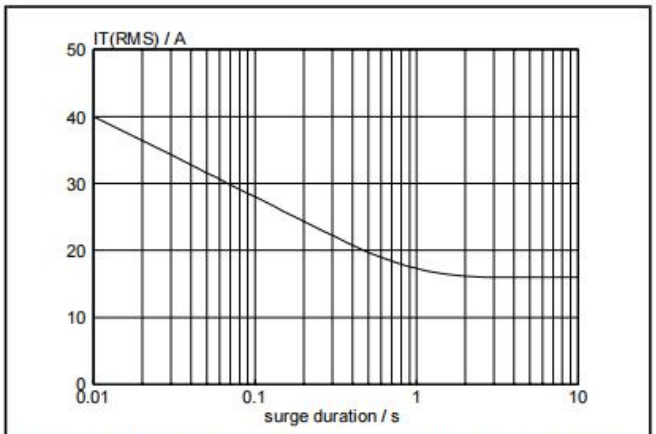

Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; $T_{mb} \leq 99°C$.

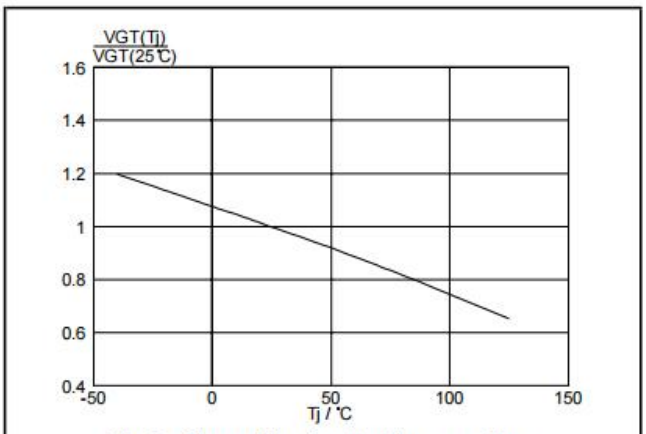

Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/ V_{GT}(25°C)$, versus junction temperature T_j.

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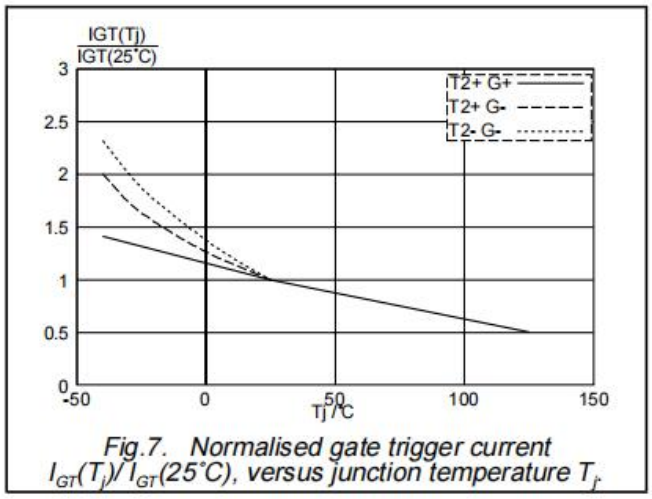

Fig.7. Normalised gate trigger current $I_{GT}(T_j)/ I_{GT}(25°C)$, versus junction temperature T_j.

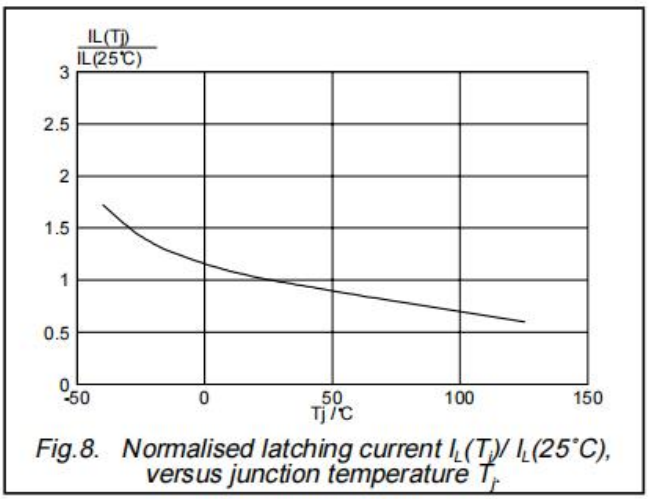

Fig.8. Normalised latching current $I_L(T_j)/ I_L(25°C)$, versus junction temperature T_j.

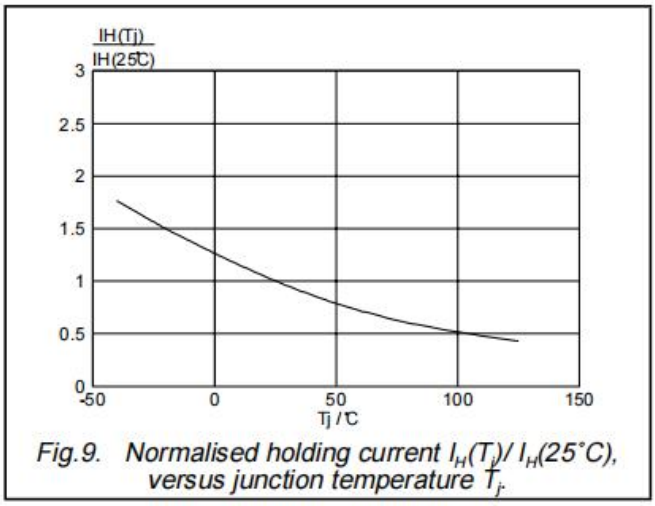

Fig.9. Normalised holding current $I_H(T_j)/ I_H(25°C)$, versus junction temperature T_j.

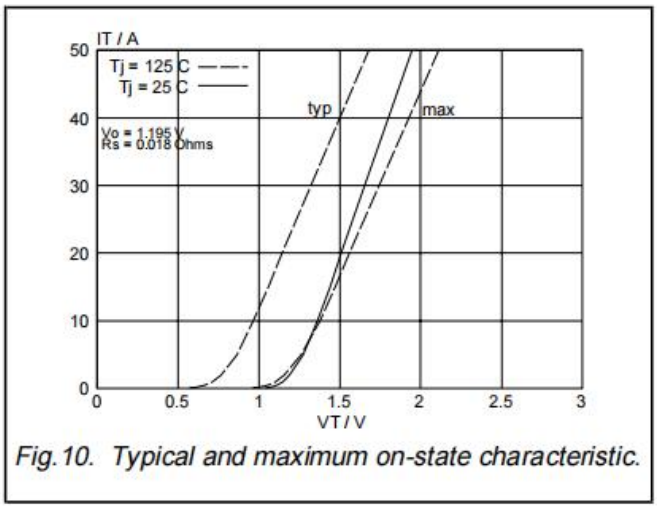

Fig.10. Typical and maximum on-state characteristic.

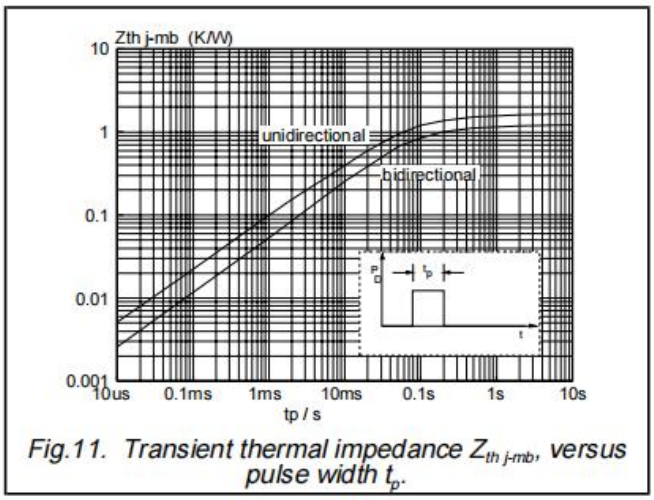

Fig.11. Transient thermal impedance $Z_{th\ j\text{-}mb}$, versus pulse width t_p.

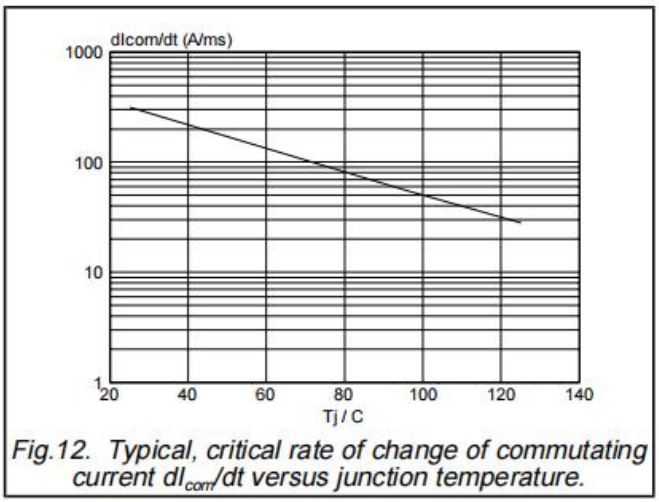

Fig.12. Typical, critical rate of change of commutating current dI_{com}/dt versus junction temperature.

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