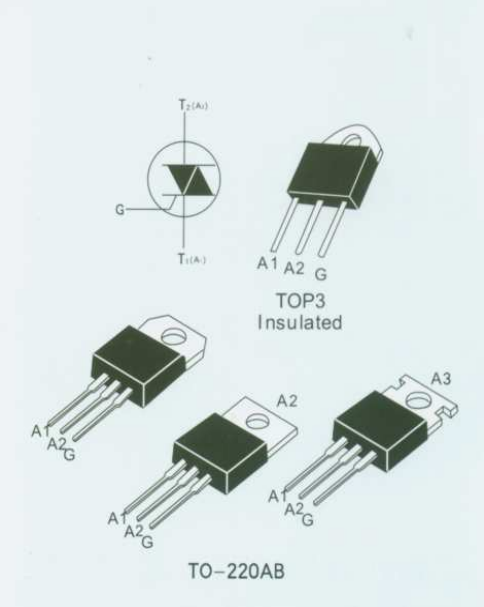
STANDARD

26A TRIACs

■ MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	26	A
$V_{(DRM)}/V_{RRM}$	600 to 800	V
$I_{GT(Q1)}$	20 to 50	mA



■ GENERAL DESCRIPTION

Available either in through-hole or surface and T25 mount packages, the BTA/BTB 24-25-26 triac series is suitable for general purpose AC power switching. They can be used as an ON/OFF function in applications such as static relays, heating regulation, water heaters, induction motor staring circuits…or for phase control operation in high power motor speed controllers, soft start circuits…

By using an internal ceramic pad, the BTA series provides voltage insulated tab (rated at 2500V RMS).

■ ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	TO-220AB TOP3 Ins. TO-220AB Ins.	Tc=100℃ Tc=90℃ Tc=75℃	26	A A
I_{TSM}	Non repetitive surge peak on-state current (full cycle, Tj initial=25℃)	F=50Hz F=60Hz	t=20ms t=16.7ms	250 260	A
I^2T	I^2T Value for fusing	tp=10ms		340	A^2s
dI/dt	Critical rate of rise of on-state current I_G=2 × I_{GT}, tr≤100ns	F=120Hz	Tj=125℃	50	A/μs
V_{DSM}/ V_{RSM}	Non repetitive surge peak off-state Voltage	tp=10ms	Tj=25℃	V_{DSM}/ V_{RSM} +100	V
I_{GM}	Peak gate current	tp=20μs	Tj=125℃	4	A
$P_{G(AV)}$	Average gate power dissipation		Tj=125℃	1	W
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			-40 to+150 -40 to+125	℃

■ STATIC CHARACTERISTICS

Tj=25℃ unless otherwise stated

Symbol	Test Conditions	Quadrant		Value		Unit
				C	B	
I_{GT}(1)	V_D=12V R_L=30Ω	I-II-III	MAX.	25	50	mA
		IV		50	100	
V_{GT}		ALL	MAX.	1.5		V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj=125℃	ALL	MIN.	0.2		V
I_H(2)	I_T=500mA		MAX.	20	80	mA
I_L	I_G=1.2I_{GT}	I-III-IV	MAX.	40	70	mA
		II		80	160	
V_{TM}(2)	I_{TM}=35A tp=380μs	Tj=25℃	MAX.	1.6		V
V_{t0}(2)	Threshold voltage	Tj=125℃	MAX.	0.85		V
R_d(2)	Dynamic resistance	Tj=125℃	MAX.	16		mΩ
I_{DRM}	V_{DRM}=V_{RRM}	Tj=25℃	MAX.	500		μA
I_{RRM}		Tj=125℃		3		mA

■ DYNAMIC CHARACTERISTICS

Symbol	Test Condition		Value	Unit
dV/dt(2)	V_D=67% V_{DRM} gate open Tj=125℃	MIN.	500	V/μs
(dV/dt)c(2)	(dI/dt)c=13.3A/ms Tj=125℃	MIN.	10	V/μs

Note1: minimum I_{GT} is guaranteed at 5% of I_{GT} max.

Note2: for both polarities of A2 referenced to A1.

■ THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-l)}$	Junction to case (AC)	TO-220AB	0.8	℃/W
		TOP3 Insulated	1.1	
		TO-220AB Insulated	1.7	
$R_{th(j-a)}$	Junction to ambient	TOP3 Insulated	50	℃/W
		TO-220AB	60	
		TO-220AB Insulated		

PERFORMANCE CURVES

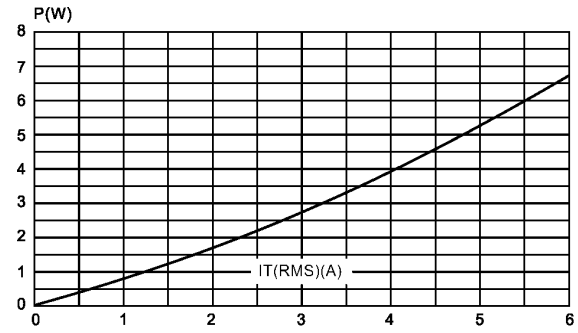


Fig.1. Maximum power dissipation versus RMS on-state current (full cycle)

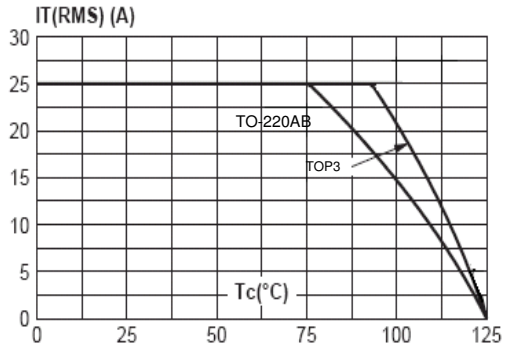


Fig.4. RMS on-state current versus ambient temperature (full cycle)

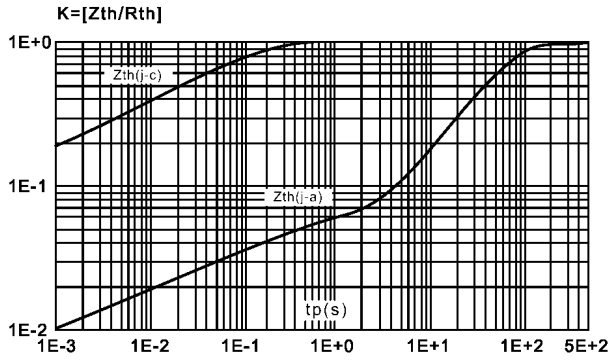


Fig.2. Relative variation of thermal impedance versus pulse duration

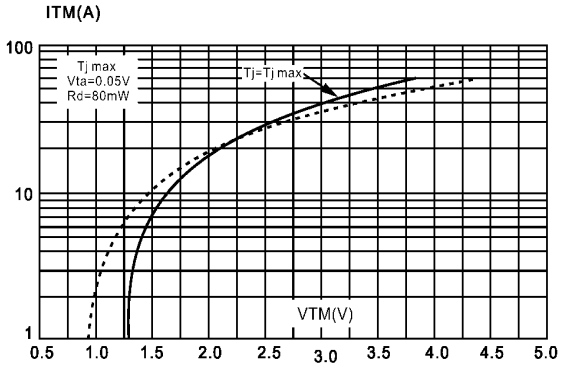


Fig.5. On-state characteristics (maximum values)

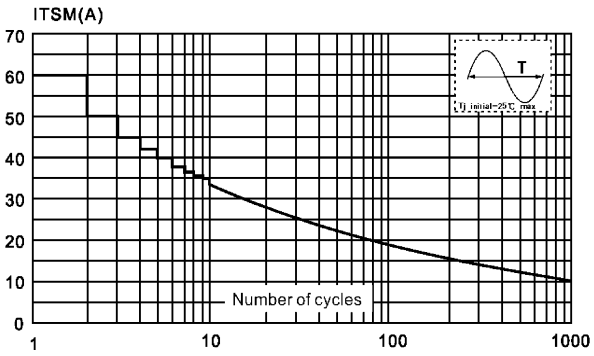


Fig.3. Surge peak on-state current versus number of cycles

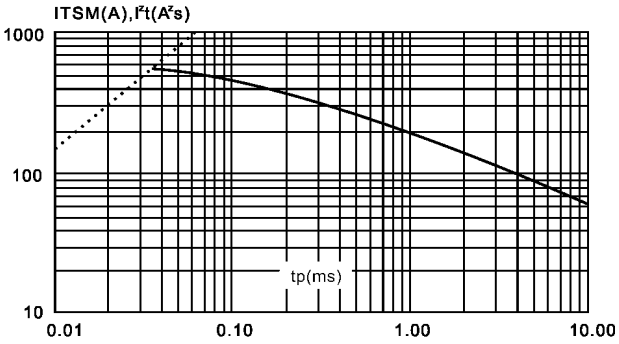


Fig.6. Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I^2t

PERFORMANCE CURVES

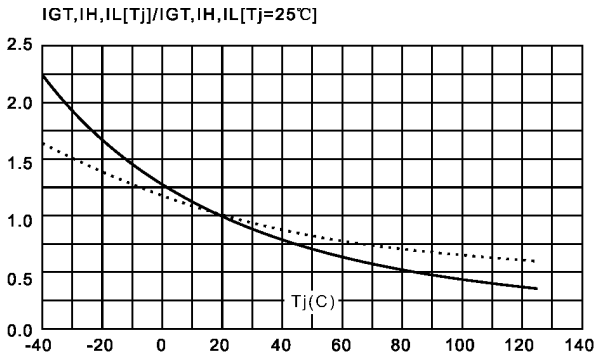


Fig.7. Relative variation of gate trigger current, holding current and latching current versus junction temperature T_j (typical values)

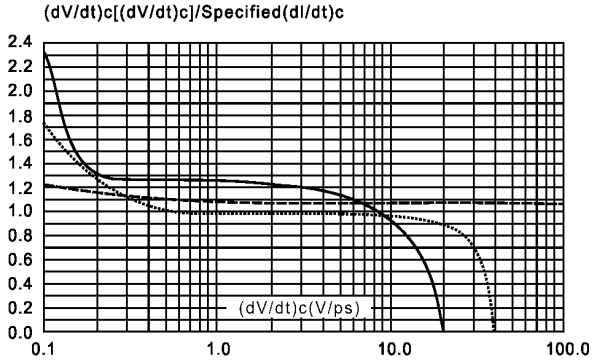


Fig.9. Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values), Snubberless & Logic Level Types

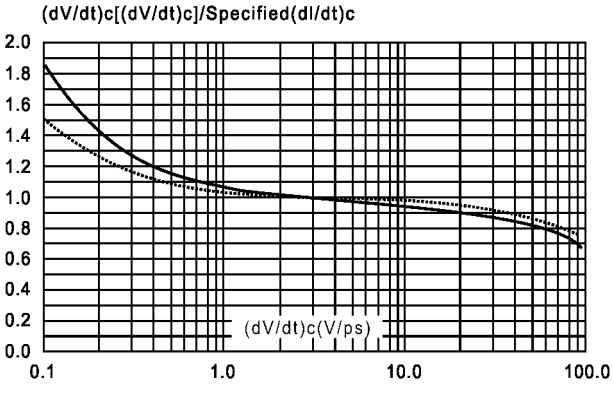


Fig.8. Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values), Standardl Types

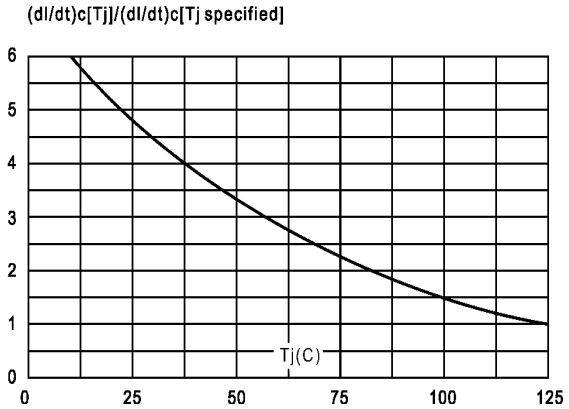
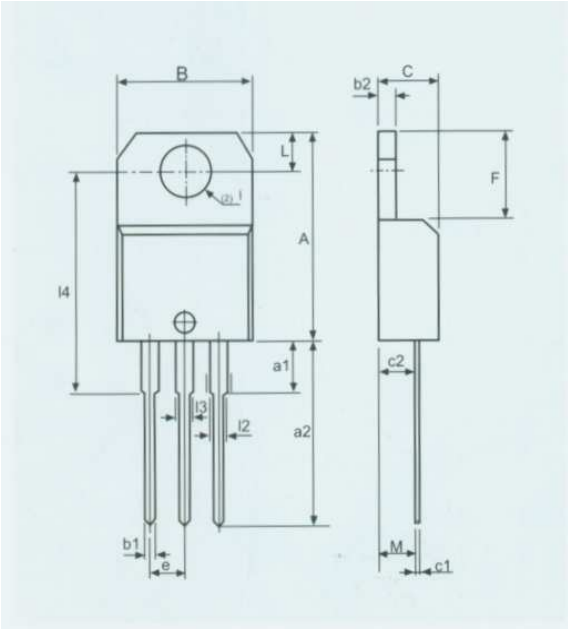


Fig.10. Relative variation of critical rate of decrease of main current versus junction temperature T_j

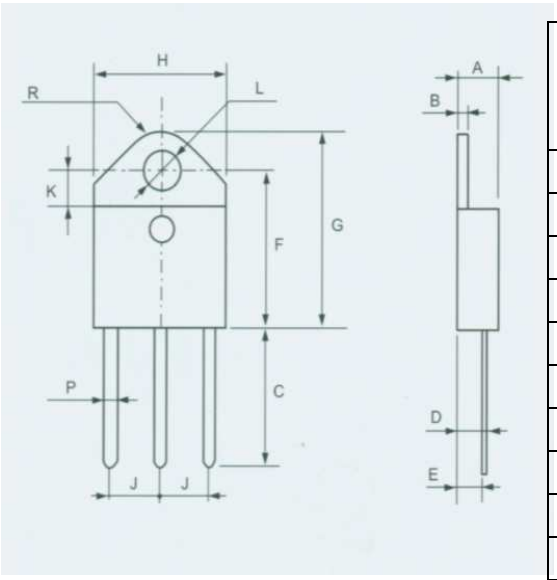
PACKAGE MECHANICAL DATA

TO-220A



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
I	3.75		3.85	0.147		0.151
I4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
I2	1.14		1.70	0.044		0.066
I3	1.14		1.70	0.044		0.066
M		2.60			0.102	

TOP3 (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.4		21.1	0.815		0.831
H	15.1		15.5	0..594		0.610
J	5.4		5.65	0.213		0.222
K	3.4		3.65	0.134		0.144
L	4.08		4.17	0.161		0.164
P	1.20		1.40	0.047		0.055
R		4.60			0.181	