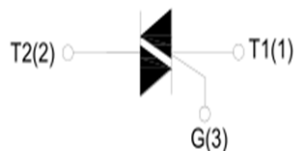


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Features

- ▣ IT(RMS): 40A
- ▣ VDRM VRRM:
600V/800V
1200V/1600V/1800V



BTA41. PDF

T0-3P

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value
$I_T(\text{RMS})$	RMS on-state current	40A
VDRM	Repetitive peak off-state voltage	600V/800V/1200V/1600V/1800V
VRRM	Repetitive peak reverse voltage	600V/800V/1200V/1600V/1800V
T_j	Operating junction temperature range	$\sim 40^\circ\text{C} \sim 125^\circ\text{C}$
T_{stg}	Storage junction temperature range	$\sim 40^\circ\text{C} \sim 150^\circ\text{C}$
VDSM	Non repetitive surge peak Off-state voltage	VDRM+100V
VRSM	Non repetitive peak reverse voltage	VRRM+100V
ITSM	Non repetitive surge peak on-state current (full cycle, F=50Hz)	400A
$I^2 t$	$I^2 t$ value for fusing ($t_p=10\text{ms}$)	$880\text{A}^2 \text{S}$
dI/dt	Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	$50\text{A}/\mu\text{s}$
IGM	Peak gate current	4A
PG(AV)	Average gate power dissipation	1W
PGM	Peak gate power	10W

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

Symbol	Test Condition	Quadrant	Value	
			BTA41	
IGT	VD=12V RL=33Ω	I - II - III	< 50mA	< 50mA
		IV	/	< 70mA
VGT		ALL	< 1.3V	< 1.5V
VGD	VD=VDRM Tj=125°C RL=3.3KΩ	ALL	> 0.2V	
IL	IG=1.2IGT	I - III	< 80mA	/
		II	< 100mA	/
		I - III - IV	/	< 90mA
		II		< 100mA
IH	IT=100mA		< 60mA	< 80mA
dV/dt	VD=2/3VDRM Gate Open Tj=125°C		> 1000V/μs	> 500V/μs
(dV/dt) _c	Without snubber Tj=125°C		> 20V/μs	> 30V/μs
VTM	ITM=60A tp=380μs (Tj = 25°C)		< 1.55V	
IDRM	VD=VDRMVR=VR	Tj = 25°C	< 10μA	
I _{RRM}	RM	Tj = 125°C	< 5mA	
Rth(j-c)	junction to case (AC)	T0-3P	0.9°C/W	

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

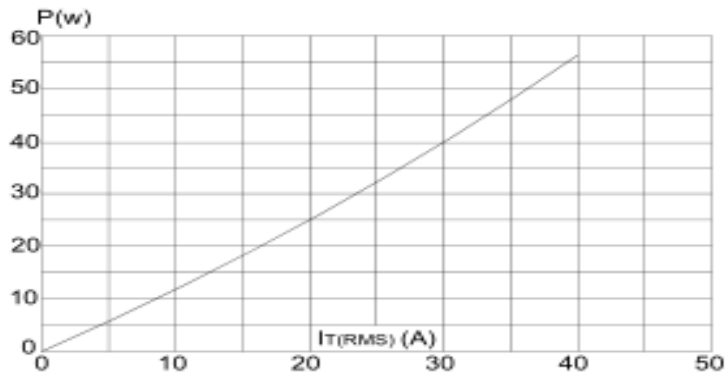


FIG.2: RMS on-state current versus case temperature

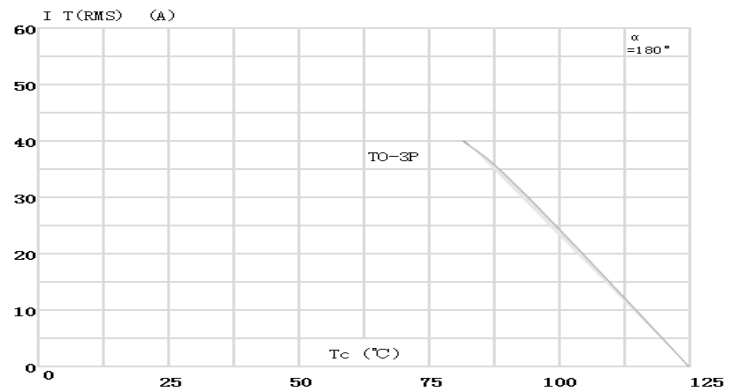


FIG.3: Surge peak on-state current versus number of cycles

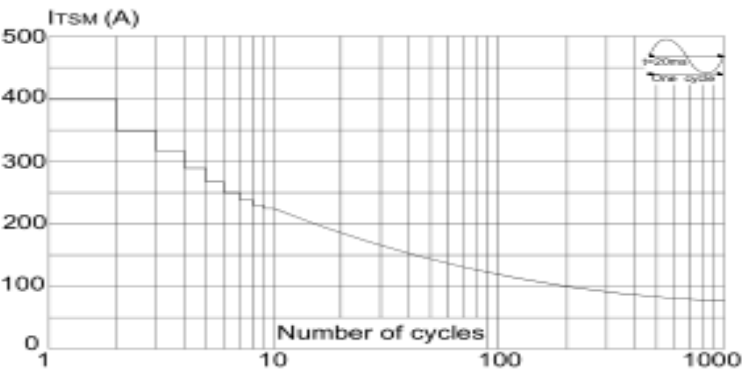


FIG.4: On-state characteristics (maximum values)

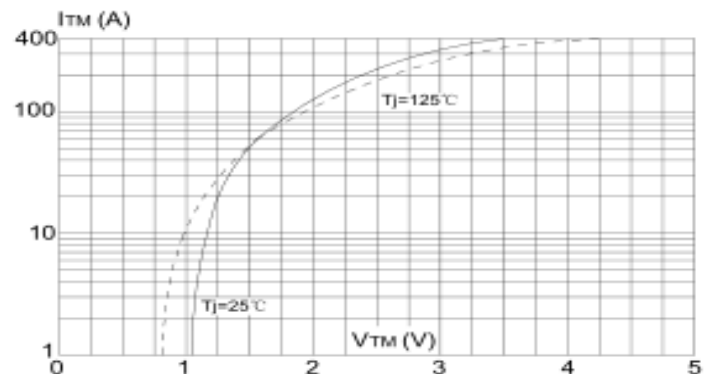


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

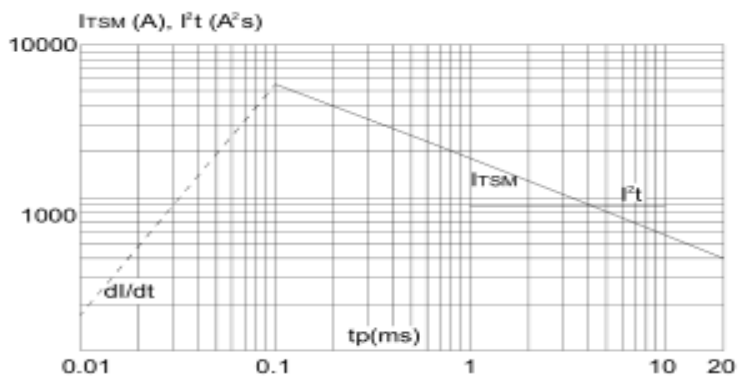
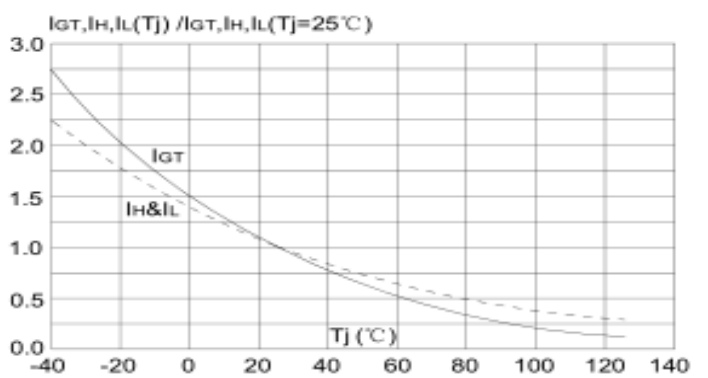


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



PACKAGE MECHANICAL DATA

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

