

## Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
$V_{DRM} V_{RRM}$	800	V
$V_{TM}$	1.55	V

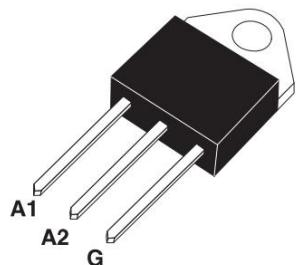
## Feature

With high ability to withstand the shock loading of large current, With high commutation performances, 3 quadrants products especially recommended for use on inductive load.

## Application

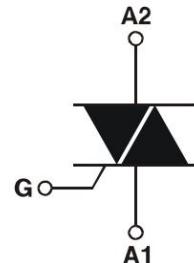
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

## Package

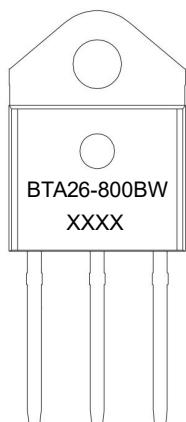


TO-3P Insulated

## Circuit diagram



## Marking



**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V <sub>DRM</sub>	800	V
Repetitive peak reverse voltage	V <sub>RRM</sub>	800	V
RMS on-state current	I <sub>T(RMS)</sub>	25	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I <sub>TSM</sub>	250	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	340	A
Critical rate of rise of on-state current (I <sub>G</sub> =2×I <sub>GT</sub> )	dI/dt	50	A/μs
Peak gate current	I <sub>GM</sub>	4	A
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Junction Temperature	T <sub>J</sub>	-40 ~ +125	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°C

**Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)**

Parameter	Symbol	Test Condition	Value		Unit
Gate trigger current	I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> = 33Ω	I - II - III	MAX.	50 mA
Gate trigger voltage	V <sub>GT</sub>		I - II - III	MAX.	1.3 V
Gate non-trigger voltage	V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125 °C R <sub>L</sub> =3.3KΩ	I - II - III	MIN.	0.2 V
latching current	I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	I - II - III	MAX.	100 mA
Holding current	I <sub>H</sub>	I <sub>T</sub> =100mA		MAX.	50 mA
Critical-rate of rise of commutation voltage	dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>j</sub> =125°C		MIN.	1000 V/μs

**STATIC CHARACTERISTICS**

Forward "on" voltage	V <sub>TM</sub>	I <sub>TM</sub> =35A tp=380μs	MAX.	1.55	V
Repetitive Peak Off-State Current	I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub>	T <sub>j</sub> =25 °C	MAX.	10 μA
Repetitive Peak Reverse Current	I <sub>RRM</sub>		T <sub>j</sub> =125 °C	MAX.	3 mA

**THERMAL RESISTANCES**

Thermal resistance	R <sub>th(j-c)</sub>	Junction to case(AC)	TYP.	0.9	°C/W
	R <sub>th(j-a)</sub>	Junction to ambient	TYP.	50	°C/W

## Typical Characteristics

FIG1 Maximum power dissipation versus RMS on-state current

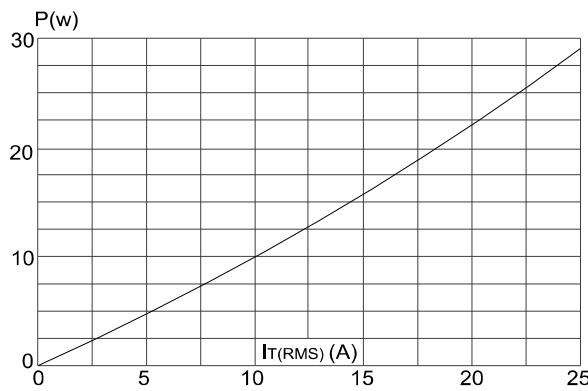


FIG3 Surge peak on-state current versus number of cycles

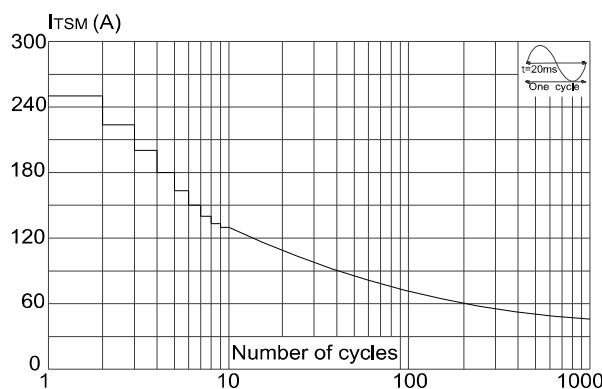


FIG5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $\text{d}I/\text{d}t < 100\text{A}/\mu\text{s}$ )

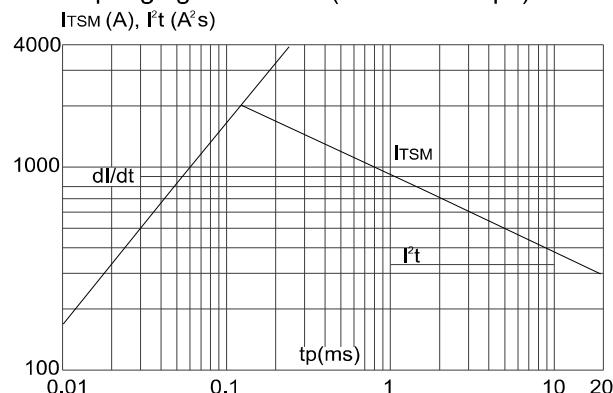


FIG2 RMS on-state current versus case temperature

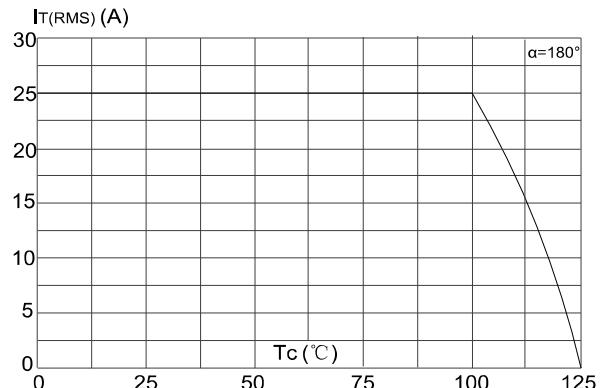


FIG4 On-state characteristics (maximum values)

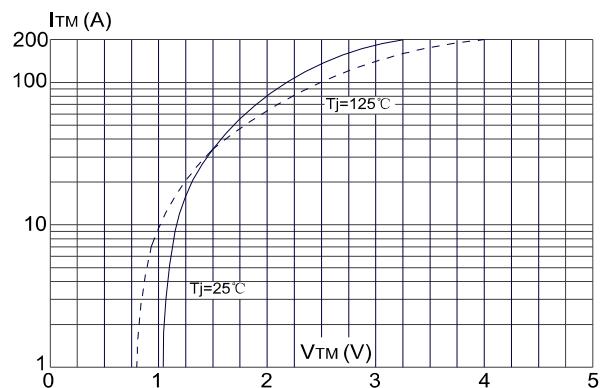
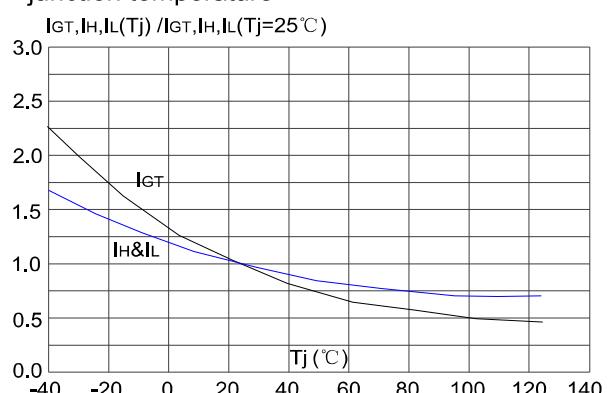
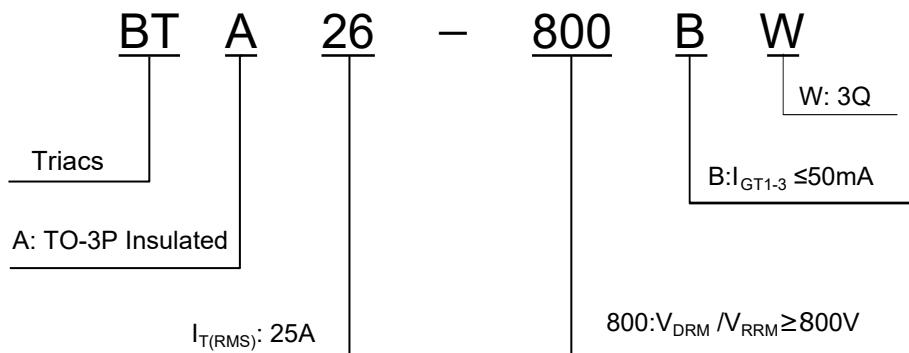


FIG6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



### Ordering Information



### TO-3P Insulated Package Information

The diagram shows a cross-section of a TO-3P insulated package. Key dimensions labeled include:  
 - Top width: 2-R0.5  
 - Top height: H  
 - Bottom height: G  
 - Side height: C  
 - Side width: L  
 - Lead length: J  
 - Lead width: K  
 - Lead thickness: P  
 - Lead pitch: F  
 - Lead height: E  
 - Lead radius: R  
 - Lead angle: φ Max 4.2mm  
 - Lead thickness: D  
 - Lead height: A  
 - Lead width: B

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	