

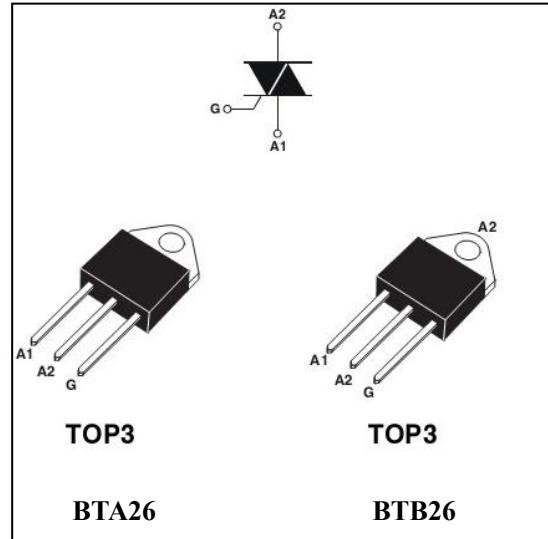
# Triac

## ● FEATURES

NPNPN Silicon bidirectional devices with five-layer structure; Single-sided slotting technology with independent intellectual property rights, countertop glass passivation process; Backside multilayer metallized electrode; Has a higher Blocking voltage and high temperature stability;

## ● APPLICATIONS

Vacuum cleaners, power tools and other motor speed controllers; Solid state relays; Heating controller (temperature regulation); Other phased circuits.



## ● ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

SYMBOL	PARAMETER		RATINGS	UNIT	
I <sub>T(RMS)</sub>	Non-repetitive peak on-state current	BTA BTB	T <sub>c</sub> =80°C T <sub>c</sub> =90°C	26	A
I <sub>TSM</sub>	RMS on-state current	F=50HZ	t=20ms	260	A
I <sup>2</sup> t	I <sup>2</sup> t Limit value	tp=10ms		340	A <sup>2</sup> S
di/dt	Critical Rate of Rise of Off-State Voltage at Commutation		T <sub>j</sub> =125°C	50	A/us
V <sub>DRM/V<sub>RRM</sub></sub>	Repetitive peak off-state voltage Repetitive peak reverse voltage		T <sub>j</sub> =25°C	800/1000	V
I <sub>GM</sub>	Peak Gate Current	tp=20us	T <sub>j</sub> =125°C	4	A
P <sub>G(AV)</sub>	Average Gate Power Dissipation		T <sub>j</sub> =125°C	1	W
T <sub>stg</sub> T <sub>j</sub>	Storage Temperature Range Junction Temperature		−40 to +150 −40 to +125	°C	

## ● ELECTRICAL CHARACTERISTICS (Third quadrant)

SYMBOL	PARAMETER/ TEST CONDITIONS	QUADRANT		RATINGS	UNIT
I <sub>GT</sub>	Trigger current V <sub>D</sub> =12V R <sub>L</sub> =100 Ω Trigger voltage	I II III	MAX	≤50	mA
V <sub>GT</sub>			MAX	1.5	V
V <sub>GD</sub>			MIN	0.2	V
I <sub>H</sub>	Holding current I <sub>T</sub> =0.5A		MAX	60	mA
I <sub>L</sub>	Latching Current I <sub>G</sub> =1.2I <sub>GT</sub>	MAX	60		mA
			100		
dv/dt	Critical Rate of Rise of Off-State Voltage V <sub>D</sub> =2/3V <sub>DRM</sub> T <sub>j</sub> =125°C	MIN	500		V/us
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation T <sub>j</sub> =125°C	MIN	10		V/us

## ● ELECTRICAL CHARACTERISTICS (Fourth quadrant)

SYMBOL	PARAMETER/ TEST CONDITIONS	QUADRANT		RATINGS	UNIT	
I <sub>GT</sub>	Trigger current V <sub>D</sub> =12V R <sub>L</sub> =100 Ω	I II III	MAX	I 、 II 、 III	mA	
				≤50		
V <sub>GT</sub>	Trigger voltage	IV	MAX	1.5		
				0.2		
I <sub>H</sub>	Holding current I <sub>T</sub> =0.5A		MAX	60	mA	
I <sub>L</sub>	Latching Current I <sub>G</sub> =1.2I <sub>GT</sub>	MAX	60		mA	
			100			
dv/dt	Critical Rate of Rise of Off-State Voltage V <sub>D</sub> =2/3V <sub>DRM</sub> T <sub>j</sub> =125°C	MIN	500		V/us	
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation T <sub>j</sub> =125°C	MIN	10		V/us	

## ● STATIC CHARACTERISTICS

SYMBOL	PARAMETER/ TEST CONDITIONS			RATINGS	UNIT
$V_{TM}$	On-state voltage $I_{TM}=52A$	$T_j=25^\circ C$	MAX	1.50	V
$V_{T0}$	Threshold Voltage	$T_j=125^\circ C$	MAX	0.85	V
$R_d$	Dynamic Resistance	$T_j=125^\circ C$	MAX	9.2	$m\Omega$
$I_{DRM}$ $I_{RRM}$	Repetitive Peak Off-State Current	$T_j=25^\circ C$	MAX	10	uA
		$T_j=125^\circ C$		2	mA
$R_{th(j-c)}$	Thermal resistance, junction to case	BTA		0.9	°C/W
		BTB		0.6	

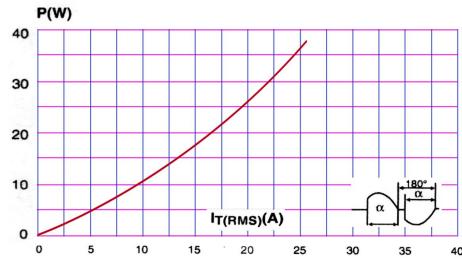


FIG.1:Maximum power dissipation versus RMS on-state current

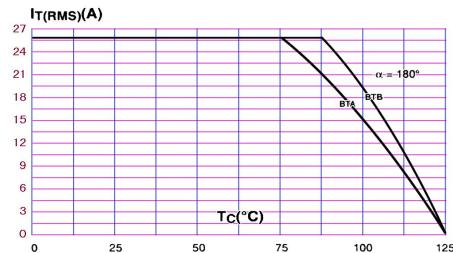


FIG.2:RMS on-state current versus case temperature

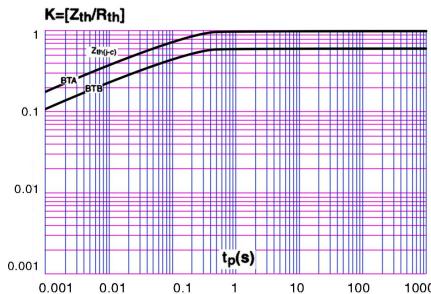


FIG.3:Relative variation of thermal impedance versus pulse duration

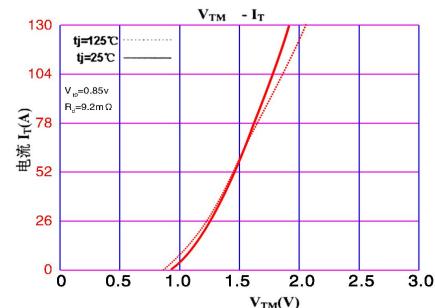


FIG.4:On-state characteristics

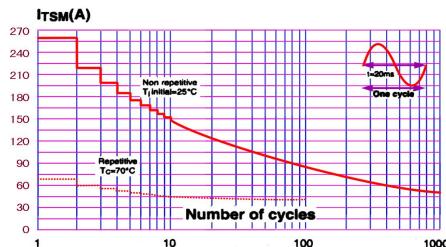


FIG.5:Surge peak on-state current versus number of cycles

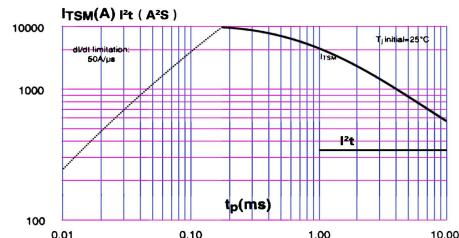


FIG.6:Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $dI/dt < 50\text{A}/\mu\text{s}$ )

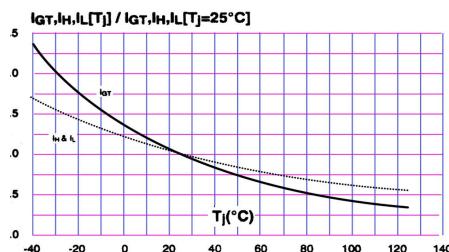
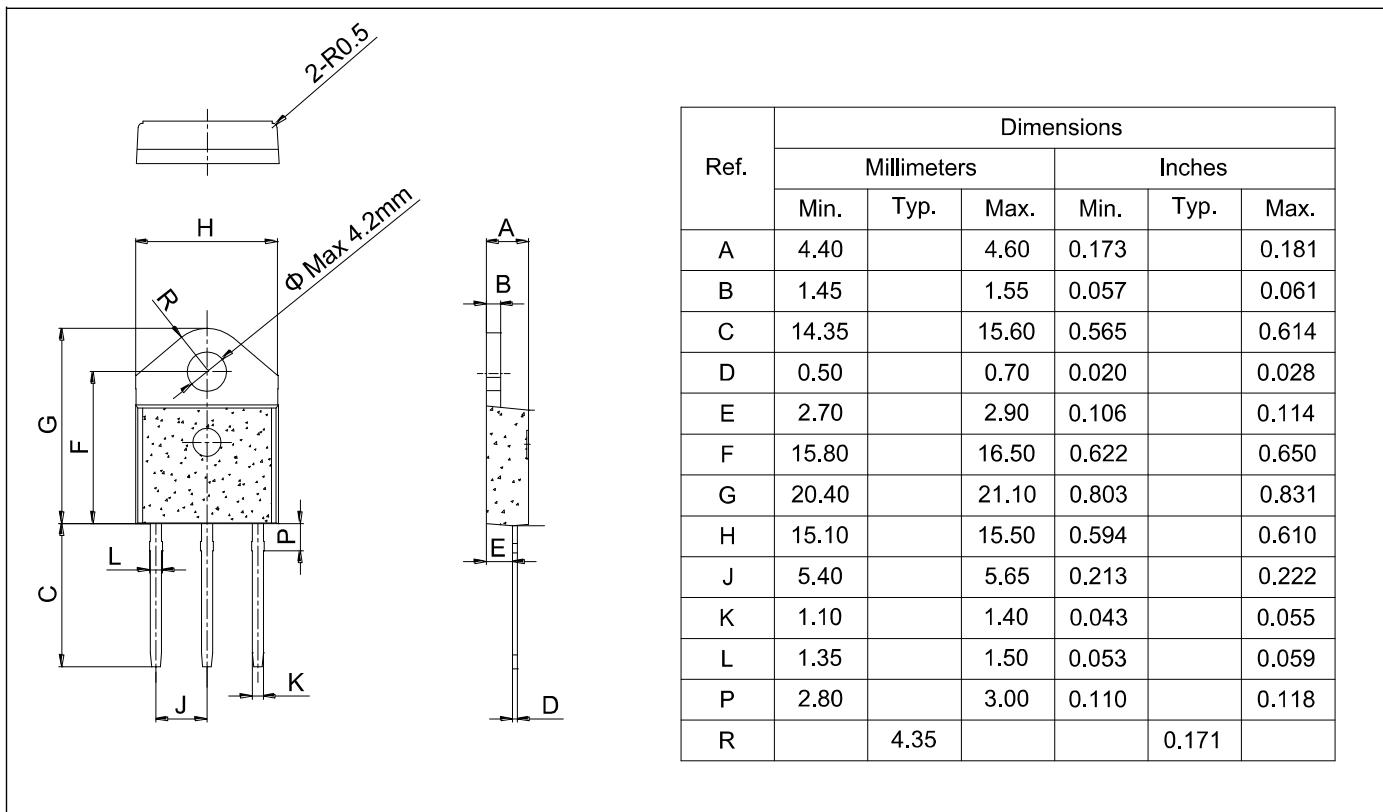


FIG.7:Relative variations of gate trigger current,holding current and latching current versus junction temperature

PACKAGE OUTLINE

TOP3



The technical drawing illustrates the package outline with various dimensions labeled A through R. The top view shows a rectangular body with a central cavity, a lead-free edge at the bottom, and two lead frames on the sides. The side view shows the height of the package and the thickness of the lead frames. Specific dimensions include: A=4.40, B=1.45, C=14.35, D=0.50, E=2.70, F=15.80, G=20.40, H=15.10, J=5.40, K=1.10, L=1.35, P=2.80, and R=4.35. A note indicates a maximum hole diameter of  $\phi$  Max 4.2mm. A lead frame detail shows a radius of 2-R0.5.

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	