

DESCRIPTION

BTA100-BW Series Triac provides good commutation capability, which is suitable for general purpose AC switching and voltage regulation, and can be used in static relays, heating regulation, induction motor starting circuits. From all three pins to external heatsink, BTA100-BW Series Triac provides an insulation voltage of 2500 VRMS.

Using TO-275 Insulated Package

产品特点

全循环交流导通；高于1600V阻断电压

I_{GT}一致性好，档级覆盖面广

换向性能好，抗干扰能力强

良好的产品可靠性和产品品质

主要用途

自动化电气设备；开关电源；无功补偿；复合开关

交流电开关；交流/直流电源变换；电力模块

工业和家庭电加热器的温度控制；大功率路灯

电机马达调速控制电路

以及三相交流输入的高压电路、变频电路

采用 TO-275 绝缘型封装

Product Model Reference & Naming【产品型号参考及型号命名】

3-Quadrants TRIACs (Insulated Package)

100A	产品型号列表、种类区分、型号对照电压值				I _{GT} I - II - III
	1000V	1200V	1600V	1800V	
TO-275	BTA100-1000BW	BTA100-1200BW	BTA100-1600BW	BTA100-1800BW	≤50mA
说明	常规品种	高压品种	高压品种	未量产	

H



HAOHAI
ELECTRONICS CO., LTD.

BT



Bi-directional Triode
三端双向可控硅开关

A



A: 绝缘型封装 Insulated
B: 不绝缘型封装 Non Insulated

100



100A

1600



1000=1000V
1200=1200V
1600=1600V
1800=1800V

B



I_{GT}
≤50mA

W



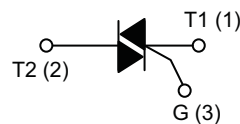
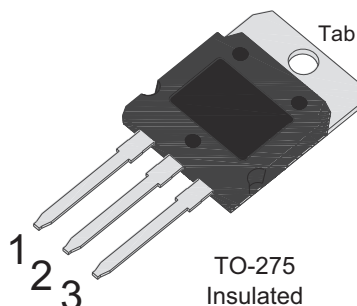
3Q-TRIACs

PINNING: Insulated Package

TO-275 绝缘型封装

Pin 管脚排列	Symbol 对应极性	Description 极性含义
1	T1	第一阳极
2	T2	第二阳极
3	G	门-控制极
4	Tab	散热片

Pin Polarity Circuit Diagram
脚位与极性 电路符号表示



■ ABSOLUTE MAXIMUM RATINGS

SYMBOL	Signification in Symbol		Test Conditions	Value	Unit
$I_{T(RMS)}$	RMS On-state Current	TO-275 (Ins)	$T_C=70^{\circ}\text{C}$	100	A
I_{TSM}	Non Repetitive Surge Peak on-state Current		$t_p=20\text{mS}$	1100	
I_{GM}	Peak Gate Current		$T_j=125^{\circ}\text{C}$	8	
I^2t	I^2t Value for Fusing Consideration		$t_p=10\text{mS}$	5500	A^2s
di/dt	Critical rate of rise of on-state current ($I_G=2\times I_{GT}$)		I - II -III	100	$\text{A}/\mu\text{s}$
V_{DRM}	Repetitive peak off-state Voltages	见型号对照列表	$T_j=25^{\circ}\text{C}$	1000~1800	V
V_{RRM}	Repetitive peak Reverse Voltages		$T_j=25^{\circ}\text{C}$		
V_{DSM}	Non Repetitive Surge peak off-state Voltages		$t_p=10\text{mS}, T_j=25^{\circ}\text{C}$	$V_{DRM}+100$	
V_{RSM}	Non Repetitive peak Reverse Voltages		$t_p=10\text{mS}, T_j=25^{\circ}\text{C}$	$V_{RRM}+100$	
$P_{G(AV)}$	Average gate power dissipation		$T_j=25^{\circ}\text{C}$	2	W
P_{GM}	Peak gate power		$t_p=20\mu\text{s}, T_j=25^{\circ}\text{C}$	10	
T_j	Operating Junction Temperature Range			-40 ~ +125	$^{\circ}\text{C}$
T_{stg}	Storage Junction Temperature Range			-40 ~ +150	
$R_{th(j-c)}$	Junction to Case (AC)	TO-275 (Ins)		0.30	$^{\circ}\text{C}/\text{W}$

■ 绝缘电阻特征: ISOLATION LIMITING VALUE & CHARACTERISTIC ($T_{hs}=25^{\circ}\text{C}$ unless otherwise specified)

■ STATIC CHARACTERISTICS

SYMBOL	Parameter & Test Conditions	Quadrant		BTA100-BW	Unit
I_{GT}	$V_D=12\text{V}, R_L=33\Omega$	I - II - III	Max.	50	mA
I_H	$I_T=100\text{mA}$	ALL	Max.	100	
I_L	$I_G=1.2 I_{GT}$	I - II - III	Max.	180	
dV/dt	$V_D=2/3V_{DRM}$ Gate open	$T_J=125^{\circ}\text{C}$	Min.	1500	$\text{V}/\mu\text{s}$
V_{GT}	$V_D=12\text{V}, R_L=33\Omega$	I - II - III	Max.	1.3	V
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_J=125^{\circ}\text{C}$	I - II - III	Min.	0.2	
V_{TM}	$I_{TM}=150\text{A}, t_p=380\mu\text{s}$	$T_J=25^{\circ}\text{C}$	Max.	1.5	
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_J=25^{\circ}\text{C}$	Max.	20	μA
I_{RRM}		$T_J=125^{\circ}\text{C}$	Max.	12	mA

Electrical characteristics & Typical characteristics (电气特性与典型特征)

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

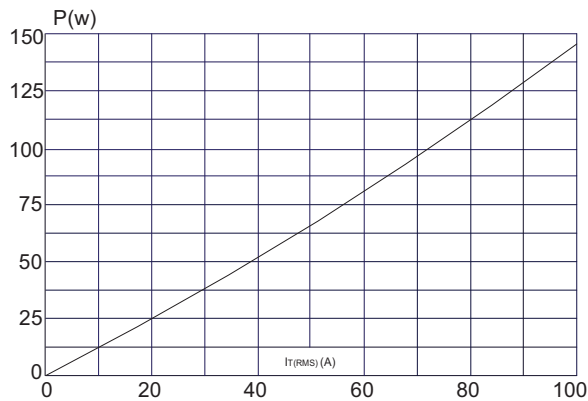


FIG.2: RMS on-state current versus case temperature

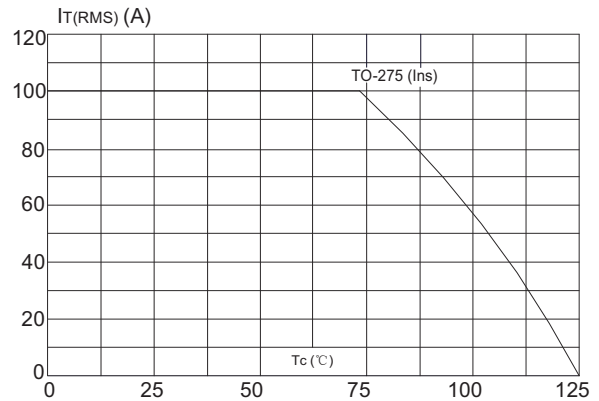


FIG.3: Surge peak on-state current versus number of cycles

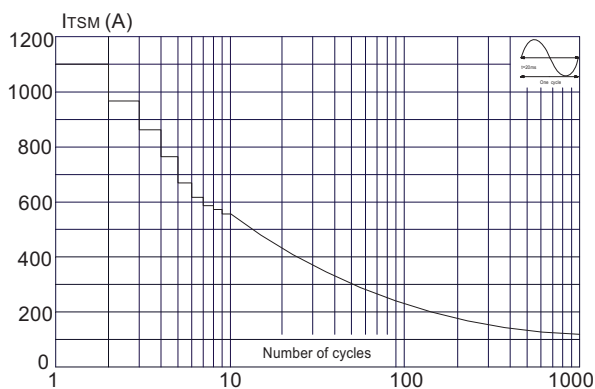


FIG.4: On-state characteristics (maximum values)

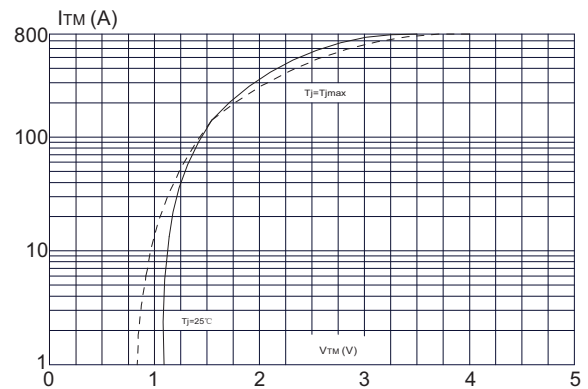


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I^2 t$ ($dI/dt < 100A/\mu s$)

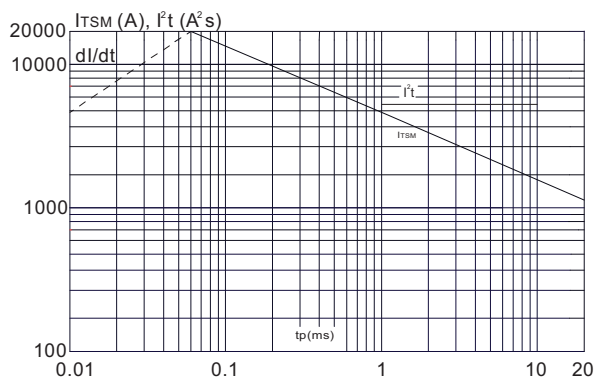
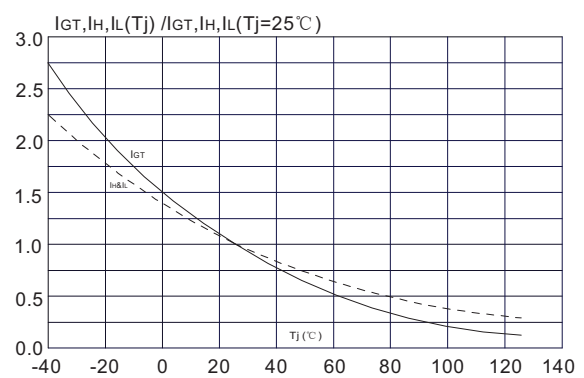
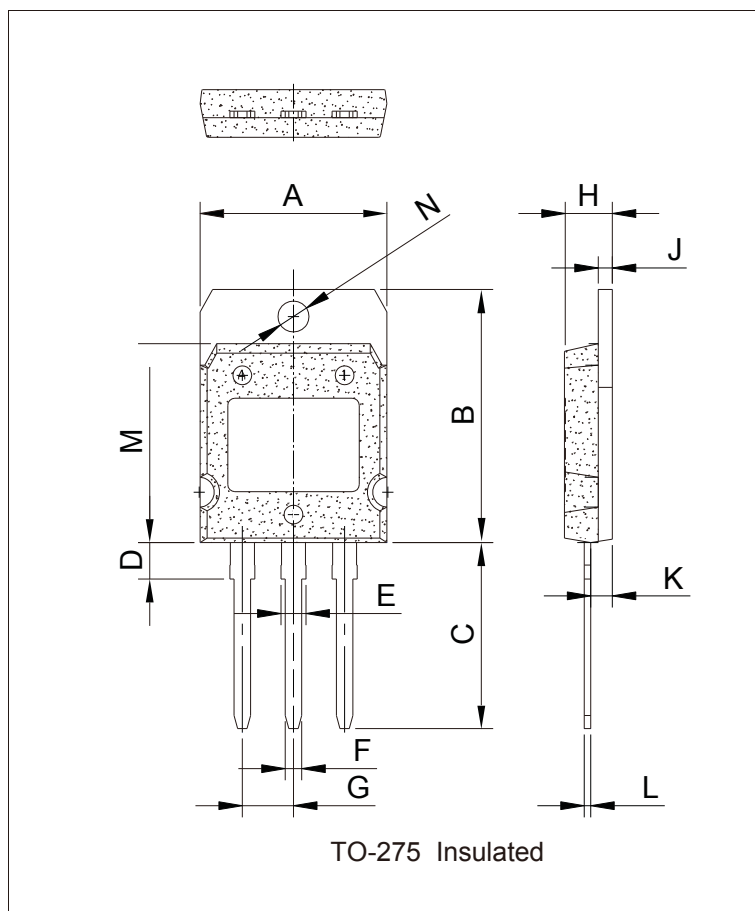


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

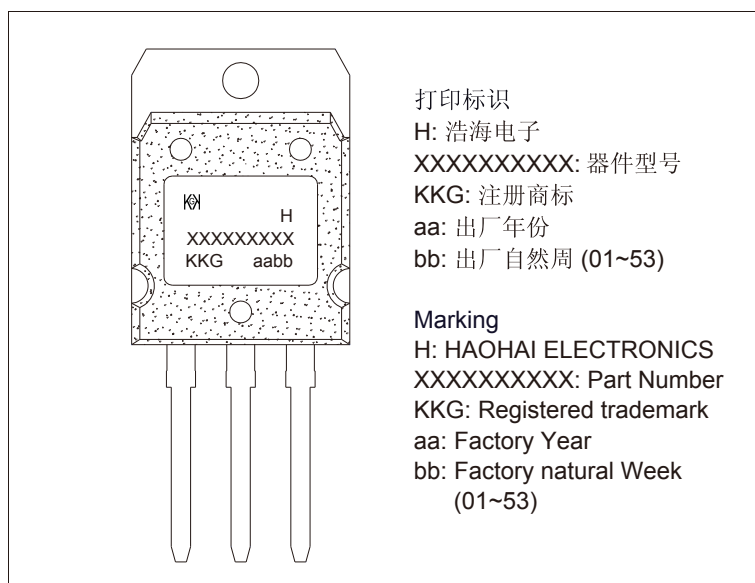


TO-275 PACKAGE MECHANICAL DATA (mm & inch)



TO-275 封装尺寸数据 (毫米与英寸对照)

REF.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	19.7	20.1	0.776	0.791
B	26.9	27.3	1.059	1.075
C	19.4	20.4	0.764	0.803
D	3.80	4.00	0.150	0.157
E	2.56	2.76	0.101	0.109
F	1.66	1.86	0.065	0.073
G	5.45 Typ.		0.215 Typ.	
H	5.05	5.50	0.199	0.217
J	1.45	1.55	0.057	0.061
K	2.20	2.40	0.087	0.094
L	0.60	0.80	0.024	0.031
M	21.2	21.4	0.835	0.843
ΦN	3.20	3.40	0.126	0.134



包装规格

条管装、纸盒装
每管25只
每盒375只
每箱2250只

Packaging Specifications

Plastic tube
25Pcs/Tub
375cs/BOX
2250Pcs/Cartons

Manufacturers version information
2010-09-01, KKG™ Product Data-1.0
2013-04-25, KKG™ Product Data-1.1
2016-12-10, KKG™ Product Data-1.2



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