

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

4-Quadrants TRIACs

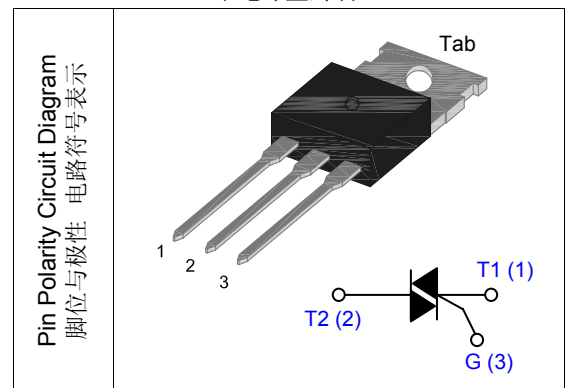
12A Amperes	产品型号列表、种类区分、型号对照电压值					型号后缀 触发电流 I - II - III
	600V	700V	800V	900V	1000V	
四象限品种 非绝缘型封装 4-Quadrants Non insulated	BT138-600D	BT138-700D	BT138-800D	BT138-900D	BT138-1000D	D ≤ 5mA
	BT138-600E	BT138-700E	BT138-800E	BT138-900E	BT138-1000E	E ≤ 10mA
	BT138-600F	BT138-700F	BT138-800F	BT138-900F	BT138-1000F	F ≤ 25mA
	BT138-600	BT138-700	BT138-800	BT138-900	BT138-1000	≤ 35mA
	BT138-600G	BT138-700G	BT138-800G	BT138-900G	BT138-1000G	G ≤ 50mA
说明	常规品种	未量产	高压品种	未量产	未量产	

<u>H</u>	<u>BT</u>	<u>138</u>	<u>-</u>	<u>- 800</u>	<u>E</u>
厂商	品种表示	电流表示	封装外形表示	电压表示	触发电流表示
HAOHAI ELECTRONICS CO.,LTD.	BT: Bi-directional Triode 三端双向可控硅开关 所有BT字头的产品 均为非绝缘型品种	131=1A 132=1A 134=4A(SOT82) 134=4A(220AB) 136=4A 137=8A 138=12A 139=16A	无字母: TO-220AB X: TO-220F, SOT186A F: TO-220F, SOT186A S: TO-252 DPAK or SOT428 B: D ² PAK TO-263 W: SOT-223	200=200V 400=400V 600=600V 700=700V 800=800V 900=900V 1000=1000V 1200=1200V	IGT I II III IV D 5 5 5 10 E 10 10 10 25 F 25 25 25 70 35 35 35 70 G 50 50 50 100 除非另有说明

PINNING: TO-220AB or TO-220C (SOT78) 【3引脚直插半塑封】

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

不绝缘型封装: 4=2=Tab



■ ABSOLUTE MAXIMUM RATINGS

SYMBOL 符号表示	Signification in Symbol 器件参数字母符号含义	Test Conditions 测试条件说明	Value 数值	Unit 单位	
$I_{T(RMS)}$	RMS On-state Current (full sine wave)	$T_C=99^{\circ}C$	12	A	
I_{TSM}	Non Repetitive Surge Peak on-state Current (full cycle, $T_J=25^{\circ}C$)	$f=60Hz, t=16.7mS$	105		
		$f=50Hz, t=20mS$	95		
I_{GM}	Peak Gate Current	$tp=20\mu s, T_J=125^{\circ}C$	2		
I^2t	I^2t Value for Fusing Consideration	$tp=10mS, T_J=25^{\circ}C$	45	A^2ses	
di/dt	Repetitive rate of rise of on-state current after triggering $I_G=2 \times I_{GT}, tr \leq 100nS, f=120Hz, T_J=125^{\circ}C$	I - II - III	50	$A/\mu s$	
		IV	10		
V_{DRM}	Repetitive peak off-state Voltages 见型号对照列表	$T_J=25^{\circ}C$	600~1000	V	
V_{RRM}	Repetitive peak Reverse Voltages 见型号对照列表	$T_J=25^{\circ}C$			
V_{DSM}	Non Repetitive Surge peak off-state Voltages	$tp=10mS, T_J=25^{\circ}C$			$V_{DRM}+100$
V_{RSM}	Non Repetitive peak Reverse Voltages	$tp=10mS, T_J=25^{\circ}C$			$V_{RRM}+100$
$P_{G(AV)}$	Average gate power dissipation	$T_J=25^{\circ}C$	0.5	W	
P_{GM}	Peak gate power	$tp=20\mu s, T_J=125^{\circ}C$	5		
T_J	Operating Junction Temperature Range		-40 ~ +125	$^{\circ}C$	
T_{stg}	Storage Junction Temperature Range		-40 ~ +150		
$R_{th(J-C)}$	Thermal Resistance Junction to mounting base	Full Cycle	1.5	$^{\circ}C/W$	

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

■ STATIC CHARACTERISTICS

SYMBOL 符号表示	Parameter & Test Conditions 符号含义 及 参数测试条件说明			BT138 Series					Unit 单位
				D	E	F	-	G	
I_{GT}	$V_D=12V, R_L=30\Omega$	I - II - III	Max.	5	10	25	35	50	mA
		IV	Max.	10	25	70	70	100	
I_H	$I_T=100mA$	ALL	Max.	10	25	30	40	60	mA
I_L	$I_G=1.2 I_{GT}$	I - III - IV	Max.	15	30	40	50	60	
		II	Max.	20	40	60	70	90	
dV/dt	$V_D=67\%V_{DRM}$ gate open	$T_J=125^{\circ}C$	Min.	5	10	50	100	200	$V/\mu s$
$(dV/dt)C$	$(di/dt)C=5.4A/mS$	$T_J=125^{\circ}C$	Min.	1	2	5	8	10	
V_{GT}	$V_D=12V, R_L=30\Omega$	ALL	Max.	1.3					V
V_{GD}	$V_D=V_{DRM}, R_L=3.3K\Omega, T_J=125^{\circ}C$	ALL	Min.	0.2					
V_{TM}	$I_{TM}=15A, tp=380\mu s$	$T_J=25^{\circ}C$	Max.	1.65					
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_J=25^{\circ}C$	Max.	5					μA
I_{RRM}		$T_J=125^{\circ}C$	Max.	1					mA

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

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

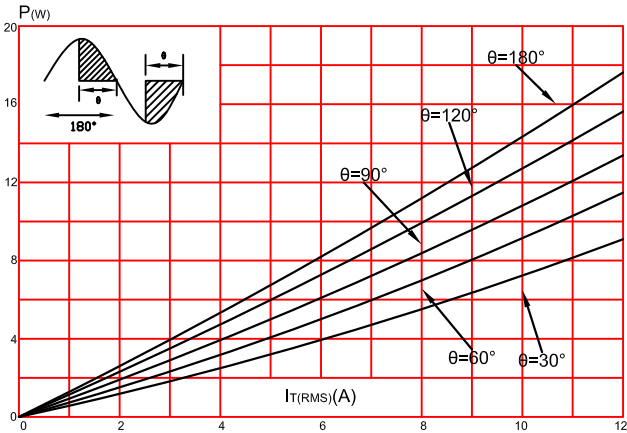


FIG.2: RMS on-state current versus case temperature (full cycle)

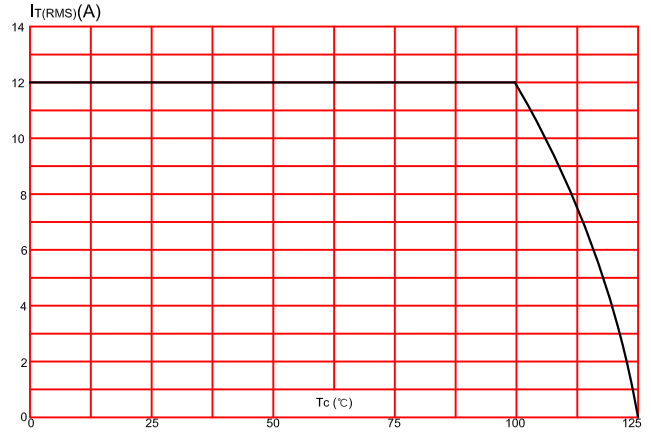


FIG.3: On-state characteristics (maximum values).

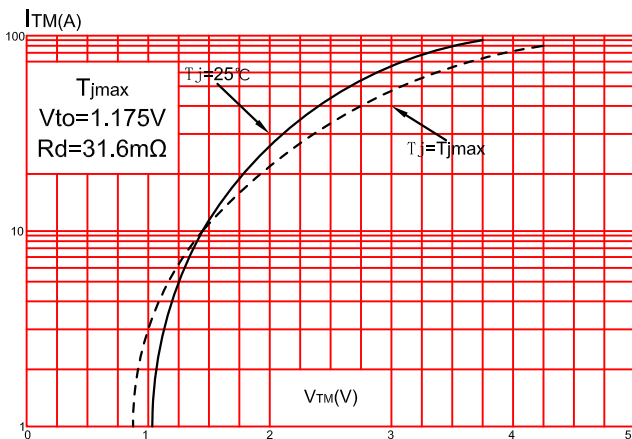


FIG.4: Surge peak on-state current versus number of cycles.

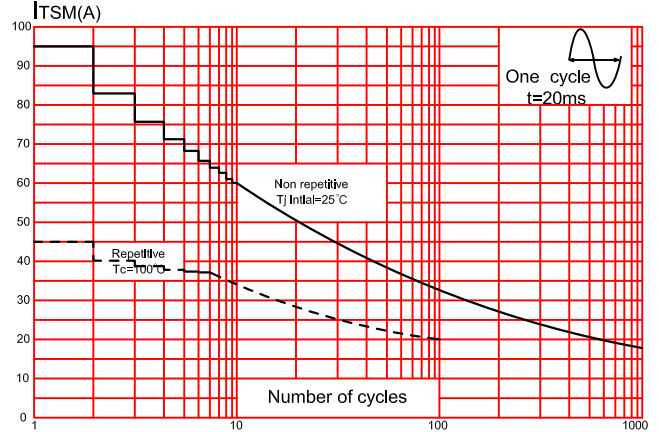


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms, and corresponding value of I^2t.

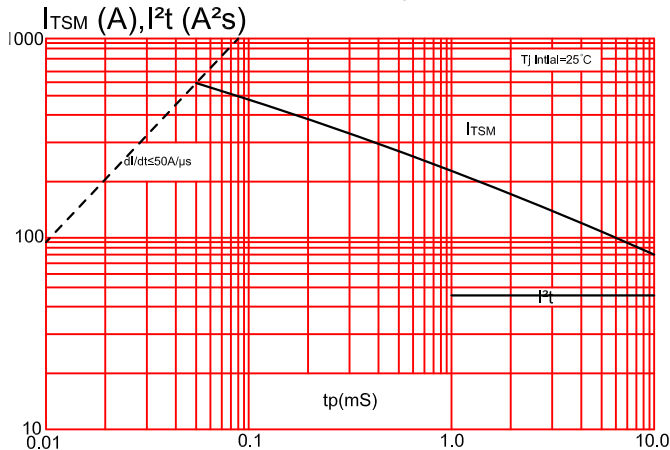
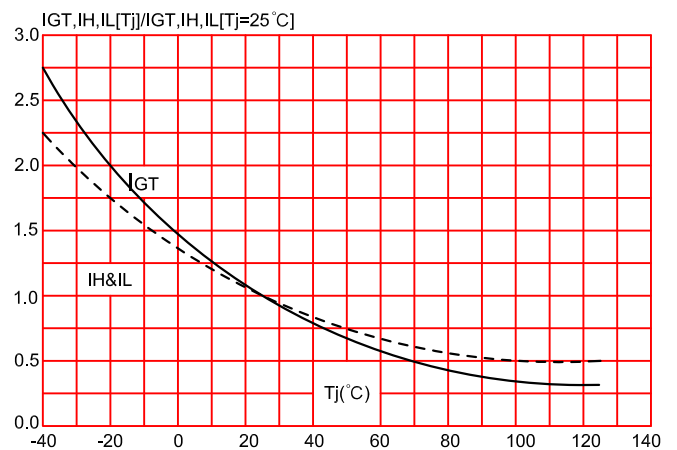
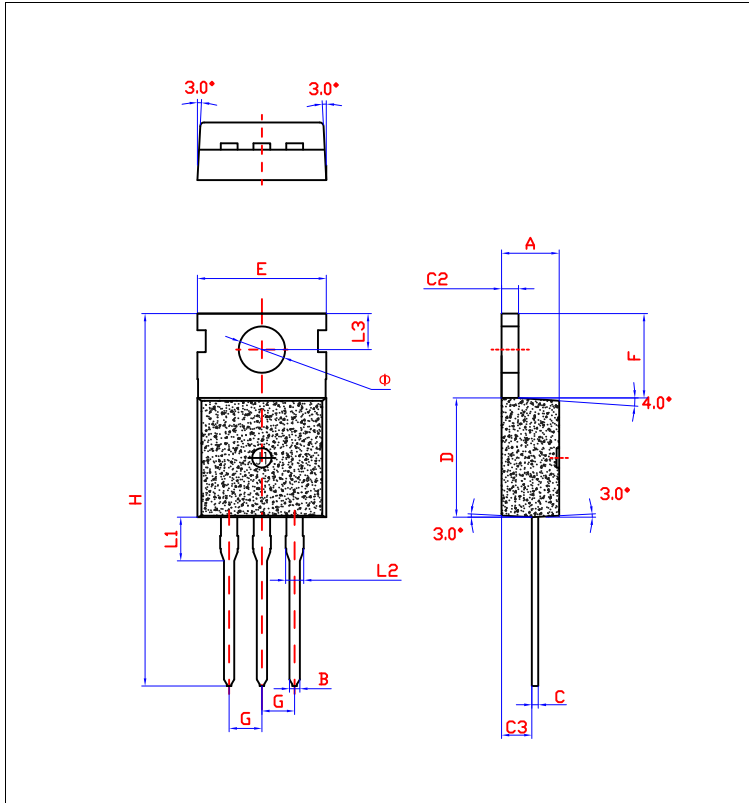


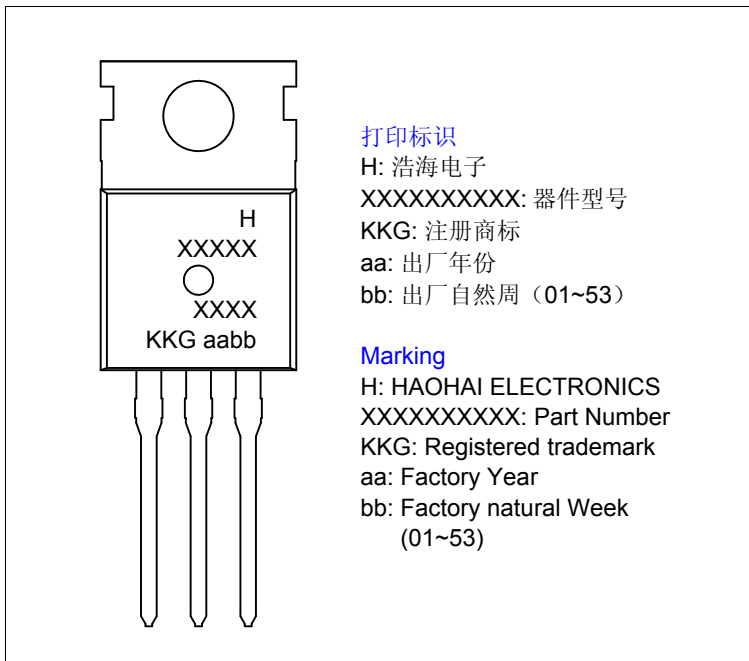
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



PACKAGE MECHANICAL DATA (mm & inch)
TO-220AB (TO-220C 或 SOT78) 封装尺寸数据 (毫米与英寸对照)



REF	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	1.181
B	0.70	0.90	0.027	0.035
C	0.45	0.60	0.018	0.024
C2	1.23	1.32	0.048	0.052
C3	2.20	2.60	0.086	0.102
D	8.90	9.90	0.350	0.390
E	9.90	10.3	0.390	0.406
F	6.30	6.90	0.248	0.272
G	2.54		0.100	
H	28.0	29.8	11.0	11.70
L1	3.20		0.126	
L2	1.14	1.70	0.045	0.067
L3	2.65	2.95	0.104	0.116
Φ	3.60		0.142	



包装规格
条管装、纸盒装
每管50只
每盒1000只
每箱5000只

Packaging Specifications
50Pcs/Tub
1000Pcs/BOX
5000Pcs/Cartons

Manufacturers version information
2006-02-25, KKG™ Product Data-1.0
2010-04-01, KKG™ Product Data-1.1
2014-07-25, KKG™ Product Data-1.2



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