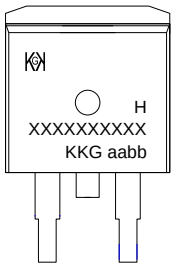
DESCRIPTION:

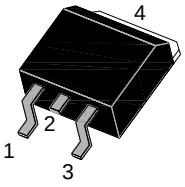
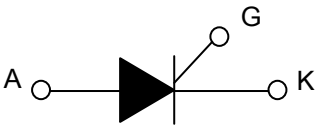
HBT151B series of silicon controlled rectifiers, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interference.
They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

QUICK REFERENCE【參考特性】

Part Number	Industry Part №	$I_{T(RMS)}$	V_{DRM} / V_{RRM}	I_{GT}	Package	Packing	Marking
HBT151B-500R	BT151B-500R	\\ 12 A	500 V	// 15 mA	SMD D^2PAK TO-263 SOT404	50Pcs/Tube 4Kpcs/Box 2.5Kpcs/Rell 每管50只 每盒4000只 或 每卷2500只 每盒5000只 2.1g / Pcs 每枚重量2.1克 每K重2.5千克	 元件標識可按 客戶指定要求
HBT151B-600R	BT151B-600R		600 V				
HBT151B-650R	BT151B-650R		650 V				
HBT151B-800R	BT151B-800R		800 V				
HBT151B-900R	BT151B-900R		900 V				
HBT151B-1000R	BT151B-1000R		1000 V				
說明 Explain	①此規格為貼片封裝、非絕緣型、單向可控硅，電流值可按客戶要求定制 ②常規品种以500V电压规格出貨, 高壓規格600V品種以上批量交期6~8周 ③門極觸發電流IGT值可根據客戶要求細分至多個規格, 單位mA (毫安)						

PINNING: TO-263 (SOT404, D^2PAK)【表面貼TO-263片式封裝】

【"B"表示貼片元件TO-263封裝-載帶卷盤包裝】

Pin	Symbol	Description	Description	Practicality in Pin Arrange	Pin Polarity Circuit diagram
1	K	Cathode	陰 極		1=K 2=A 3=G 4=2=A 
2	A	Anode	陽 極		
3	G	Gate	門-控制極		
4	mb	mounting base	散熱片		

ORDERING INFORMATION

H	BT	151	B	-	650	R
HAOHAI ELECTRONICS CO.,LTD.	BT: Bi-directional Thyristor 晶閘管-单向可控硅开关	$I_{T(RMS)}$ 12A	Package B: D^2PAK TO-263 SOT404		V_{DRM} / V_{RRM} 500=500V 600=600V 650=650V 800=800V 900=900V 1000=1000V	I_{GT} ⩽15mA

■ ABSOLUTE RATINGs (Limiting Values)【额定值参数】

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current (T_C=100℃)	12	A
I_{TSM}	Non repetitive surge peak on-state current (tp=10ms)	120	
I_{GM}	Peak gate current	2	
V_{DRM}	Repetitive peak off-state voltage (T_j=25℃)	500~1000	V
V_{RRM}	Repetitive peak reverse voltage (T_j=25℃)		
I^2t	I^2t value for fusing (tp=10ms)	72	A^2S
dI_T/dt	Repetitive rate of rise of on-state current (I_G=2×I_{GT})	50	A/μs
P_{GM}	Peak gate power	5	W
$P_{G(AV)}$	Average gate power dissipation	0.5	
T_j	Operating junction temperature range	-40~125	℃
T_{stg}	Storage junction temperature range	-40~150	

■ ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V, R_L=33Ω	--	4	15	mA
I_L	I_G=1.2 I_{GT}	--	12	40	
I_H	I_T=500mA	--	12	30	
V_{GT}	V_D=12V, R_L=33Ω	--	0.75	1.5	V
V_{GD}	V_D=V_{DRM}, T_j=125℃, R_L=3.3KΩ	0.2	--	--	
dV/dt	V_D=2/3V_{DRM}, Gate Open, T_j=125℃	200	400	--	V/μs

■ STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=23A, tp=380μs	T_j=25℃	1.7	V
I_{DRM}	V_D=V_{DRM}, V_R=V_{RRM}	T_j=25℃	10	μA
I_{RRM}		T_j=125℃	1	mA

■ THERMAL RESISTANCES

Symbol	Parameter	Value(MAX)	Unit
$R_{th(j-mb)}$	thermal resistance from junction to mounting base	2.0	℃/W

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

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

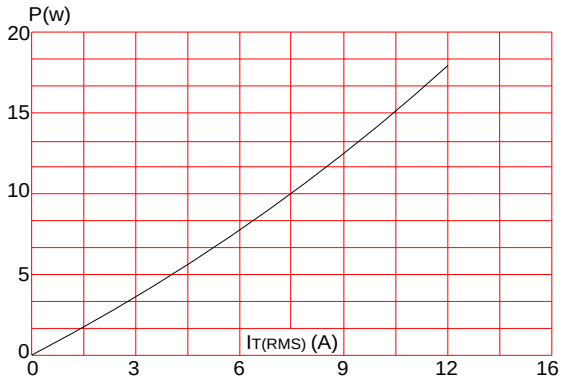


FIG.2: RMS on-state current versus case temperature

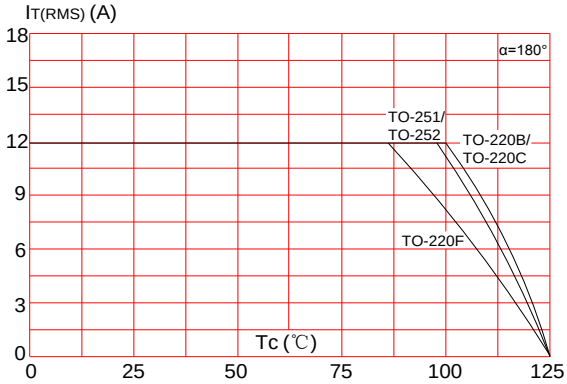


FIG.3: Surge peak on-state current versus number of cycles

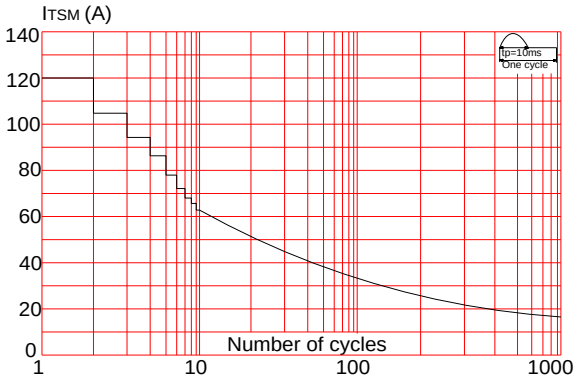


FIG.4: On-state characteristics (maximum values)

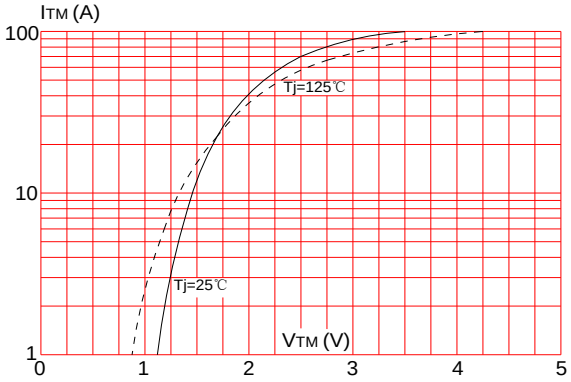


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 50A/μs)

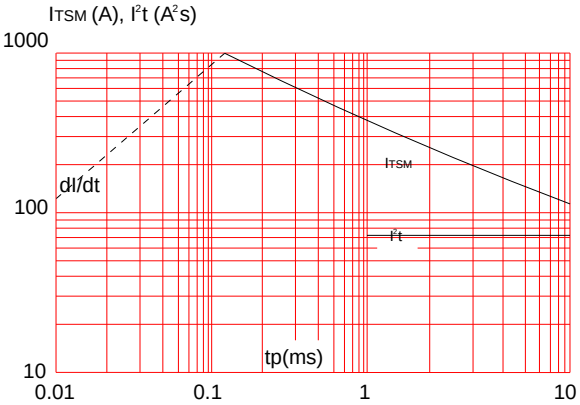
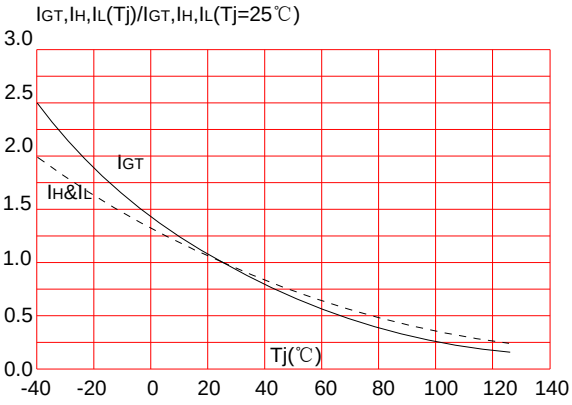
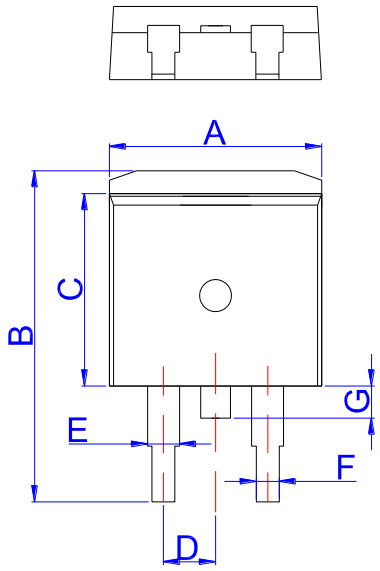


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



■ PACKAGE MECHANICAL DATA （mm & inch）

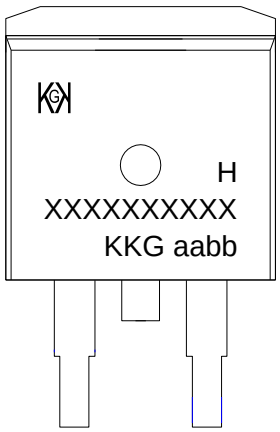
TO-263（SOT404 or D²PAK）封装尺寸数据（毫米与英寸对照）



TO-263 (D²PAK)
Package Code: B

REF	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	9.90	10.20	0.390	0.402
B	14.70	15.80	0.579	0.622
C	9.40	9.60	0.370	0.378
D	2.54		0.100	
E	1.20	1.40	0.047	0.055
F	0.75	0.85	0.029	0.033
G		1.75		0.069
H	4.40	4.70	0.173	0.185
J	2.30	2.70	0.091	0.106
K	0.38	0.55	0.015	0.022
L	0	0.25	0	0.010
M	1.25	1.35	0.049	0.053

■ Marking and packaging specifications



打印标识
H: 浩海电子
XXXXXXXXXX: 器件型号
KKG: 注册商标
aa: 出厂年份
bb: 出厂自然周 (01~53)

Marking
H: HAOHAI ELECTRONICS
XXXXXXXXXX: Part Number
KKG: Registered trademark
aa: Factory Year
bb: Factory natural Week
(01~53)

包装规格
TO-263: 条管装
每管50只, 每盒4000只
或 载带卷盘包装
每卷2500只, 每盒5000只

Packaging Specifications
50Pcs/Tub, 4Kpcs/BOX
TO-263: Tape & Reel Packing
2500Pcs/Reel, 5000Pcs/BOX

Manufacturers version information
2006-02-25， KKG ™ Product Data-1.0
2010-07-25， KKG ™ Product Data-1.1
2014-11-06， KKG ™ Product Data-1.2

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