
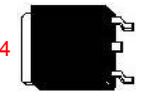
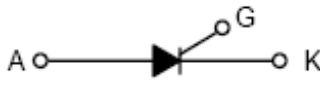


■ QUICK REFERENCE 【參考特性】

產品型號 Part Number	工業型號 Industry Part №	通態電流均方值 IT(RMS) (A)	斷態重復峰值電壓 VDRM / VRRM (V)	門極觸發電流 IGT (μA / mA)	封裝外形 Package	包裝方式 Packing	元件標識 Marking
HBT151-500R	BT151S-500R	12 A	500 V	15 mA	SMD DPAK TO-252 SOT428	TO-252 50Pcs/Tube 1Kpcs/Box 2.5Kpcs/Reel 每管50只 或 每卷2500只 每箱8000只 2.1g / Pcs 每枚重量2.1克 每K重2.5克	
HBT151-600R	BT151S-600R		600 V				
HBT151-650R	BT151S-650R		650 V				
HBT151-800R	BT151S-800R		800 V				
HBT151-900R	BT151S-900R		900 V				
HBT151-1000R	BT151S-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常規品種以500V电压規格出貨, 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)					元件標識可按客戶指定要求	

■ PINNING: TO-252 (SOT428) (DPAK) 【表面貼TO-252片式封裝】
【S or J 表示貼片元件252封裝-載帶卷盤包裝】

Pin 管腳排列	Symbol 對應極性	Description 極性名詞	Description 極性含義	Practicality in Pin Arrange 元件實物與管腳排列說明	Pin Polarity Circuit diagram 腳位與極性 電路符號表示
1	K	Cathode	陰極		1=K 2=A 3=G 4=A=2 
2	A	Anode	陽極		
3	G	Gate	門-控制極		
4	mb	mounting base	散熱片		

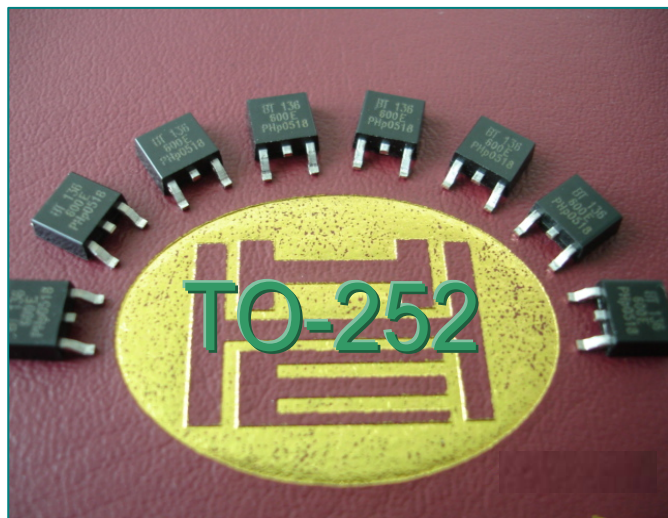
■ ABSOLUTE RATINGS (Limiting Values) 【額定值參數】

SYMBOL 符號表示	Parameter & Test Conditions 符號含義 及 參數測試條件說明	Value 數值	Unit 單位
$I_{T(RMS)}$	通態電流均方值: On-State RMS Current ($T_c=100^\circ\text{C}$) 100°C Conduction Angles	12	A
I_{TSM}	通態浪湧電流: ½周期, 60Hz, 正弦波, 不重複 Peak Non-Repetitive Surge Current (½ Cycle, Sine Wave, 60Hz, $T_j=25^\circ\text{C}$)	120	
V_{DRM} / V_{RRM}	斷態重復峰值電壓 Repetitive peak off-state voltages	500~1000	V
$P_{G(AV)}$	門極平均散耗功率 Average gate power (over any 20 ms period)	0.5	W
T_j	工作結溫 Operating Junction Temperature Range @ Rate VRRM and VDRM	-40 ~ +125	°C
T_{stg}	貯存溫度 Storage Temperature Range	-40 ~ +150	

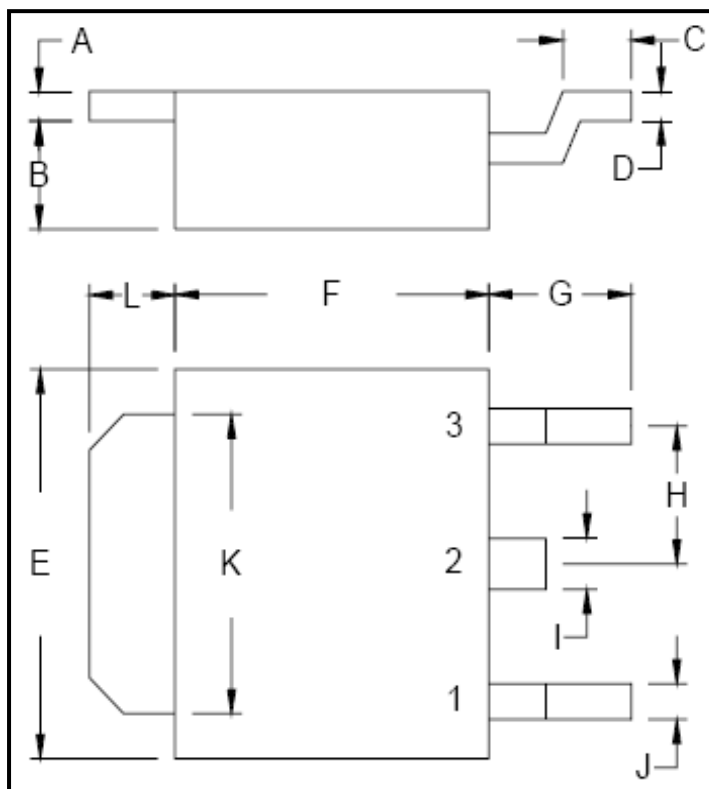
■ ELECTRICAL CHARACTERISTICS (Tj=25°C Unless Otherwise Noted) 【電參數】

SYMBOL 符號表示	Parameter & Test Conditions 符號含義 及 參數測試條件說明	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
I_{GT}	門極 觸發電流: $V_D=12V, I_T=0.1A$	→	2	15	mA
I_H	維持電流: Holding Current ($V_D=12V, I_{GT}=0.1A$)	→	7	20	
V_{GT}	門極 觸發電流: $V_D=12V, I_T=0.1A$	→	0.6	1.5	V
	門極 觸發電流: $V_D=V_{DRM}, I_T=0.1A, T_j = 125^\circ\text{C}$	0.25	0.4	→	
V_{TM}	峰值通態電壓: Peak Forward On-State Voltage ($I_T=23A$)	→	1.4	1.75	
dv / dt	斷態臨界電壓上升率: Critical Rate of Rise of Off-State Voltage	→	→	500	V/μs
di / dt	通態臨界電流上升率: Critical Rate of Rise of On-State Current	→	→	50	A/μs
T_{qt}	門極啟動之導通時間: Gate Controlled Turn-on Time	→	2	→	μs
T_q	一周轉關判斷時間: Circuit Commutated Turn-off Time	→	70	→	
$R_{th(j-c)}$	熱阻-結到外殼: Thermal Resistance-Junction-to-Case	→	→	1.8	°C/W
$R_{th(j-a)}$	熱阻-結到環境: Thermal Resistance-Junction-to-Ambient	→	75	→	

MECHANICAL DATA TO-252 (SOT428 or DPAK) 封裝尺寸



深圳市浩海電子有限公司
IZHEN HAOHAI ELECTRONICS CO.



單位 Dim	最小值 Min.	最大值 Max.
A	0.45	0.55
B	1.70	1.90
C	0.90	1.50
D	0.45	0.60
E	6.40	6.80
F	5.40	5.80
G	2.20	2.80
H	--	2.30
I	0.70	0.90
J	--	0.90
K	5.20	5.50
L	1.40	1.60
尺寸單位: 毫米 mm		

Fig 1. Total power dissipation as a function of average on-state current; maximum values. $a = \text{form factor} = I_{T(RMS)} / I_{T(AV)}$.

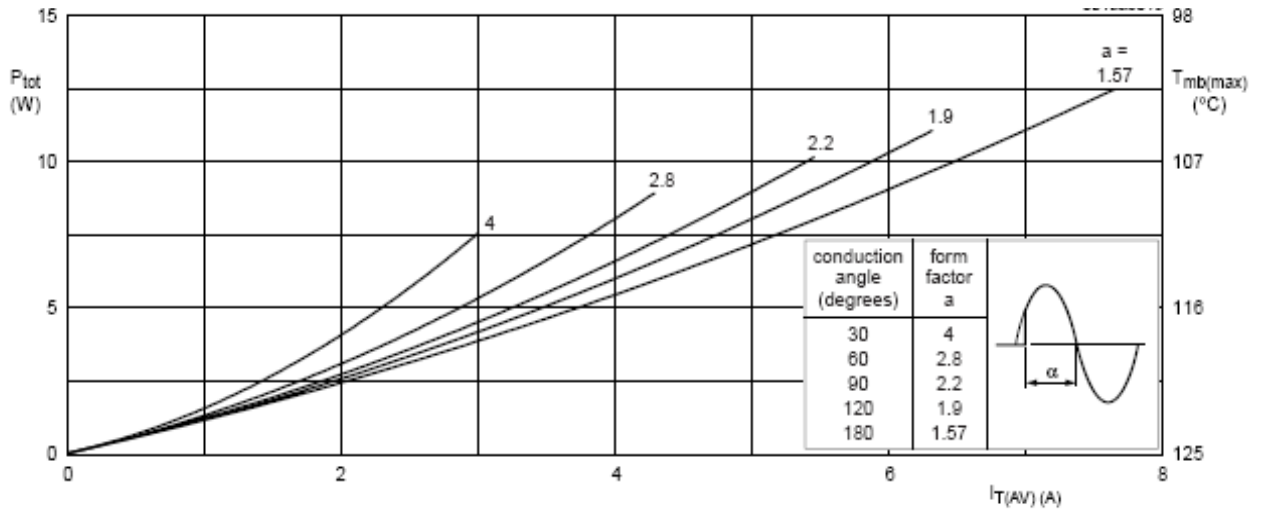


Fig 2. Non-repetitive peak on-state current as a function of the number of sinusoidal current cycles; maximum values. (F=50Hz)

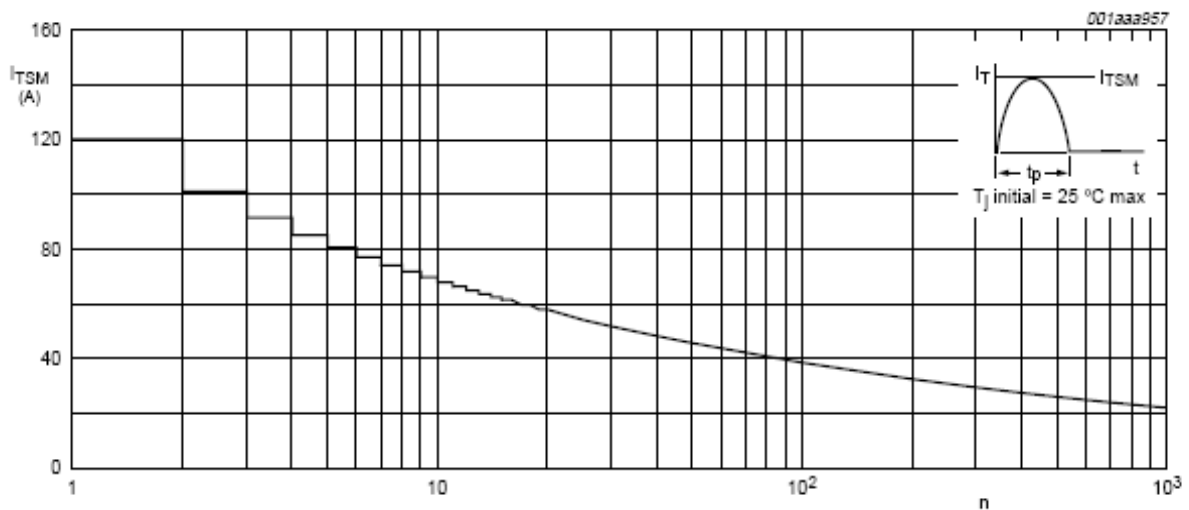


Fig 3. Non-repetitive peak on-state current as a function of pulse width; maximum values. (t_p ≤ 10ms)

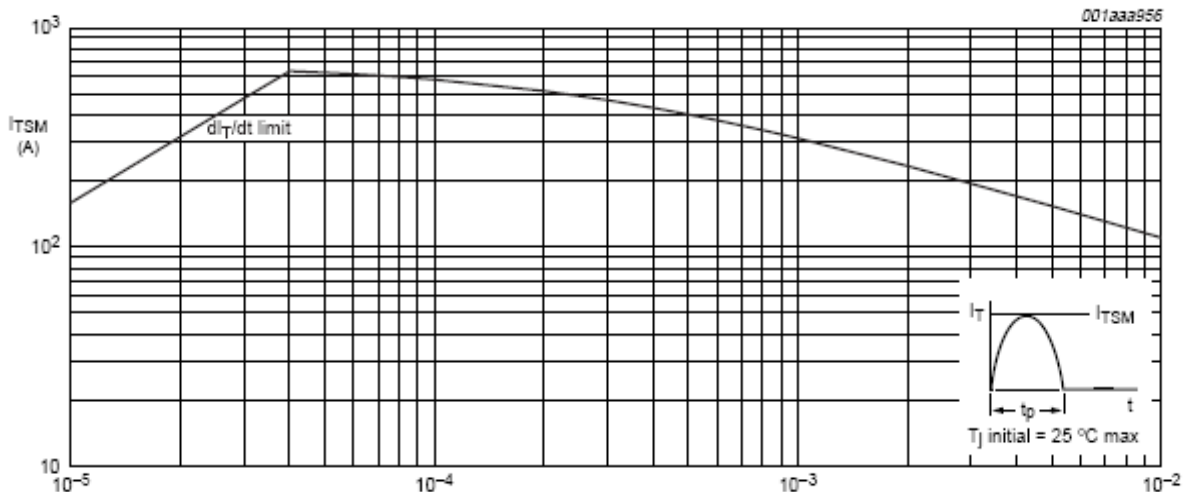


Fig 4. RMS on-state current as a function of surge duration; maximum values. (F=50Hz, Tab ≤ 103°C)

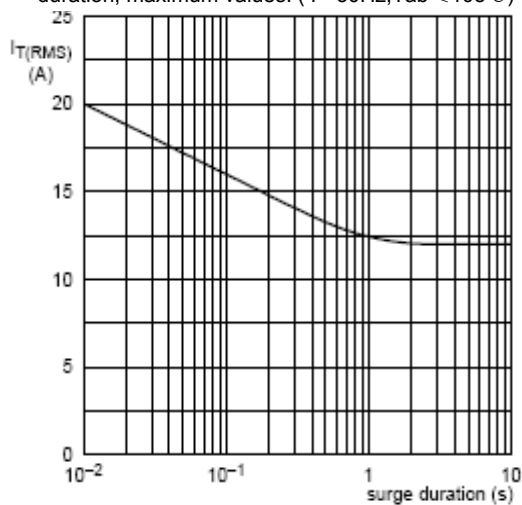


Fig 5. RMS on-state current as a function of mounting base temperature; maximum values.

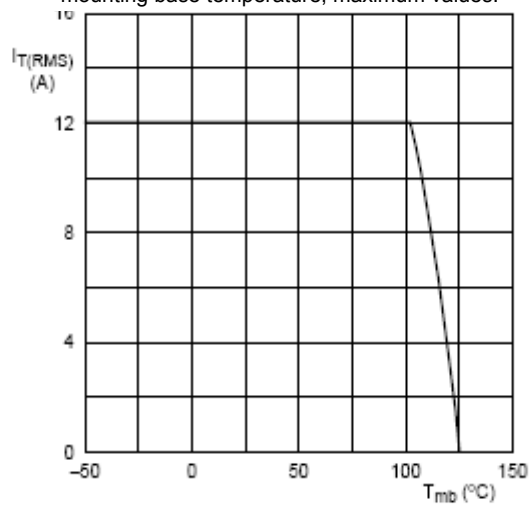


Fig 6. Normalized gate trigger voltage as a function of junction temperature.

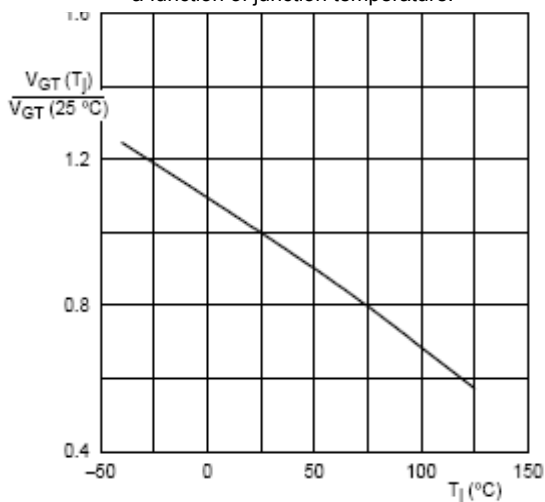


Fig 7. Normalized gate trigger current as a function of junction temperature.

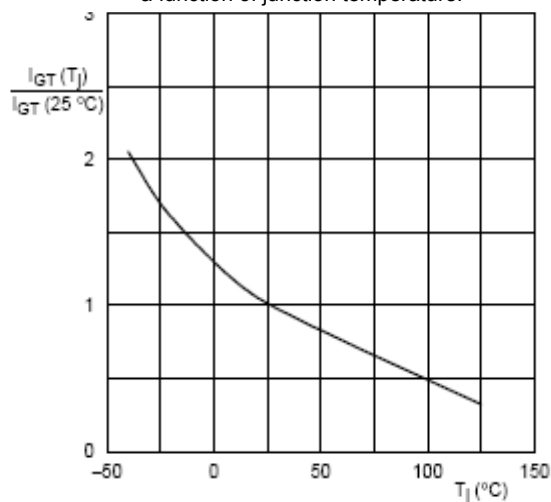


Fig 8. Transient thermal impedance as a function of pulse width.

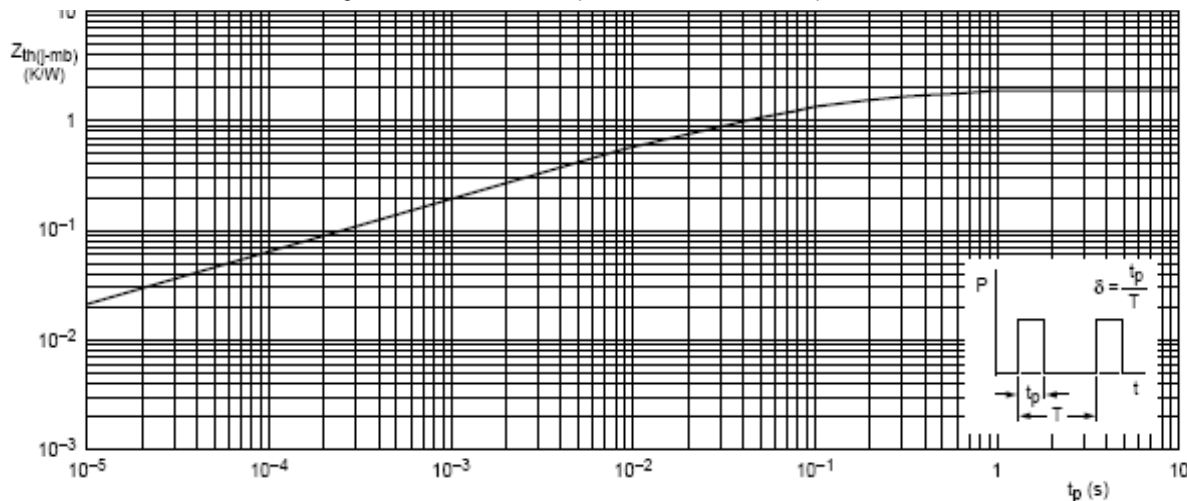


Fig 9. On-state current characteristics.

$V_O=1.06V$, $R_S=0.0304\Omega$, $T_J=125^\circ C$, typical values;
 $T_J=125^\circ C$; maximum values, $T_J=25^\circ C$; maximum values

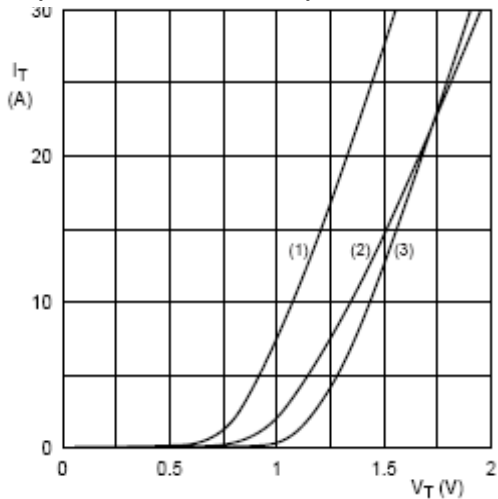


Fig 10. Normalized latching current as a function of junction temperature.

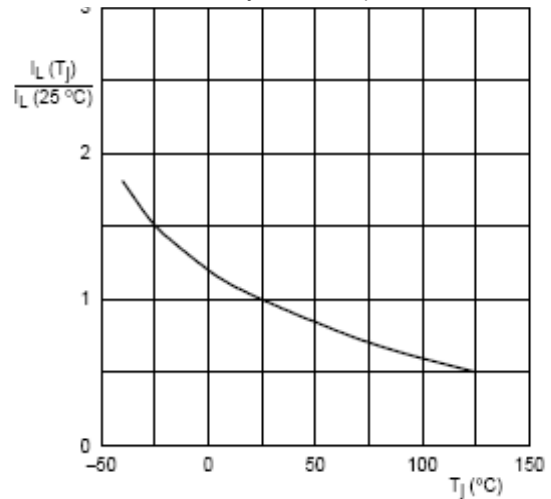


Fig 11. Normalized holding current as a function of junction temperature.

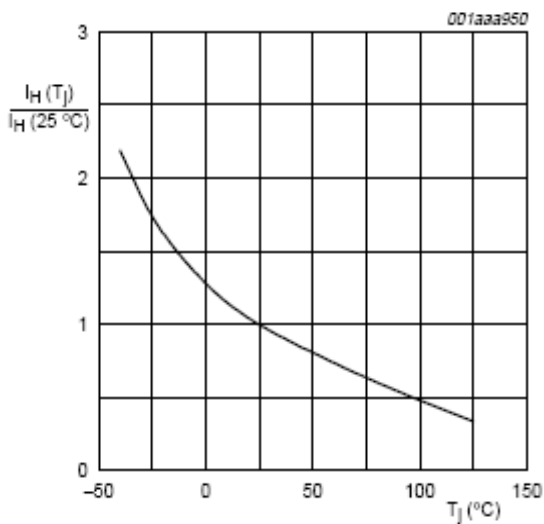


Fig 12. Critical rate of rise of off-state voltage as a function of junction temperature; minimum values. (RGK=100Ω) Gate open circuit

