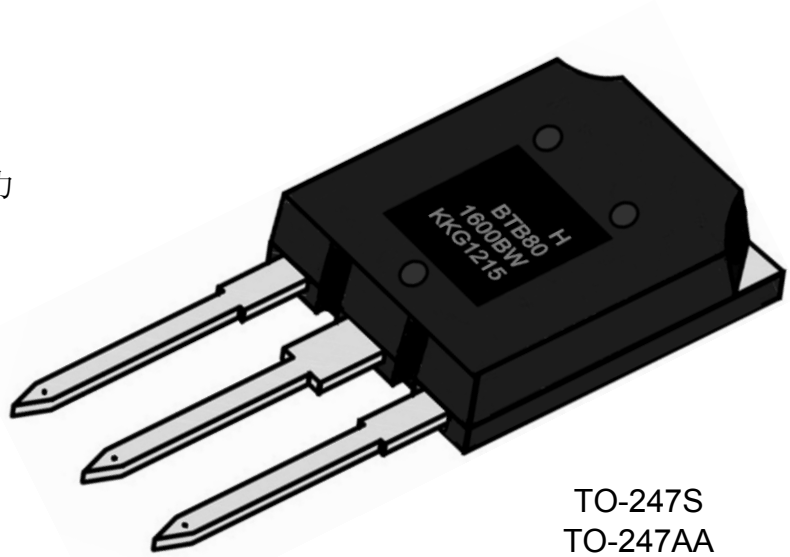
■产品特征

PNPN四层结构硅芯片
三象限、三端双向可控硅开关
双台面玻璃钝化工艺
多层金属化电极提高瞬间浪涌电流承受力
较高阻断电压
较强抗电流冲击能力

■应用领域

自动化电气设备
交流/直流电源变换
电加热控制
无功补偿
复合开关、大功率路灯
大功率捕鱼器
电机马达调速控制电路



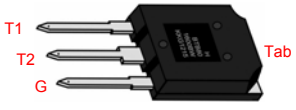
TO-247S
TO-247AA
Super-247

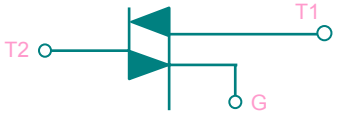
■QUICK REFERENCE【参考特性】

產品型號 Part Number	工業型號 Industry Part №	通態電流均方值 $I_{T(RMS)}$ (A)	斷態重復峰值電壓 V_{DRM} / V_{RRM} (V)	門極觸發電流 I_{GT} (mA)	包裝方式 Packing	元件標識 Marking
BTB80-800BW	BTB80-800BW	80 A	800 V	型号后缀 B: I_{GT} ≤50mA W: 3-Q 3 Quadrants Triacs	30Pcs/Tube 450Pcs/Box 每管30只 每盒450只 6.5g / Pcs 每枚重量6.5克	H BTB80 1600B KKG1215 H: HAOHAI KKG:注册商标 1215:生产日期 2012年第15周出厂 按实际自然周
BTB80-1000BW	BTB80-1000BW		1000 V			
BTB80-1200BW	BTB80-1200BW		1200 V			
BTB80-1400BW	BTB80-1400BW		1400 V			
BTB80-1600BW	BTB80-1600BW		1600 V			
BTB80-1800BW	BTB80-1800BW		1800 V			

① 三象限、大电流、高压、特殊机种
② 1200V、1600V 常规出货，其它高压需订制
③ 触发电流I_{GT}值可按客戶要求订制

■PINNING: TO-247AA (Super-247) 【TO-247直插半塑封】【BTB為非絕緣型: 中間管腳T2與散熱片Tab導通】

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	Pin Polarity Circuit diagram 腳位與極性 電路符號表示
1	T1	Main terminal 1	第一陽極		1=T1 2=T2 3=G 4=Tab
2	T2	Main terminal 2	第二陽極		
3	G	Gate	門-控制極		
4	Tab	----	散熱片		



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

SYMBOL 符號表示	Paramenter & Test Conditions 器件符號含義 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 (full sine wave,T_C=70°C)		80	A
I_{TSM}	通態浪湧電流 Non repetitive surge peak on-state current	t_p=10ms, f=50Hz	800	
		t_p=8.3ms, f=60Hz	852	
I_{GM}	控制极峰值散耗电流: tp=20μs, Tc=125℃		8	
I^2t	週期電流平方時間積: Circuit Fusing Consideration (tp=10mS)		3200	A^2ses
P_{GM}	控制极峰值散耗功率: tp=20μs, Tc=125℃		10	W
$P_{G(AV)}$	門極平均散耗功率: Average gate power (Tj=125°C)		2.0	
V_{DRM}	斷態重復峰值電壓	參考型號對照列表 Repetitive peak off-state voltages (Tj=25℃)	800~1800	V
V_{RRM}	反向重復峰值電壓			
T j	工作結溫: Operating Junction Temperature Range @ Rate V_{RRM} and V_{DRM}		-40 ~ +125	℃
Tstg	貯存溫度: Storage Temperature Range		-40 ~ +150	
T_L	引腳承受焊錫極限溫度: Maximum Lead Temperature for Soldering Purposes 1/8 from Case for 10 Seconds		300	

■ELECTRICAL CHARACTERISTICs (Tj=25℃ Unless Otherwise Noted)【電參数】

SYMBOL 符號表示	Paramenter & Test Conditions 符號含義 及 參數測試條件 說明		Value 最小值	Value 典型值	Value 最大值	Unit 單位
I_{GT} Ⅰ (T2+G+)	門極觸發電流第一象限	門極觸發電流 Gate trigger current V_D=12V_{DC}, R_L=33Ω, Tj=25°C	--	--	50	mA
I_{GT} Ⅱ (T2+G-)	門極觸發電流第二象限		--	--	50	
I_{GT} Ⅲ (T2-G-)	門極觸發電流第三象限		--	--	50	
I_H	維持電流: Holding Current	I_T=100mA	--	--	60	
I_L	擎柱電流 Latching Current (I_G=1.2 I_{GT})	I_{GT} Ⅰ I_{GT}Ⅲ	--	--	80	
		I_{GT}Ⅱ	--	--	100	
I_{DRM}	断态重复峰值電流 Latching Current (V_D=V_{DRM}, V_R=V_{DRM})	Tj=25℃	--	--	50	μA
I_{RRM}		Tj=125℃	--	--	1000	
V_{GT}	門極觸發電壓: Gate trigger voltage (V_D=12V_{DC}, R_L=33Ω, Tj=25°C)		--	--	1.3	V
V_{GD}	門極不觸發電壓: Gate NO-trigger voltage (V_D=V_{DRM}, R_L=33Ω, Tj=25°C)		0.2	--	--	
V_{TM}	通態峰值電壓: Peak Forward On-State Voltage (I_{TM}=120A, tp=380μs, T_J=25℃)		--	--	1.55	
dv / dt	斷態臨界電壓上升率: Critical Rate of Rise of Off-State Voltage		1000	--	--	V/μs
di / dt	通態臨界電流上升率: Critical Rate of Rise of On-State Current		--	--	100	A/μs
Rth(j-c)	熱阻-結到外殼: Thermal Resistance-Junction-to-Case		--	0.35	--	℃/W
Rth(j-a)	熱阻-結到環境: Thermal Resistance-Junction-to-Ambient		--	40	--	

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

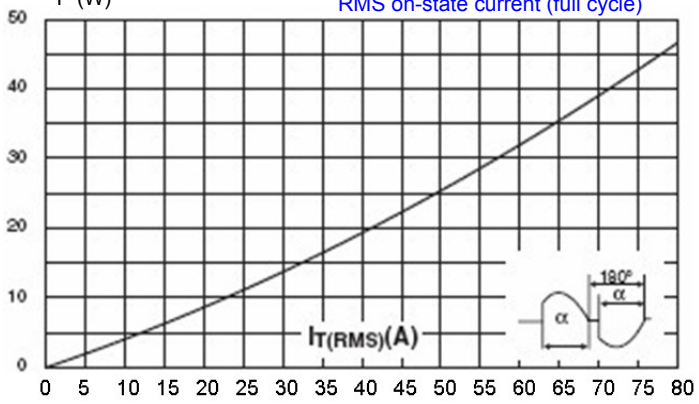


Figure 2: RMS on-state current versus case temperature (full cycle)

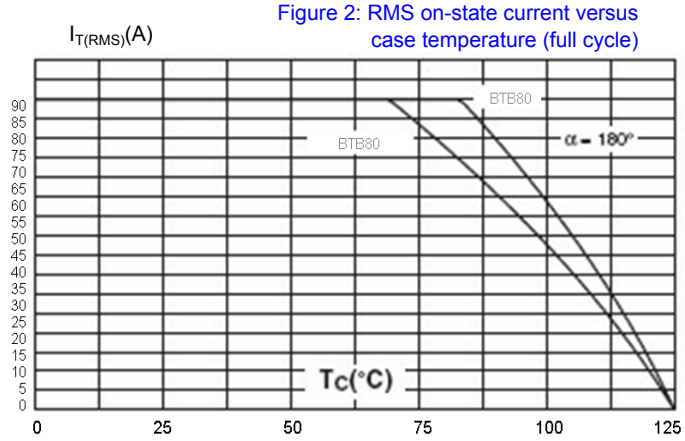


Figure 3: Relative variation of thermal impedance versus pulse duration

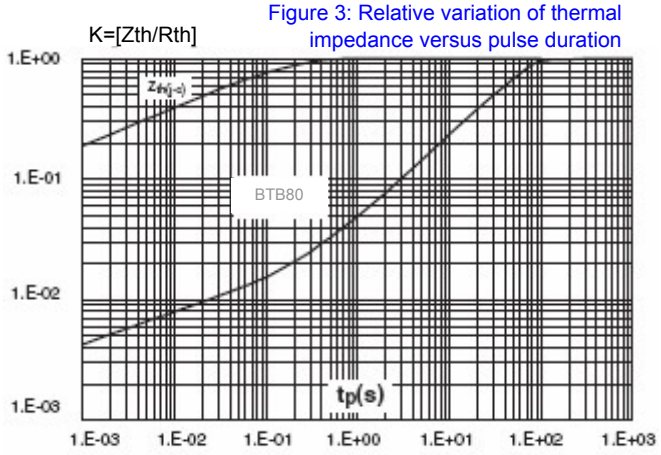


Figure 4: On-state characteristics (maximum) values

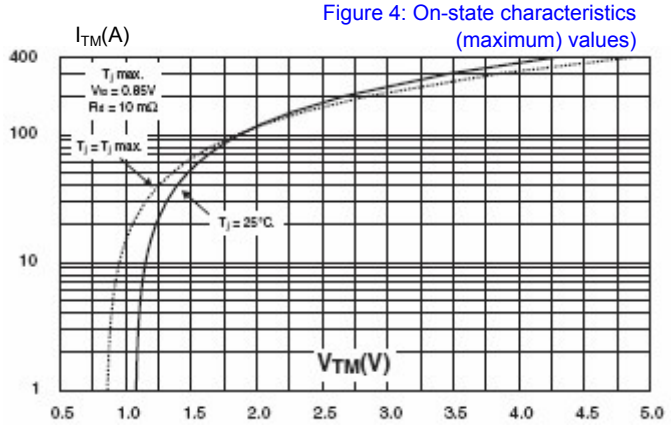


Figure 5: Surge peak on-state current versus number of cycles

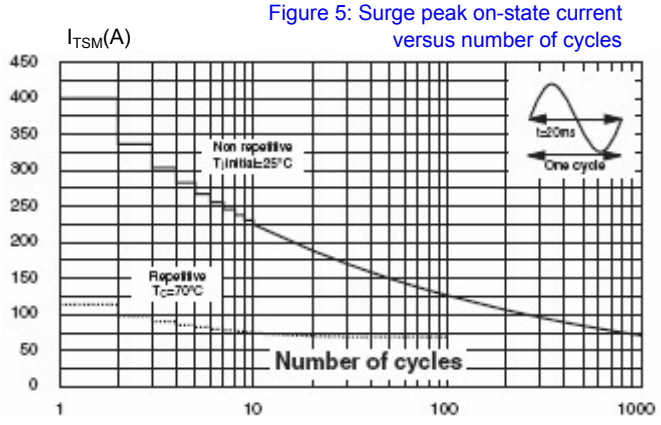


Figure 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms and corresponding value of I^2t

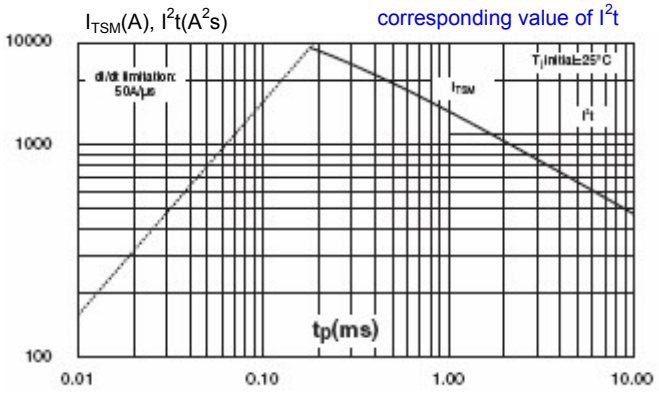


Figure 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)

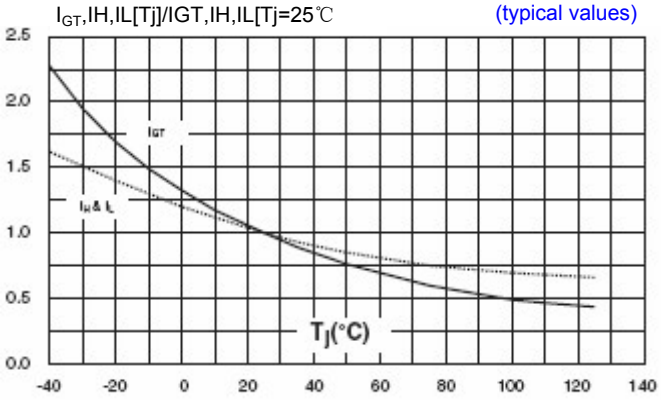


Figure 8: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values)

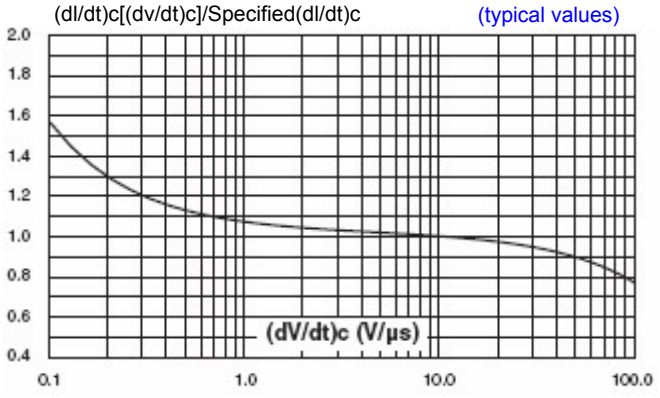
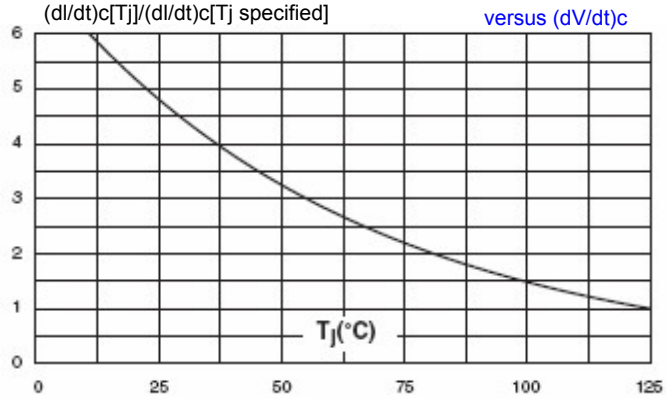


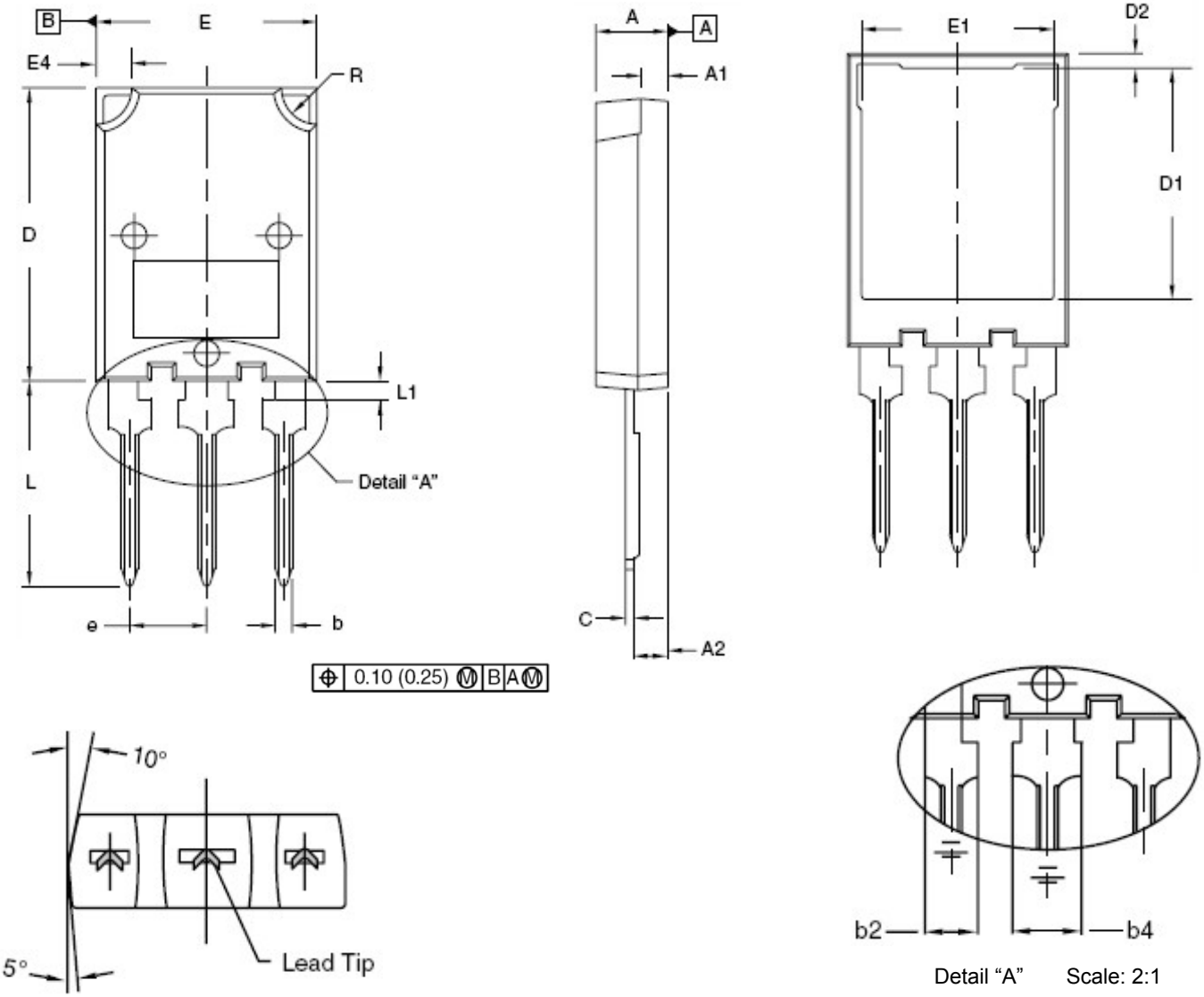
Figure 9: Relative variation of critical rate of decrease of main current versus (dV/dt)c



Component physical picture 元件实物图

Package Information （mm & Inches）

TO-247AA （Super-247）封裝尺寸 單位: 毫米與英寸對照 mm & Inches



Detail "A" Scale: 2:1

DIM.	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	4.70	5.30	0.185	0.209
A1	1.50	2.50	0.059	0.098
A2	2.25	2.65	0.089	0.104
b	1.30	1.60	0.051	0.063
b2	1.80	2.20	0.071	0.087
b4	3.00	3.25	0.118	0.128
c	0.80	1.20	0.031	0.047
D	19.80	20.80	0.780	0.819

DIM.	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
D1	15.50	16.10	0.610	0.634
D2	0.700	1.300	0.028	0.051
E	15.10	16.10	0.594	0.634
E1	13.30	13.90	0.524	0.547
e	5.45 BSC		0.215 BSC	
L	13.70	14.70	0.539	0.579
L1	1.000	1.600	0.039	0.063
R	2.000	3.000	0.079	0.118

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