

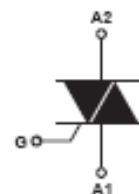
产品概述 GENERAL DESCRIPTION

BTB12 双向可控硅采用穿通隔离台面结构，复合玻璃钝化PN结表面保护工艺技术，dv/dt高，可靠性高，适用于控温、调光、马达控制。

BTB12 Triacs is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly dv/dt and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.

主要参数 MAIN CHARACTERISTICS

参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	600&800	V
I_{GT}	≤ 50	mA



产品特性

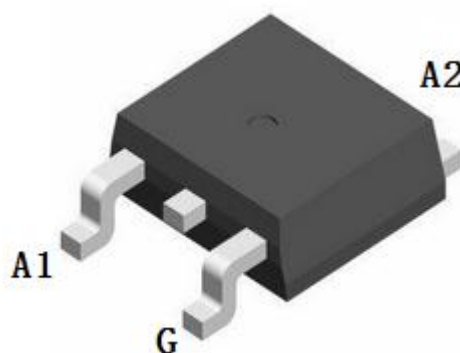
FEATURES

- dv/dt高
- 通态压降低
- Rohs环保产品
- Highly dv/dt
- Low on-state voltage
- Rohs Products

应用领域 APPLICATIONS

主要应用于调光、控温、马达控制。

domestic lighting ,heating and motor speed controllers.



极限值(除非另有规定, $T_j=25^\circ\text{C}$) ABSOLUTE RATINGS

 ($T_j=25^\circ\text{C}$, unless otherwise specified)

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	RMS 通态电流 RMS on-state current (full sine wave)	$T_C=105^\circ\text{C}$	12 A
I_{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	$F=50\text{Hz}, t=20\text{ms}$	120 A
I^2t	I^2t 耗散值 I^2t value for fusing	$T_P=10\text{ms}$	78 A^2s
di/dt	通态电流上升值 Critical rate of rise of on-state current	$F=120\text{Hz}, T_j=125^\circ\text{C}$	50 A/ μs
I_{GM}	门极峰值电流 Peak gate current	$T_P=20\mu\text{s}, T_j=125^\circ\text{C}$	4 A
$P_{G(AV)}$	平均门极耗散功率 Average gate power dissipation	$T_j=125^\circ\text{C}$	1 W
Tstg	贮存结温范围 Storage junction temperature range		-40+150 $^\circ\text{C}$
T_j	工作结温范围 Operating junction temperature range		-40+125 $^\circ\text{C}$

电参数(除非另有规定, $T_j=25^\circ\text{C}$) ELECTRICAL CHARACTERISTICS

 ($T_j=25^\circ\text{C}$, unless otherwise specified)

3 quadrants

参数 Parameter	符号 Symbol	规范值 Value				单位 Unit	测试条件 Test Conditions	
		TW	SW	CW	BW			
触发电流 Gate trigger current	I_{GT}	I ~ III	5	10	35	50	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
触发电压 Gate trigger voltage	V_{GT}	I ~ III	1.5				V	$V_D=12\text{V}, I_T=0.1\text{A}$
维持电流 Holding current	I_H		20	35	80	100	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
擎住电流 Latching current	I_L		40	60	100	120	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
电压上升率 Rise of off- state voltage	dv/dt		20	40	500	1000	V/ μS	$V_D=67\% V_{DRM}$
通态压降 Peak on-state voltage	V_{TM}		1.6				V	$I_T=17\text{A}$
断态漏电流 Peak repetitive forward blocking current	I_{DRM}		5				μA	$V_{RRM}=V_{DRM}, T_j=25^\circ\text{C}$
	I_{RRM}		2				mA	$V_{RRM}=V_{DRM}, T_j=125^\circ\text{C}$

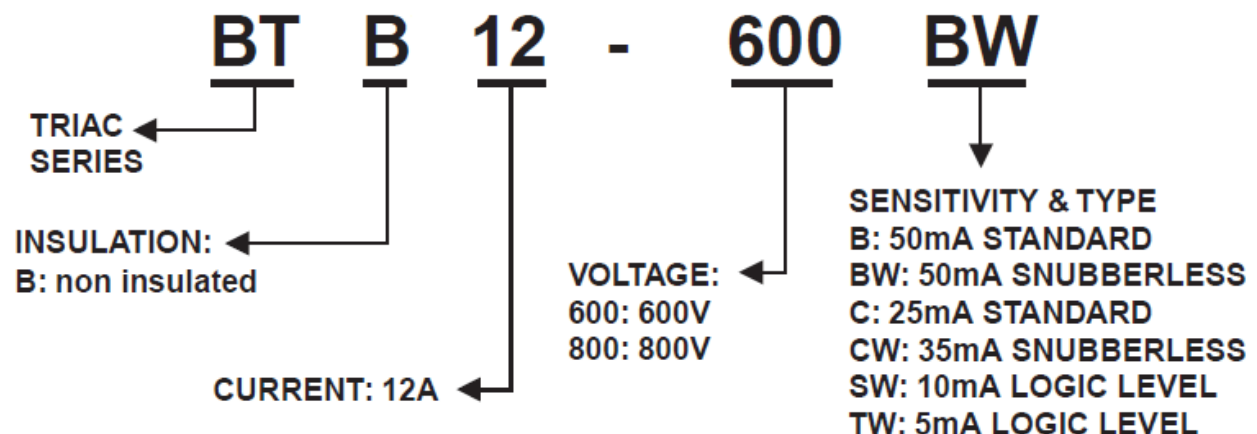
4 quadrants

参数 Parameter	符号 Symbol		规范值 Value		单位 Unit	测试条件 Test Conditions
			C	B		
触发电流 Gate trigger current	I _{GT}	I ~ III	25	50	mA	V _D =12V, I _T =0.1A
		IV	50	100		
触发电压 Gate trigger voltage	V _{GT}	I ~ III	1.5		V	V _D =12V, I _T =0.1A
		IV				
维持电流 Holding current	I _H		35	60	mA	V _D =12V, I _T =0.1A
擎住电流 Latching current	I _L	I-III-IV	45	70	mA	V _D =12V, I _T =0.1A
		II	80	100		
电压上升率 Rise of off- state voltage	dv/dt		200	400	V/μS	V _D =67% V _{DRM}
通态压降 Peak on-state voltage	V _{TM}		1.6		V	I _T =17A
断态漏电流 Peak repetitive forward blocking current	I _{DRM}		5		μA	V _{RRM} =V _{DRM} , T _j = 25 °C
	I _{RRM}		2		mA	V _{RRM} =V _{DRM} , T _j =125 °C

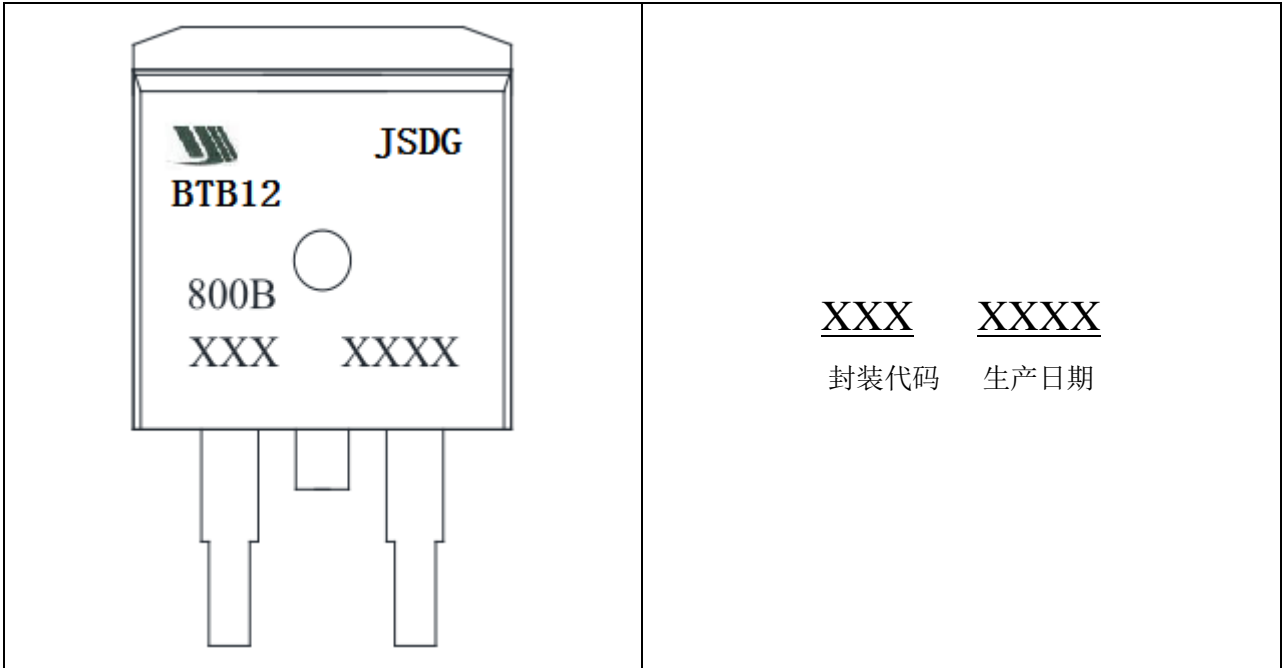
热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
Rth(j-c)	Junction to case(AC)	1.2	K/W
Rth(j-a)	Junction to ambient	45	K/W

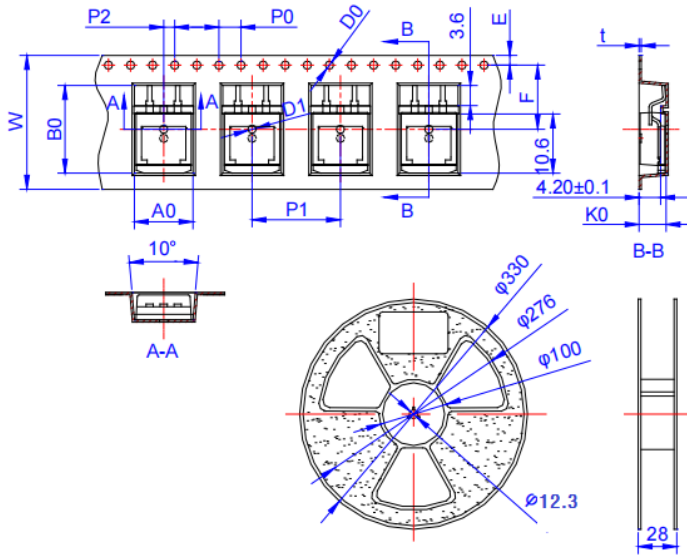
ORDERING INFORMATION



印章说明MARKING



配送方式 DELIVERY MODE



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	23.70	24.00	24.30	0.933	0.945	0.957
E	1.65	1.75	1.85	0.065	0.069	0.073
F	11.40	11.50	11.60	0.449	0.453	0.457
D0	-	1.50	1.60	-	0.059	0.063
D1	-	1.50	1.60	-	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	15.90	16.00	16.10	0.626	0.630	0.634
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	10.80	10.90	11.00	0.425	0.429	0.433
B0	16.20	16.30	16.40	0.638	0.642	0.646
K0	4.80	4.90	5.00	0.189	0.193	0.197
t	0.35	0.40	0.45	0.014	0.016	0.018

PACKAGE	OUTLINE	REEL(PCS)	PER CARTON (PCS)	TAPE&REEL
TO-263	TAPING	800	4000	13inch

特征曲线 ELECTRICAL CHARACTERISTICS (CURVES)

图1 最大耗散功率与RMS通态电流关系
Fig.1.Maximum Power Dissipation Versus on-state current

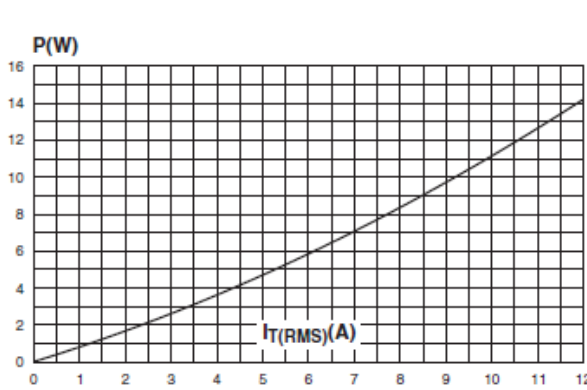


图3 通态特性
Fig.3.On-State Characteristics

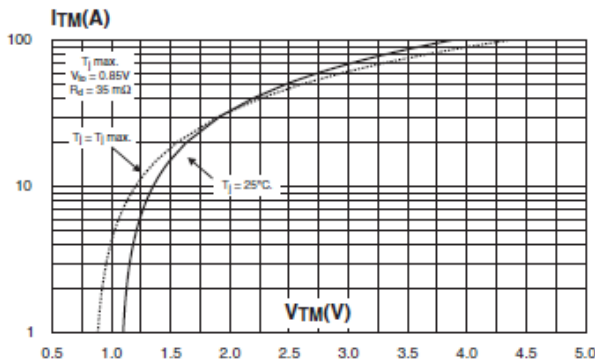


图2 RMS通态电流与Tc温度关系
Fig.2. RMS On-state Current Versus TL

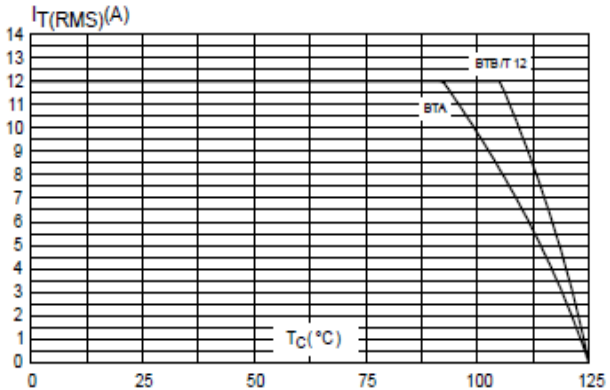


图4 通态浪涌峰值电流与周期数关系
Fig.4.Surge Peak On-state Current Versus Number Cycles

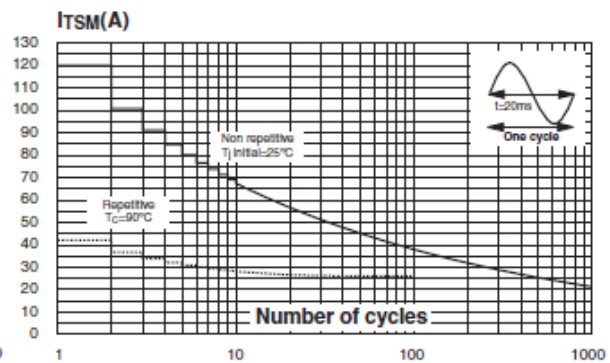
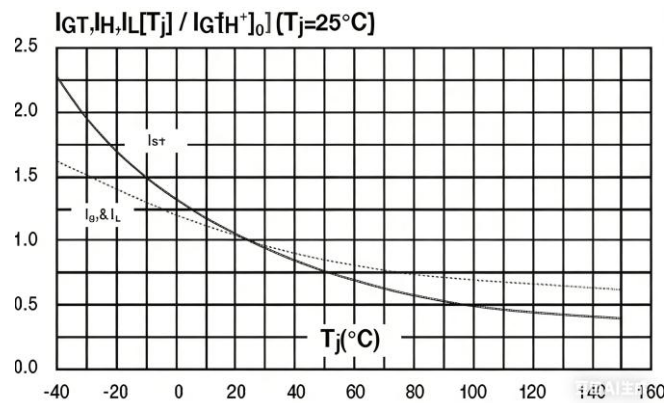
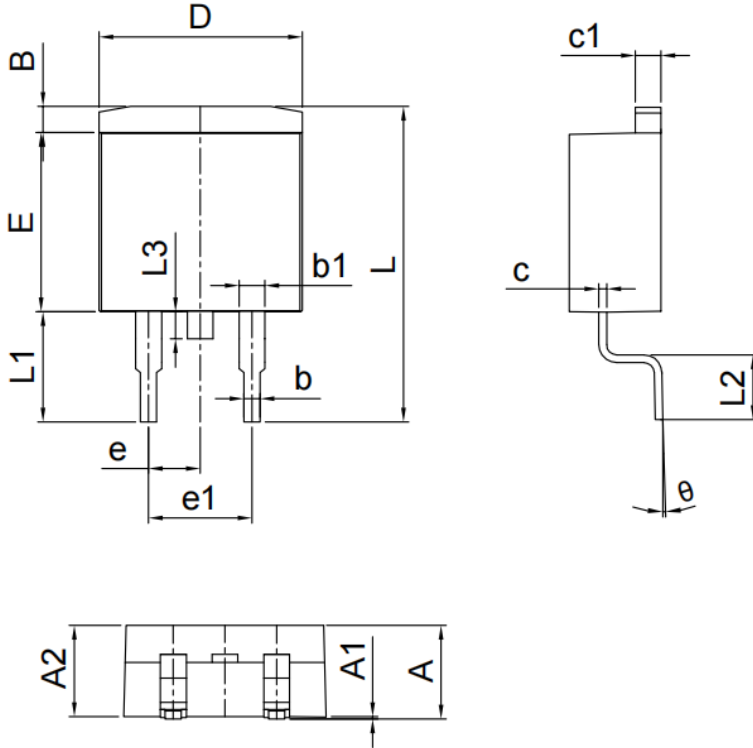


图5 IGT、IH、IL相对值（相对于25°C）与结温关系
Fig.5.Relative Variation Of Gate Trigger Current , Holding Current And Latching Current Versus Junction Temperature (Typical Value)



封装尺寸 PACKAGE MECHANICAL DATA

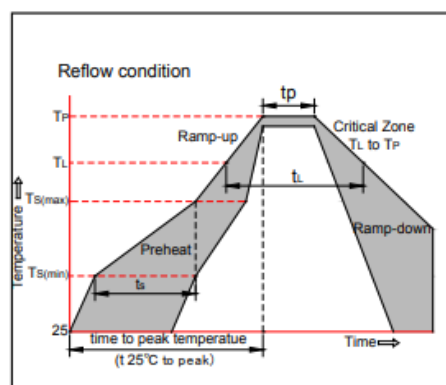
TO-263



SYMBOL	MIN.	TYP	MAX.
A	4.40	4.55	4.70
A1	0.00	0.05	0.15
A2	4.40	4.50	4.60
B	1.12	1.27	1.42
b	0.71	0.81	0.91
b1	1.17	1.27	1.37
c	0.30	0.40	0.50
c1	1.17	1.27	1.37
D	9.90	10.00	10.20
E	8.70	8.80	8.90
e	2.44	2.54	2.64
e1	4.88	5.08	5.26
L	15.00	15.20	15.50
L1	5.10	5.30	5.50
L2	2.34	2.54	2.74
L3	1.56	1.66	1.76
θ		5°	

焊接参数 SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



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