

# BT136

Rev.E Mar.-2016

## 描述 / Descriptions

TO-220 塑封封装 双向可控硅。Triac in a TO-220 Plastic Package.

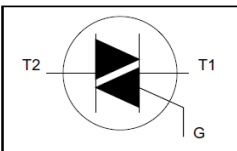
## 特征 / Features

高转换性能。  
High commutation performances.

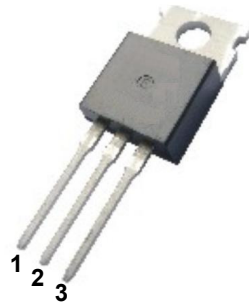
## 用途 / Applications

用于快速双向电压转换和热循环装置。  
Use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1 : Main Terminal 1    PIN 2 : Main Terminal 2    PIN 3 : Gate

## 放大及印章代码 / $h_{FE}$ Classifications & Marking

见印章说明。See Marking Instructions.

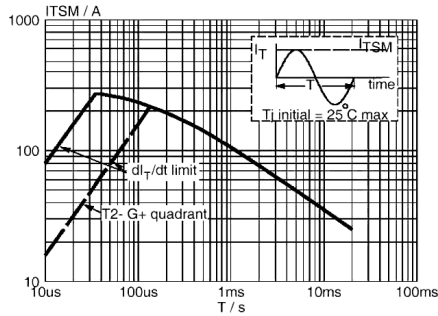
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating		单位 Unit
		600E	800E	
Repetitive peak off-state voltages	$V_{DRM}$	600	800	V
RMS on-state current	$I_{T(RMS)}$	4.0		A
Non-repetitive peak on-state current	$I_{TSM(t=20ms)}$	25		A
Non-repetitive peak on-state current	$I_{TSM(t=16.7ms)}$	27		A
$I^2t$ for fusing	$I^2t_{(t=10ms)}$	3.1		A <sup>2</sup> S
Peak gate current	$I_{GM}$	2.0		A
Peak gate voltages	$V_{GM}$	5.0		V
Peak gate power	$P_{GM}$	5.0		W
Average gate power	$P_{G(AV)}$	0.5		W
Junction Temperature	$T_j$	125		°C
Storage Temperature Range	$T_{stg}$	-40~150		°C
Thermal resistance junction to ambient	$R_{th(j-a)}$	60		K/W
Thermal resistance junction to mounting base	$R_{th(j-b)}$	3.0		K/W

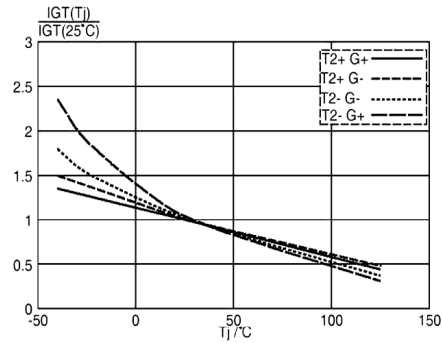
**电性能参数 / Electrical Characteristics(Ta=25°C)**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit	
Gate trigger current	$I_{GT}$	$V_D=12V$ $I_T=0.1A$	T2+G+		2.5	10	mA
			T2+G-		4.0	10	
			T2-G-		5.0	10	
			T2-G+		11	25	
Latching current	$I_L$	$V_D=12V$ $I_{GT}=0.1A$	T2+G+		3.0	15	mA
			T2+G-		10	20	
			T2-G-		2.5	15	
			T2-G+		4.0	20	
Holding current	$I_H$	$V_D=12V$ $I_{GT}=0.1A$		2.2	15	mA	
On-state voltage	$V_T$	$I_T=5.0A$		1.4	1.7	V	
Gate trigger voltage	$V_{GT}$	$V_D=12V$ $I_T=0.1A$		0.7	1.5	V	
		$V_D=400V, I_T=0.1A,$ $T_j=125^\circ C$	0.25	0.4			
Off-state leakage current	$I_D$	$V_D=V_{DRM(max)}$ $T_j=125^\circ C$		0.1	0.5	mA	
Critical rate of rise of off-state current	$t_{gt}$	$I_{TM}=6A, V_D=V_{DRM(max)}$ $I_G=0.1A$ $dl_g/dt=5A/\mu s$		2.0		$\mu s$	
Repetitive peak off-state current	$dV_D/dt$	$V_D=67\% V_{DRM(max)}$ gate open $T_j=125^\circ C$		50		V/ $\mu s$	

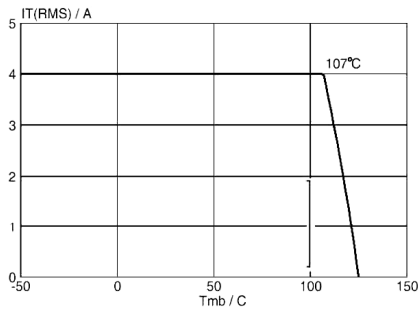
**电参数曲线图 / Electrical Characteristic Curve**



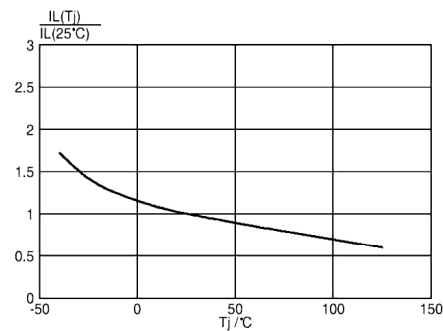
Maximum permissible non-repetitive peak on-state current  $I_{TSM}$ , versus pulse width  $t_p$ , for sinusoidal currents,  $t_b \leq 20ms$ .



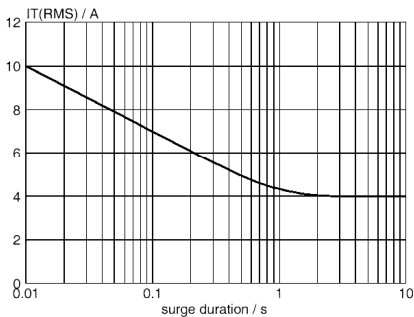
Normalised gate trigger current  $I_{GT}(T_j) / I_{GT}(25^\circ C)$ , versus junction temperature  $T_j$ .



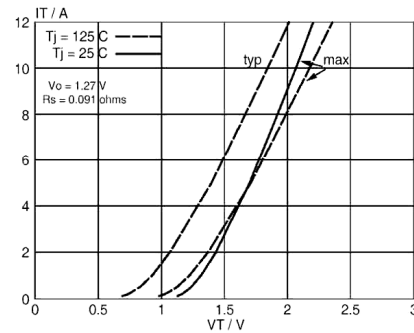
Maximum permissible rms current  $I_{T(RMS)}$ , versus mounting base temperature  $T_{mb}$ .



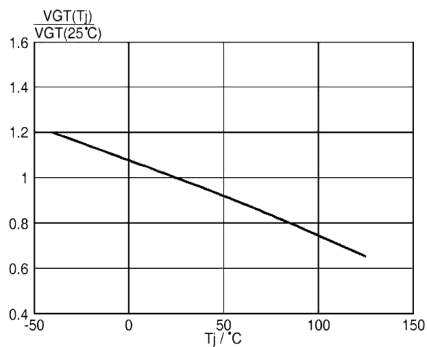
Normalised latching current  $I_L(T_j) / I_L(25^\circ C)$ , versus junction temperature  $T_j$ .



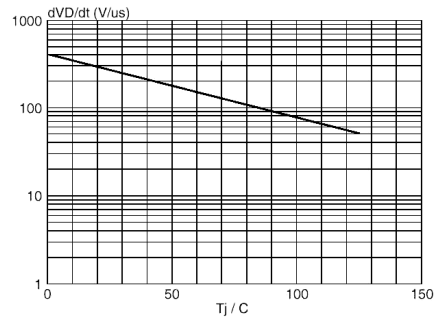
Maximum permissible repetitive rms on-state current  $I_{T(RMS)}$ , versus surge duration, for sinusoidal currents,  $f = 50 Hz$ ;  $T_{mb} \leq 107^\circ C$ .



Typical and maximum on-state characteristic.



Normalised gate trigger voltage  $V_{GT}(T_j) / V_{GT}(25^\circ C)$ , versus junction temperature  $T_j$ .

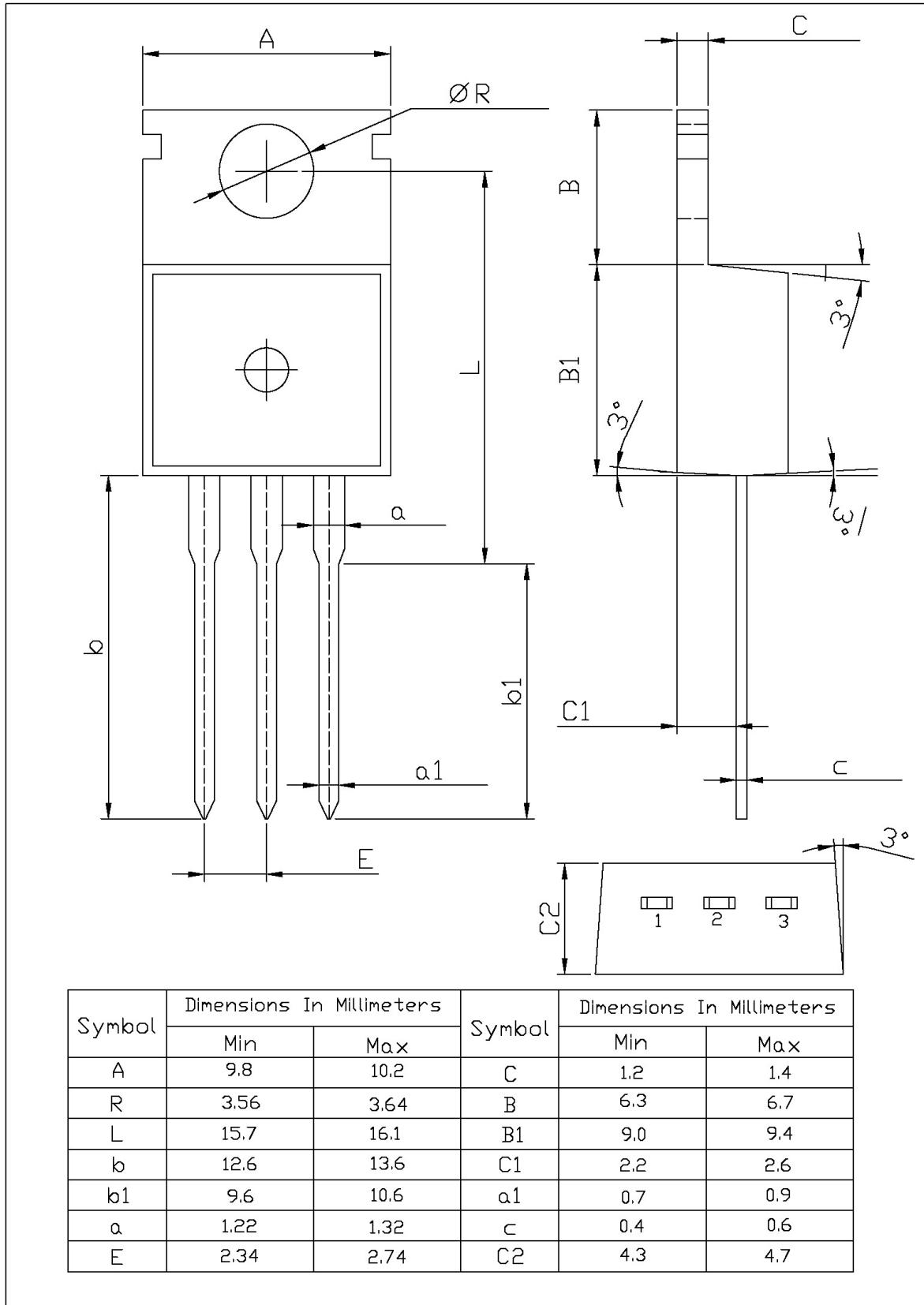


Typical, critical rate of rise of off-state voltage,  $dV_D/dt$  versus junction temperature  $T_j$ .

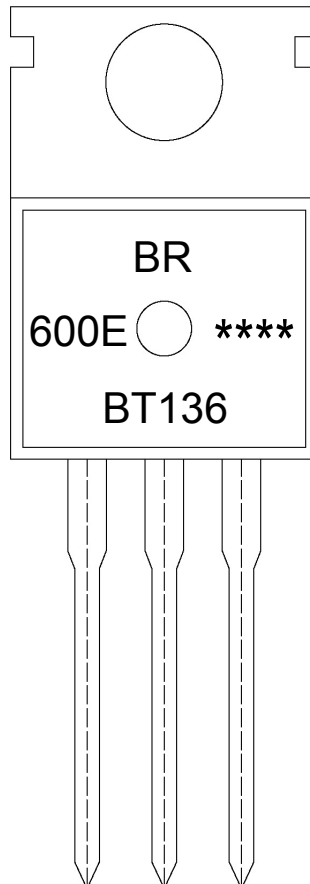
外形尺寸图 / Package Dimensions

T□-220

单位: mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

BT136： 为产品型号

600E： 为耐压分档

\*\*\*\*： 为生产批号代码，随生产批号变化。

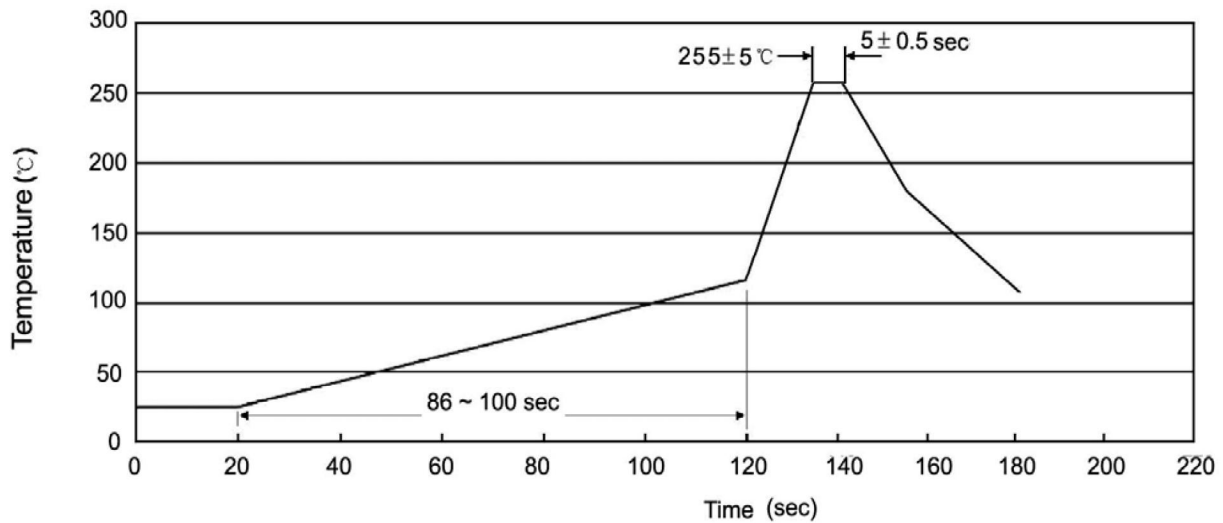
Note:

BR: Company Code

BT136: Product Type.

600E: Withstand Voltage Code.

\*\*\*\*: Lot No. Code, code change with Lot No.

**波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)**


说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

散件包装 / BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

**使用说明 / Notices**