

## BT137 Triac

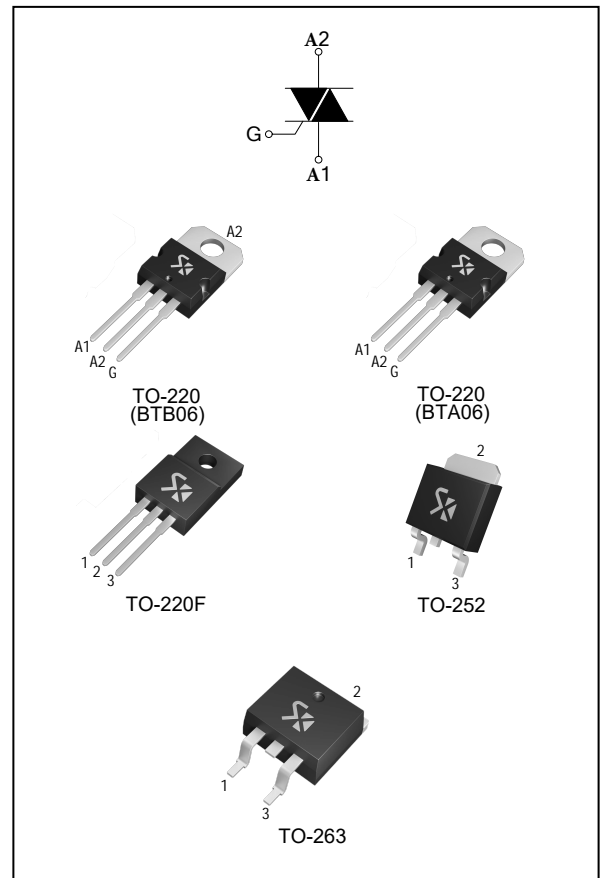
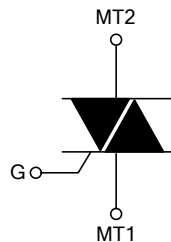
### DESCRIPTION

The BT137 is a silicon bidirectional device with NPNPN five-layer structure; Single-sided grooving technology with independent intellectual property rights, countertop glass passivation process; Multilayer metallized electrode on the back; It has high blocking voltage and high temperature stability;

The BT137 is widely used in dimming, temperature regulation, speed regulation, and electric vehicles Tools, solid state relays, vacuum cleaners, motor controls system and other fields, strong anti-interference ability.

### FEATURES

- \* Low gate trigger current
- \* Low holding current



### ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER			RATINGS	UNIT
$I_{T(RMS)}$	RMS On-State Current	BTA BTB	$T_c=80^{\circ}C$ $T_c=90^{\circ}C$	8	A
$I_{TSM}$	Non Repetitive Surge Peak On-State Current	F=50HZ	$t=20ms$	80	A
$I^2t$	$I^2t$ Value	$t_p=10ms$		64	A <sup>2</sup> S
di/dt	Critical Rate of Rise of On-State Current		$T_j=125^{\circ}C$	50	A/us
$V_{DRM}/V_{RRM}$	Repetitive Peak Off-State Voltage		$T_j=25^{\circ}C$	600/800	V

$I_{GM}$	Peak Gate Current	$t_p=20\mu s$	$T_j=125^\circ C$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation		$T_j=125^\circ C$	1	W
$T_{stg}$ $T_j$	Storage Junction Temperature Operating Junction Temperature			-40to+150 -40to+125	$^\circ C$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.  
 Absolute maximum ratings are stress ratings only and functional device operation is not implied.

#### ■ Electrical characteristics (three quadrants)

PARAMETER	SYMBOL	TEST CONDITIONS	Quadrants		RATINGS	UNIT
Gate Trigger Current	$I_{GT}$	$V_D=12V$ (DC) $R_L=100\Omega$	I II III	MAX	$\leq 50$	mA
Gate Trigger Voltage	$V_{GT}$			MAX	1.5	V
GateNon-Trigger Voltage	$V_{GD}$	$T_j=125^\circ C$		MIN	0.2	V
Holding Current (Note 1)	$I_H$	$I_T=0.5A$		MAX	60	mA
Latching Current	$I_L$	$I_G=1.2I_{GT}$		MAX	60	mA
					100	
Critical Rate of Rise of Off-State Voltage (Note 1)	$dv/dt$	$V_D=2/3V_{DRM}$ $T_j=125^\circ C$		MIN	500	V/ $\mu s$
Critical Rate of Rise of Off-State Voltage at Commutation (Note 1)	$(dv/dt)_c$	$T_j=125^\circ C$		MIN	10	V/ $\mu s$

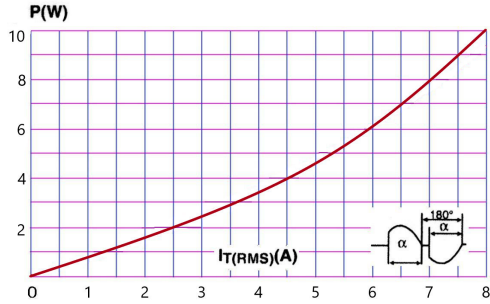
**■ Electrical characteristics (four quadrants)**

PARAMETER	SYMBOL	TEST CONDITIONS	Quadrants		RATINGS		UNIT
Gate Trigger Current	$I_{GT}$	$V_D=12V$ $R_L=100\Omega$	I II III IV	MAX	I II III	IV	mA
					$\leq 50$	$\leq 120$	
Gate Trigger Voltage	$V_{GT}$			MAX	1.5		V
GateNon-Trigger Voltage	$V_{GD}$	$T_j=125^\circ C$		MIN	0.2		V
HoldingCurrent (Note 1)	$I_H$	$I_T=0.5A$		MAX	60		mA
Latching Current	$I_L$	$I_G=1.2I_{GT}$		MAX	60		mA
					100		
Critical Rate of Rise of Off-State Voltage (Note 1)	$dv/dt$	$V_D=2/3V_{DRM}$ $T_j=125^\circ C$		MIN	500		V/us
Critical Rate of Rise of Off-State Voltage at Commutation (Note 1)	$(dv/dt)_c$	$T_j=125^\circ C$		MIN	10		V/us

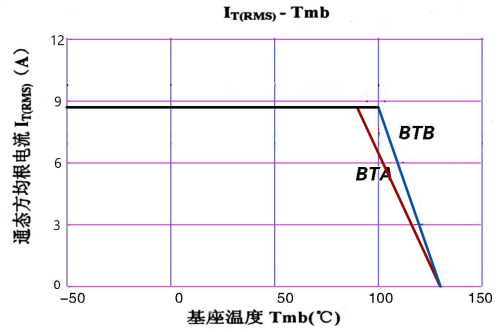
**■ Static parameters**

SYMBOL	PARAMETER			RATINGS	UNIT
$V_{TM}$	Peak On-State Voltage (Note 1)	$T_j=25^\circ C$ $I_{TM}=16A$	MAX	1.50	V
$V_{T0}$	Threshold voltage	$T_j=125^\circ C$	MAX	0.86	V
$R_d$	Resistance	$T_j=125^\circ C$	MAX	36.6	$m\Omega$
$I_{DRM}$ $I_{RRM}$	Repetitive Peak Off-State Current	$T_j=25^\circ C$	MAX	5	$\mu A$
		$T_j=125^\circ C$		1	mA
$R_{th(j-c)}$	Junction to Case (DC)	BTA		2.05	$^\circ C/W$
		BTB		1.25	

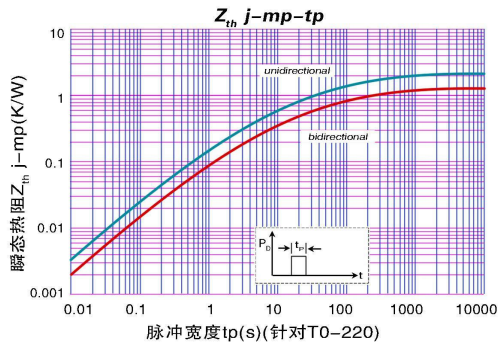
● Product Characteristic Curve



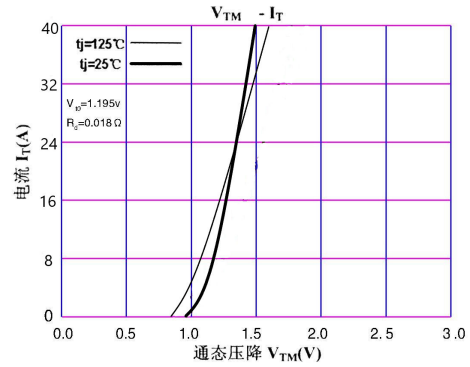
1、功耗与电流曲线 (180°C)



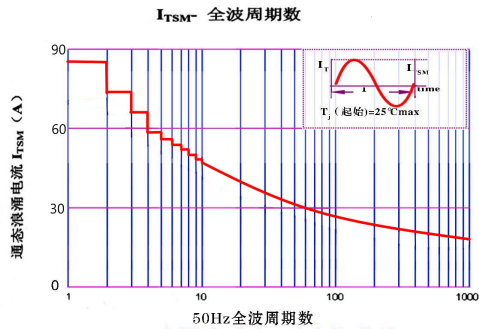
2、壳温与通态方均根电流曲线



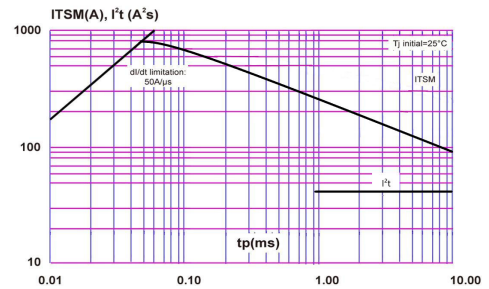
3、瞬态热阻曲线



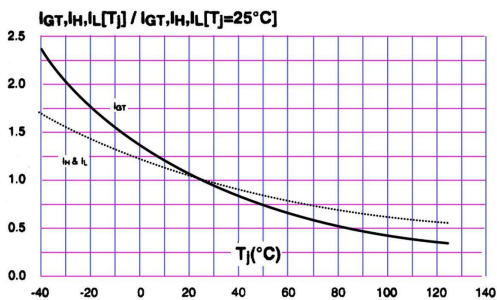
4、通态伏安特性曲线



5、浪涌电流与周波数曲线



6、 $I_{TSM}$ - $t$ ,  $I^2t$ - $t$  曲线



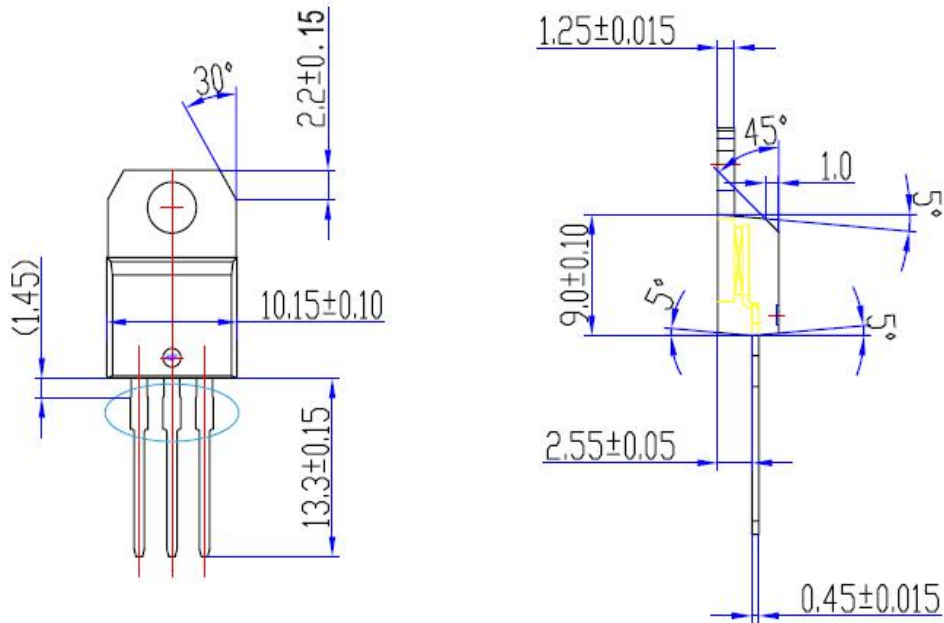
7、门极触发特性曲线

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

TO-220

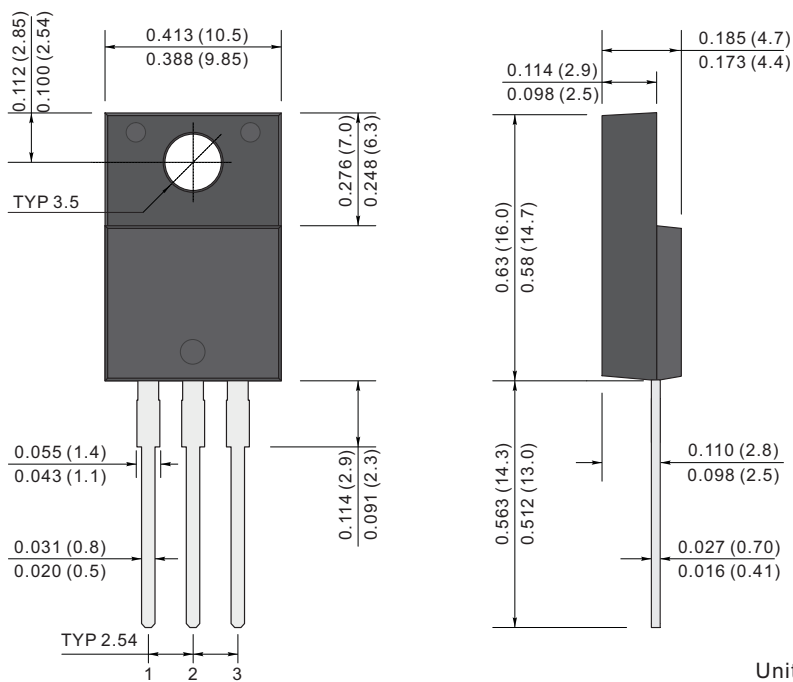
● 单位: mm(±0.1)



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

TO-220F



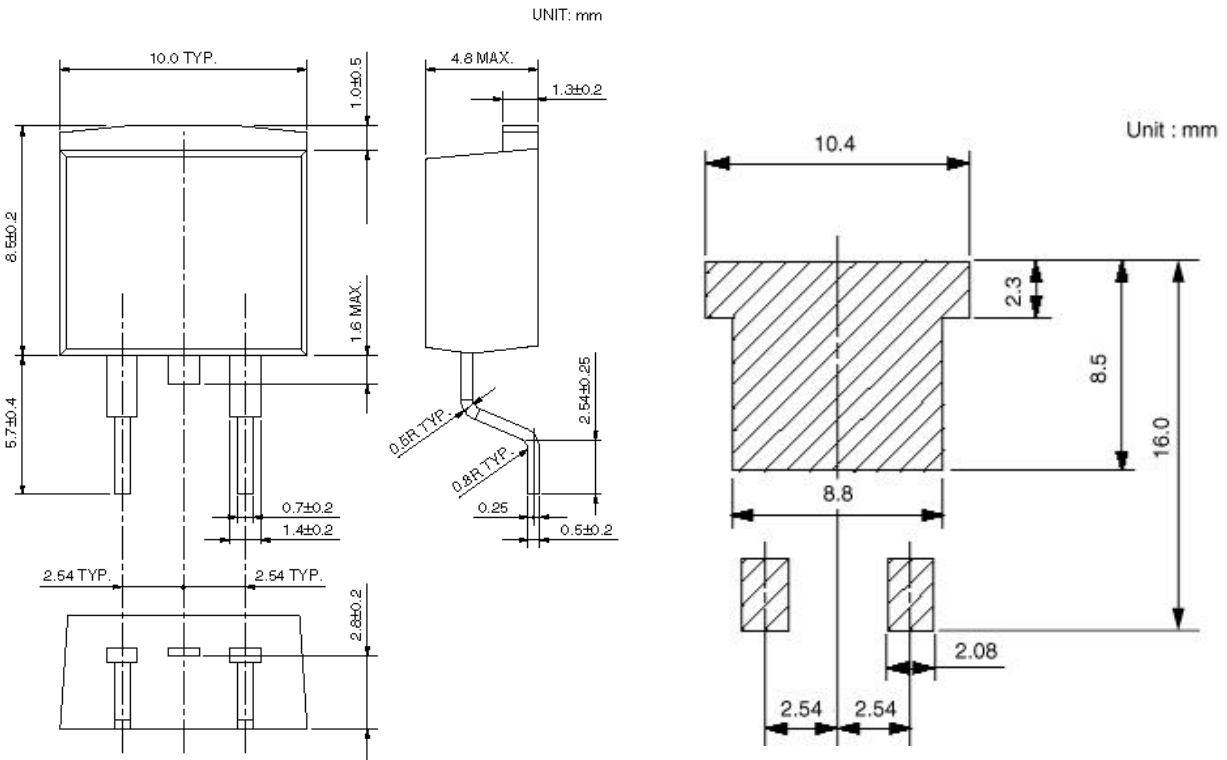
Unit: inch (mm)

## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

TO-263

● 单位: mm(±0.1)



: The area without solder plated

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

TO-252

●单位: mm(±0.1)

