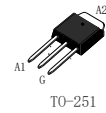
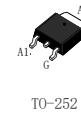
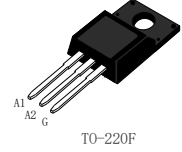
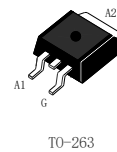
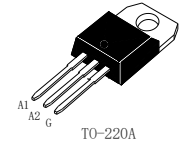
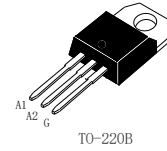
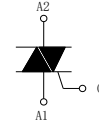


**Product features and main applications**

NPNPN five-layer structure of silicon bidirectional devices; with independent intellectual property rights of single-sided digging technology, table glass passivation process; multi-layer metallized electrodes on the back; with high blocking voltage and high temperature stability.

**Mainly used in:**

vacuum cleaners, power tools and other motor speed controllers; solid state relays; heating controllers (temperature regulation); other phase control circuits.



**Characteristics**

Symbol	Parameter name		value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	BTA BTB	$T_c=80^{\circ}C$ $T_c=90^{\circ}C$	4 A
$I_{TSM}$	Non repetitive surge peak on-state current (full cycle, $T_j$ initial = 25 °C)	F=50HZ	$t_p=20ms$	40 A
$I^2t$	$I^2t$ value for fusing	$t_p=10ms$		8 $A^2S$
di/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$ , $t_r \leq 100 ns$	$T_j=125^{\circ}C$		50 A/us
$V_{DRM}/V_{RRM}$	Off state repetitive peak voltage Reverse repetitive peak voltage	$T_j=25^{\circ}C$		600/800 V
$I_{GM}$	Peak gate current	$t_p=20us$	$T_j=125^{\circ}C$	4 A
$P_{G(AV)}$	Average gate power dissipation		$T_j=125^{\circ}C$	0.5 W
$T_{stg}$ $T_j$	Storage junction temperature range Operating junction temperature range		-40to+150 -40to+125 $^{\circ}C$	

**Table 2. Electrical characteristics (Tj=25°C, unless otherwise specified) -- 3 quadrants**

Symbol	Name and test conditions	Quadrant	Range	value	Unit
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =100Ω	I	MAX	25	mA
V <sub>GT</sub>		II III		1.5	V
V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> , R <sub>L</sub> =3.3 kΩ T <sub>j</sub> =125°C		MIN	0.2	V
I <sub>H</sub>	I <sub>T</sub> =0.5A		MAX	40	mA
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>		MAX	50	mA
dv/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> T <sub>j</sub> =125°C		MIN	500	V/us
(dv/dt) <sub>c</sub>	Critical rise rate of commutation voltage T <sub>j</sub> = 125°C		MIN	10	V/us

**Table 3. Electrical characteristics (Tj = 25 °C, unless otherwise specified) - Standard Triac (4 quadrants)**

Symbol	Name and test conditions	Quadrant	Range	value		Unit
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =100Ω	I II III	MAX	I-III	IV	mA
V <sub>GT</sub>				30	80	
V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> , R <sub>L</sub> =3.3 kΩ T <sub>j</sub> =125°C		MIN	0.2		V
I <sub>H</sub>	I <sub>T</sub> =0.5A		MAX	60		mA
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>		MAX	100		mA
dv/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> T <sub>j</sub> =125°C		MIN	500		V/us
(dv/dt) <sub>c</sub>	Critical rise rate of commutation voltage T <sub>j</sub> = 125°C		MIN	10		V/us

**Static Parameters**

Symbol	Parameter name		Range	value	Unit
$V_{TM}$	$I_{TM}=5.5A$	$T_j=25^{\circ}C$	MAX	1.50	V
$V_{T0}$	threshold on-state voltage	$T_j=125^{\circ}C$	MAX	0.92	V
$R_d$	Dynamic resistance	$T_j=125^{\circ}C$	MAX	36.6	$m\Omega$
$I_{DRM}$	VDRM = VRRM	$T_j=25^{\circ}C$	MAX	5	$\mu A$
$I_{RRM}$		$T_j=125^{\circ}C$		0.5	mA
$R_{th(j-c)}$	Junction to ambient	BTA		2.05	$^{\circ}C/W$
		BTB		1.25	

**BT136 characteristic curve**

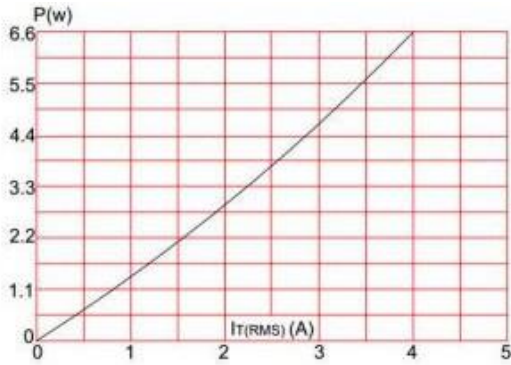


FIG.1: Maximum power dissipation versus RMS on-state current

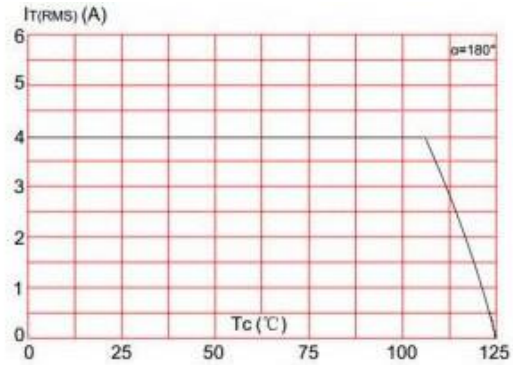


FIG.2: RMS on-state current versus case temperature

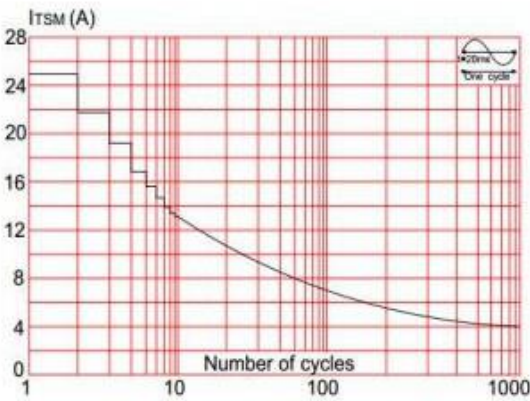


FIG.3: Surge peak on-state current versus number of cycles

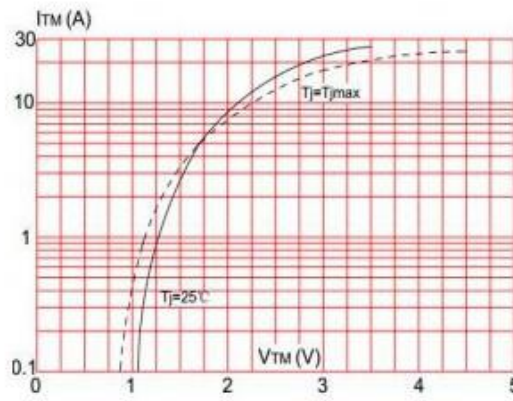


FIG.4: On-state characteristics (maximum values)

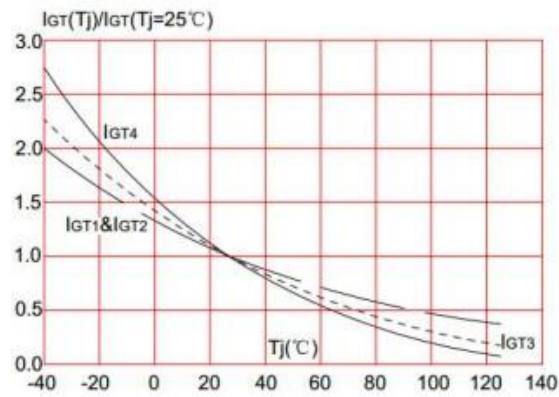
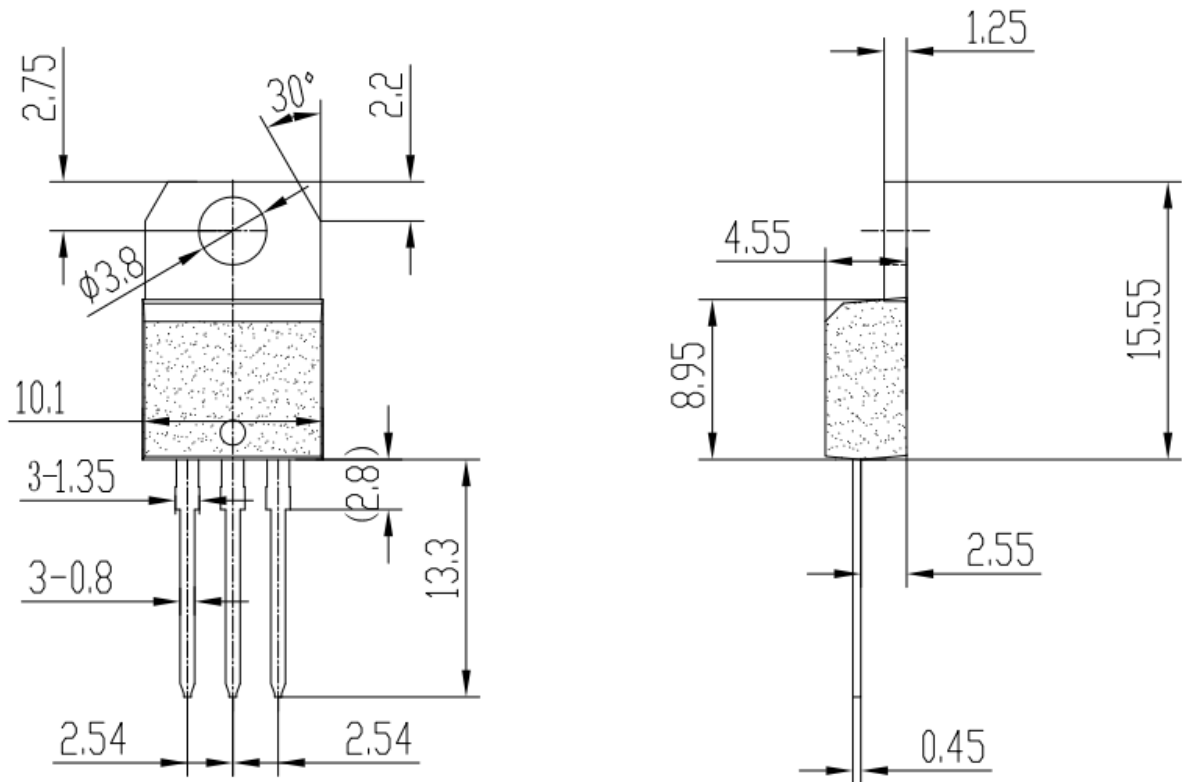


FIG.5: Relative variations of gate trigger current, holding current and latching current versus junction temperature

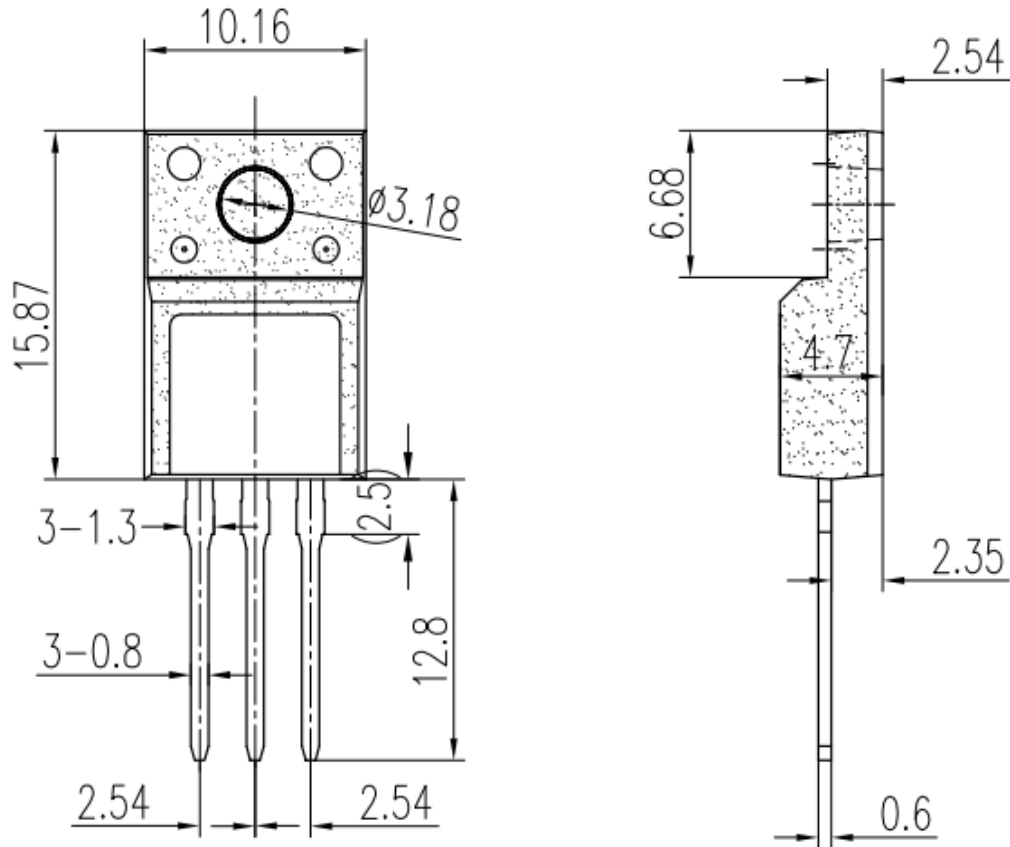
**TO-220 Dimensional drawing**

Unit: mm ( $\pm 0.1$ )



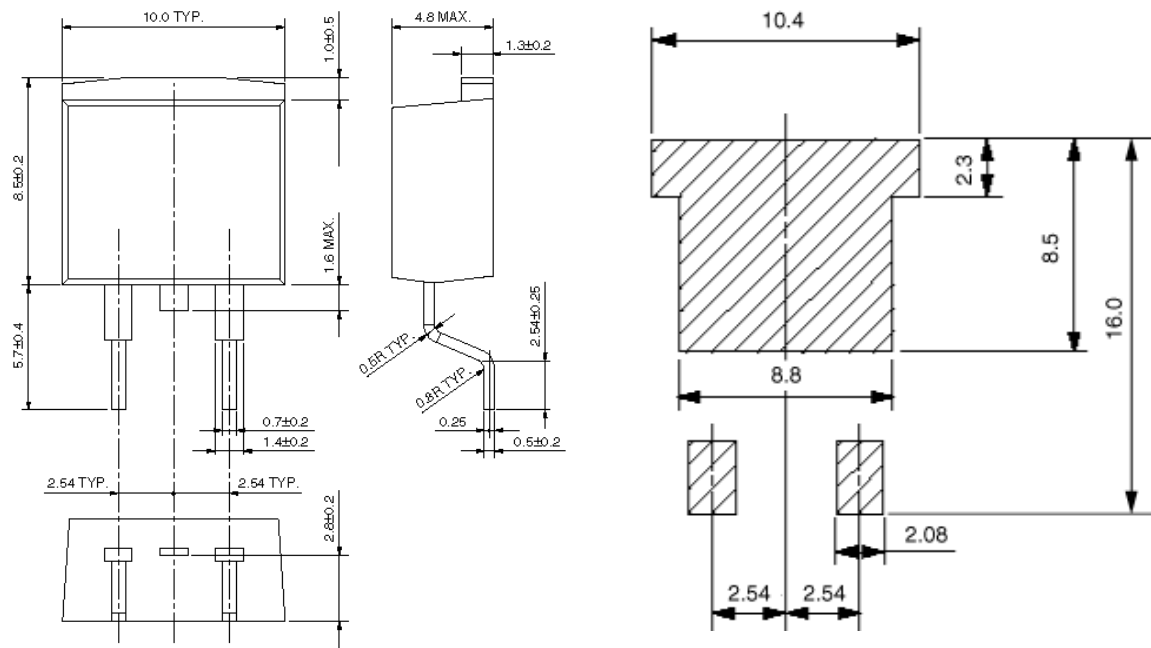
**TO-220F Dimensional drawing**

Unit: mm ( $\pm 0.1$ )



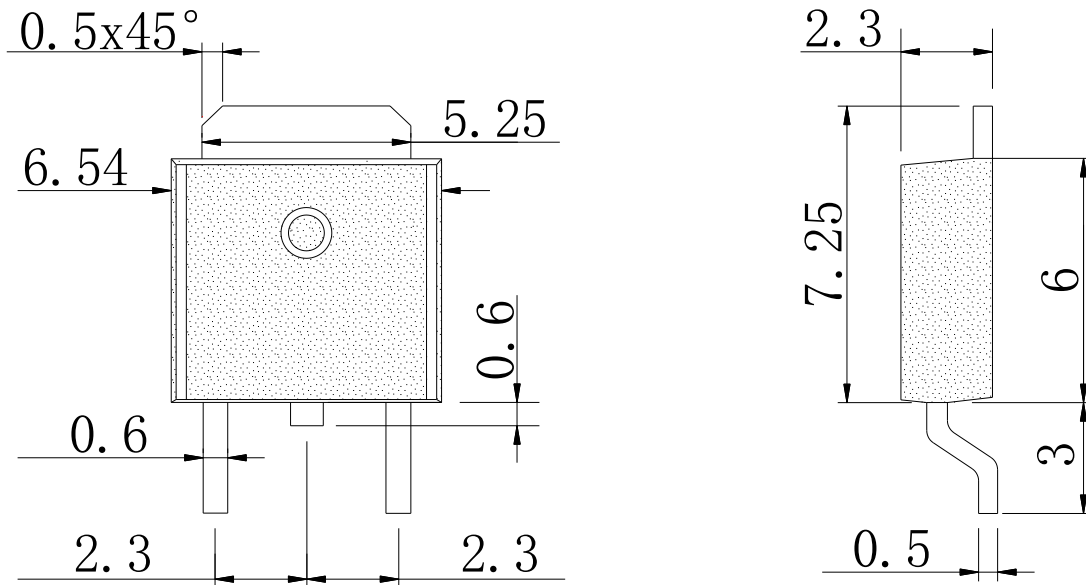
**TO-263 Dimensional drawing**

Unit: mm ( $\pm 0.1$ )



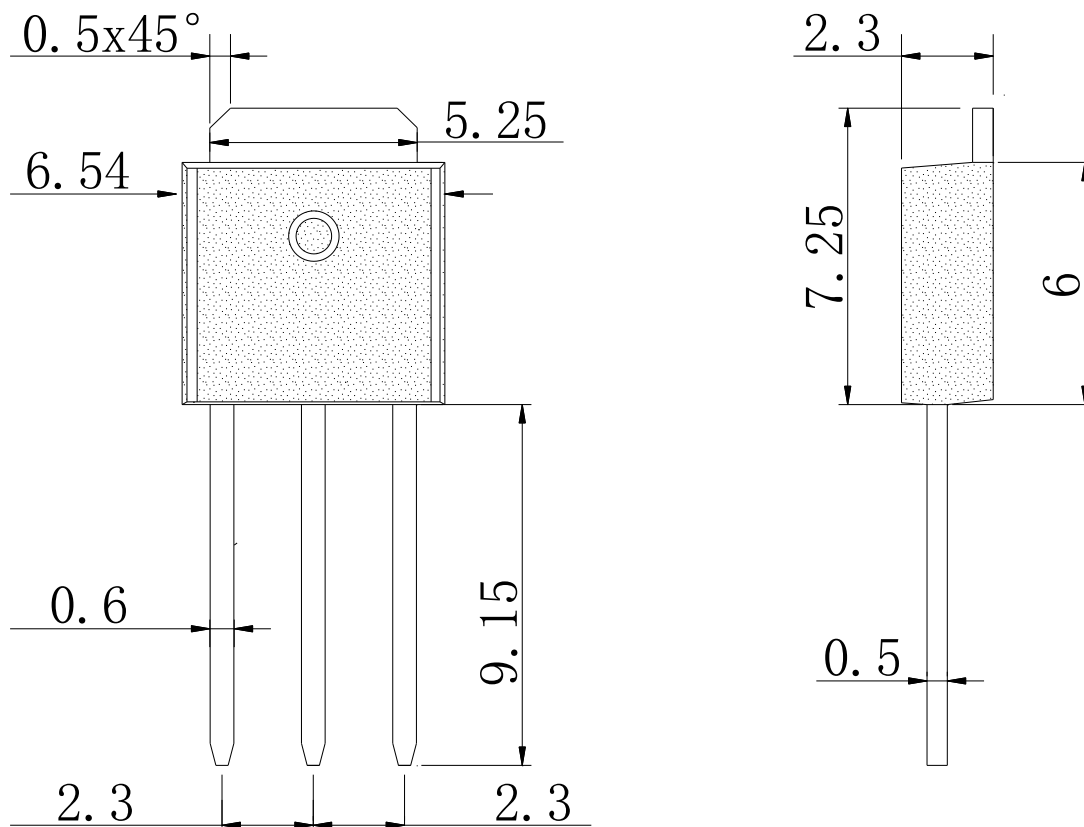
**TO-252 Dimensional drawing**

Unit: mm ( $\pm 0.1$ )

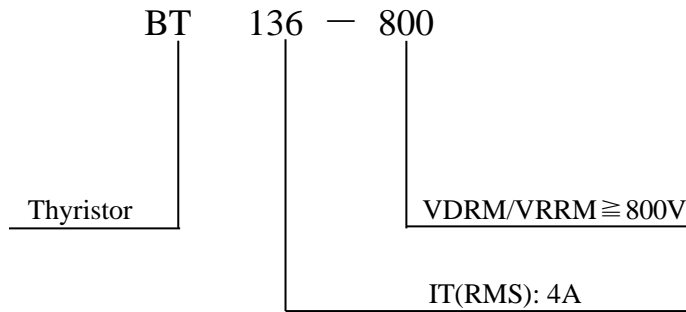


**TO-251 Dimensional drawing**

Unit: mm ( $\pm 0.1$ )



**Product Marking Comments**



AXXXXXXX \_\_\_\_\_ Production Lot Number

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