

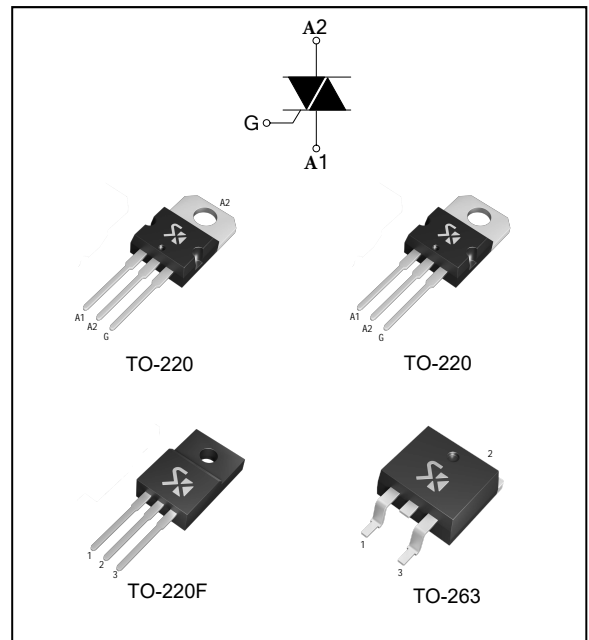
Silicon Controlled Rectifier

Features

- NPNPN four-layer silicon unidirectional device;
- With independent intellectual property rights of single-side grooving technology, table glass passivation process;
- Multilayer metallized electrode on the back;
- High blocking voltage and high temperature stability

Application

- Solid state relay;
- Phase-controlled circuit;
- Adjustable heating controller;
- Speed control controller;



■ ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER			RATINGS	UNIT
$I_{T(RMS)}$	RMS On-State Current	BTA BTB	$T_c=80^{\circ}C$ $T_c=90^{\circ}C$	16	A
I_{TSM}	Non Repetitive Surge Peak On-State Current	F=50HZ	t=20ms	160	A
I^2t	I^2t Value	tp=10ms		144	A ² 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	tp=20us	$T_j=125^{\circ}C$	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	$^{\circ}C$

■ 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	≤ 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
HoldingCurrent	I_H	$I_T=0.5A$		MAX	60		mA
Latching Current	I_L	$I_G=1.2I_{GT}$	MAX	I -III	60		mA
				II	100		
Critical Rate of Rise of Off-State Voltage	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	$(dv/dt)_c$	$T_j=125^\circ C$		MIN	10		V/us

■ 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
					≤ 50	≤ 120		
Gate Trigger Voltage	V_{GT}	$T_j=125^\circ C$		MAX	1.5		V	
GateNon-Trigger Voltage	V_{GD}			MIN	0.2		V	
HoldingCurrent	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	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	$(dv/dt)_c$	$T_j=125^\circ C$		MIN	10		V/us	

■ Static parameters

SYMBOL	PARAMETER			RATINGS	UNIT
V_{TM}	Peak On-State Voltage	$T_j=25^{\circ}C$ $I_{TM}=32A$	MAX	1.50	V
V_{T0}	Threshold voltage	$T_j=125^{\circ}C$	MAX	0.87	V
R_d	Resistance	$T_j=125^{\circ}C$	MAX	14.6	$m\Omega$
I_{DRM} I_{RRM}	Repetitive Peak Off-State Current	$T_j=25^{\circ}C$	MAX	5	μA
		$T_j=125^{\circ}C$		1	mA
$R_{th(j-c)}$	Junction to Case (DC)	BTA		2.10	$^{\circ}C/W$
		BTB		1.30	

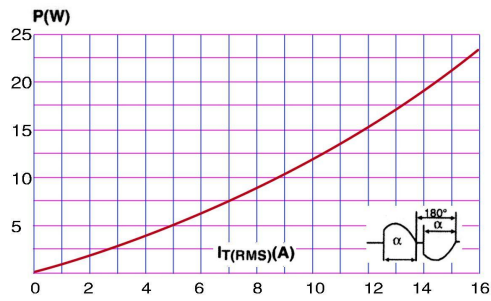


FIG.1: Maximum power dissipation versus RMS on-state current

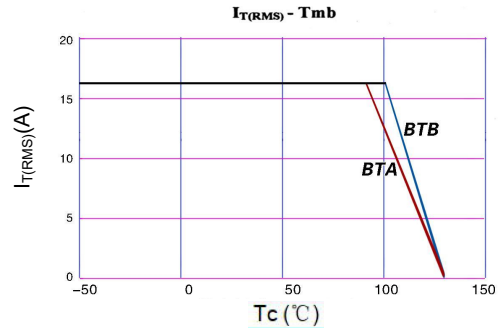


FIG.2: RMS on-state current versus case temperature

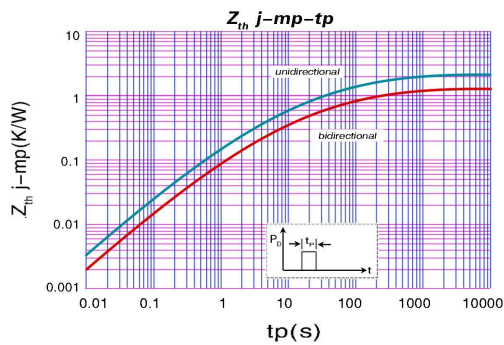


FIG.3: Transient thermal resistance diagram

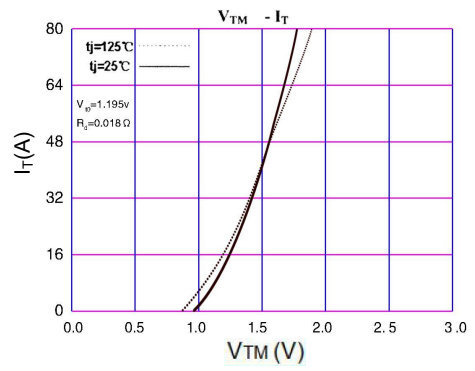


FIG.4: On-state characteristics (maximum values)

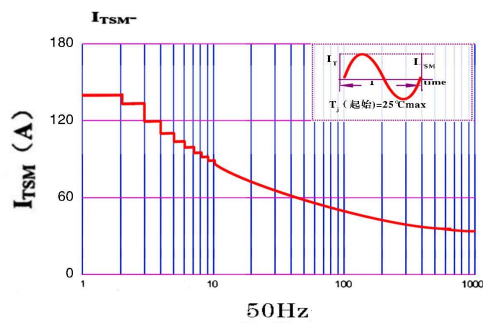


FIG.5: Surge peak on-state current versus number of cycles

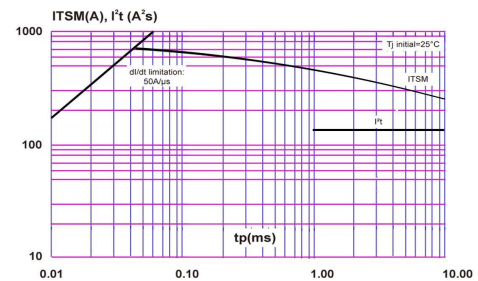


FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t .

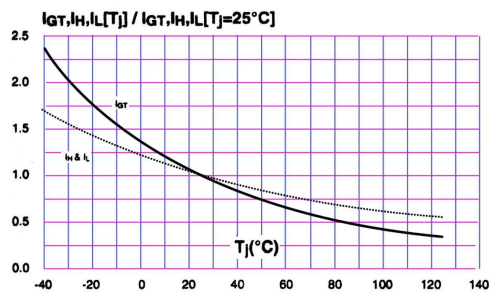


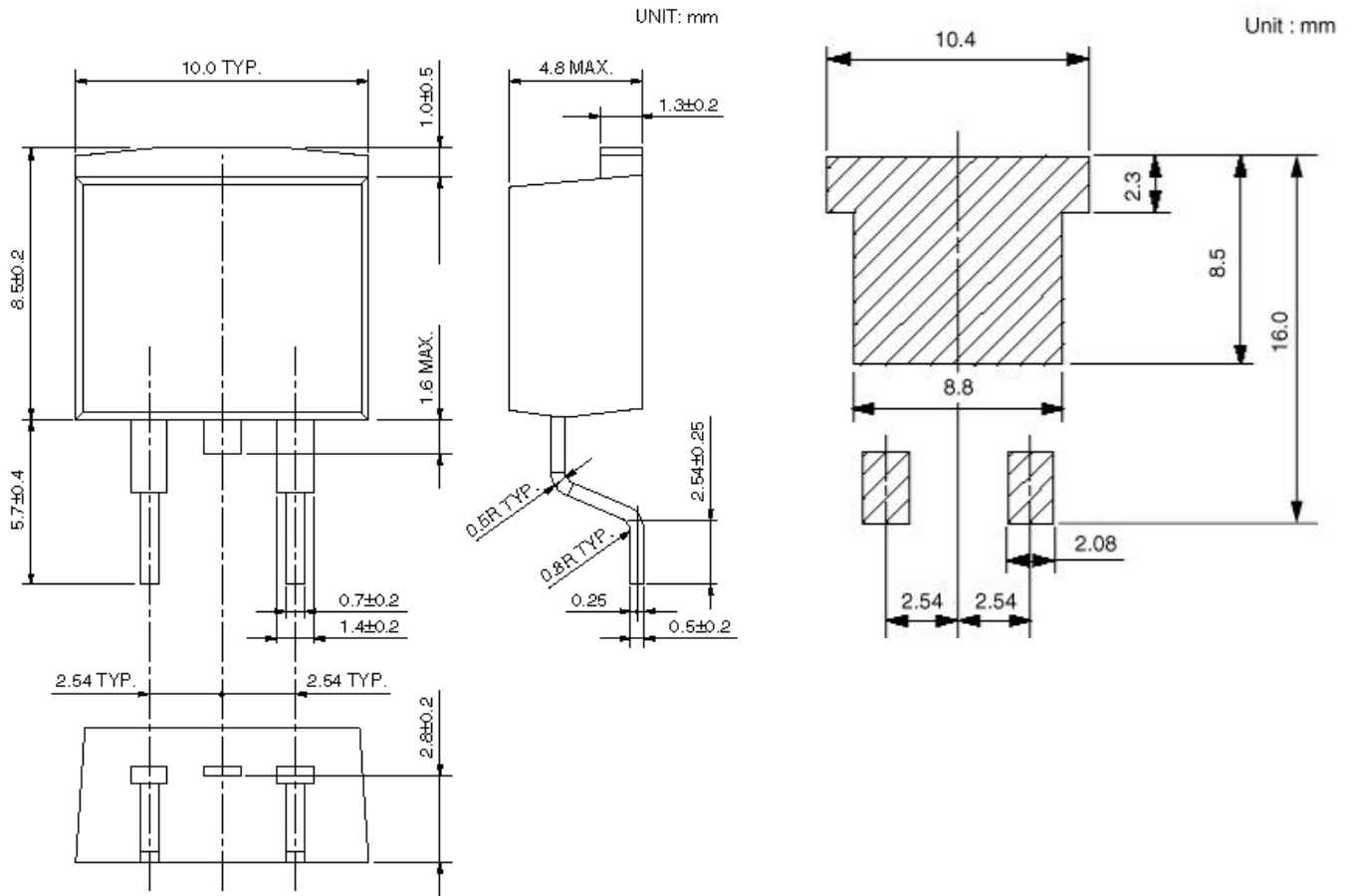
FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

PACKAGE OUTLINE

Plastic surface mounted package;

TO-263

●Unit: mm(± 0.1)



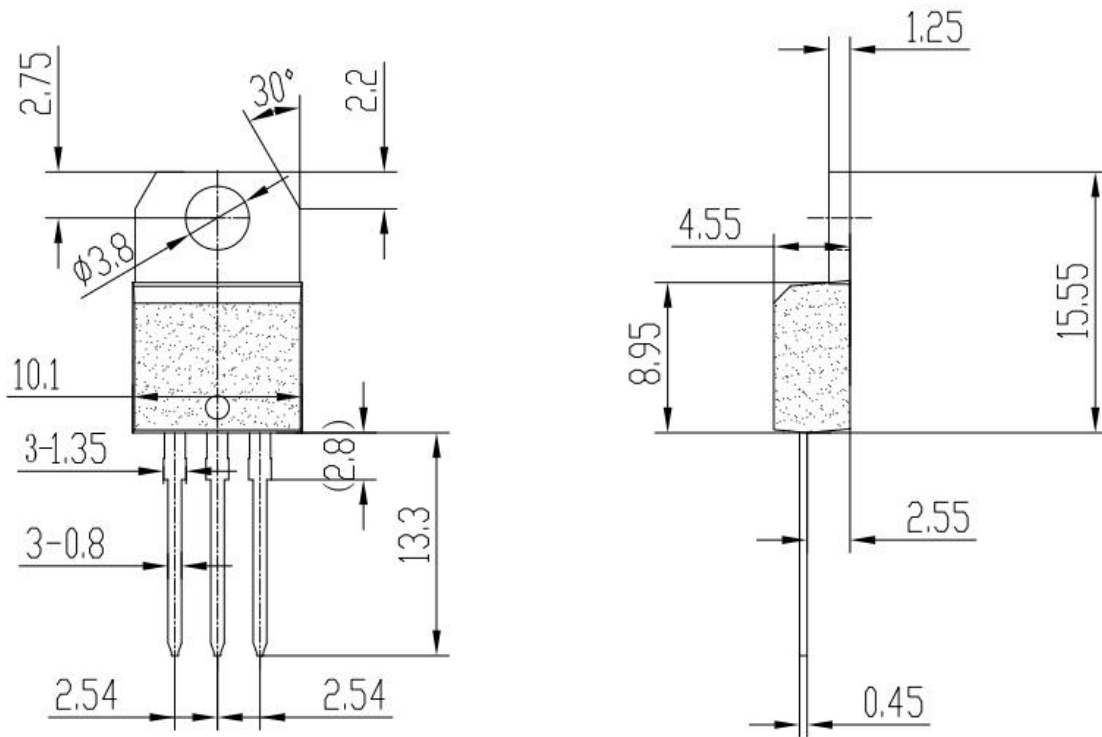
: The area without solder plated

PACKAGE OUTLINE

Plastic surface mounted package;

TO-220

●Unit: mm(±0.1)

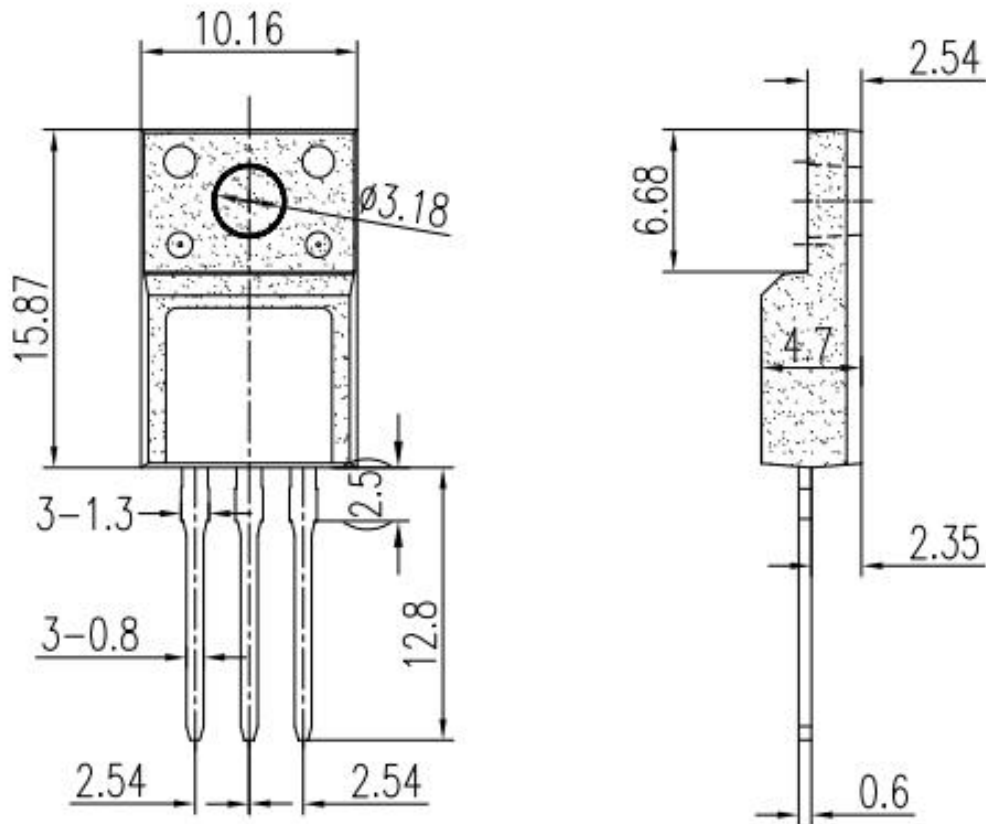


PACKAGE OUTLINE

Plastic surface mounted package;

TO-220F

●Unit: mm(±0.1)



● Product marking comments:

