

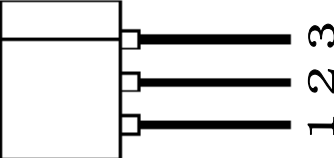
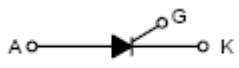
1、Description

PNPN devices designed for high volume consumer applications such as temperature, light and speed control; process and remote control, and warning systems where reliability of operation is important.

2、Features

- Sensitive gate allows triggering by micro-controllers and other logic circuits
- Flat, Rugged, Thermopad Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Practical Level Triggering and Holding Characteristics
- Glass-Passivated Surface for Reliability and Uniformity
- Blocking voltage to 400 thru 800 volts
- On-state RMS current to 4A RMS at 80°C

3、Pinning information

PIN	Description	Simplified outline	Symbol
1	Cathode (K)	 TO-202	
2	Anode (A)		
3	Gate (G)		

4、Quick reference data

SYMBOL	PARAMETER	MAX			UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state voltages	-D 400	-M 600	-N 800	V
$I_{T(AV)}$	Average on-state current	2.55			A
$I_{T(RMS)}$	RMS on-state current	4			A
I_{TSM}	Non-repetitive peak on-state current	38			A
I_{GT}	Gate trigger current	200			μA

5、Thermal characteristics

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Thermal resistance, -- Junction to Case		-	-	3.0	°C/W
$R_{\theta JA}$	Thermal resistance --Junction to Ambient				75	°C/W
T_L	Lead Solder Temperature	<1/16" from case, 10 secs max	-	260	-	°C

6. Limiting value

Limiting values in accordance with the Maximum System(IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX			UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state voltages		-	-D 400	-M 600	-N 800	V
$I_{T(AV)}$	Average on-state current	180 Conduction Angles, $T_C = 80^\circ C$	-	2.55			A
$I_{T(RMS)}$	RMS on-state current	180 Conduction Angles, $T_C = 80^\circ C$	-	4.0			A
I_{TSM}	Non-repetitive peak on-state current	1/2 Cycle, Sine Wave, 60 Hz, $T_J = +110^\circ C$	-	38			A
I^2t	Circuit Fusing Considerations	$t = 8.3$ ms	-	1.65			A ² s
di_T/dt	Repetitive rate of rise of on-state current after triggering	$I_{TM} = 10$ A; $I_G = 50$ Ma; $di_G/dt = 50$ m A/s	-	50			A/ μ s
I_{GM}	Peak gate current	Pulse Width ≤ 1.0 sec, $T_C = 80^\circ C$	-	0.2			A
V_{RGM}	Peak reverse gate voltage	$I_{GR} = 10$ A	-	6			V
P_{GM}	Peak gate power	Pulse Width ≤ 1.0 sec, $T_C = 80^\circ C$	-	0.5			W
$P_{G(AV)}$	Average gate power	Pulse Width ≤ 1.0 sec, $T_C = 80^\circ C$	-	0.1			W
T_{stg}	Storage temperature		-40	150			$^\circ C$
T_J	Operating junction temperature		-	125			$^\circ C$

7. Characteristics

$T_J = 25^\circ C$ unless otherwise stated

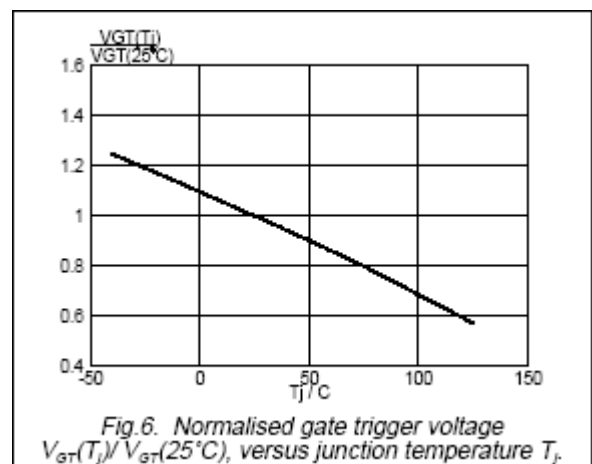
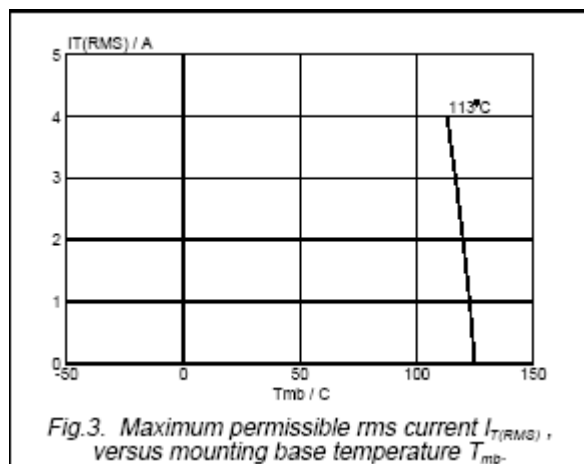
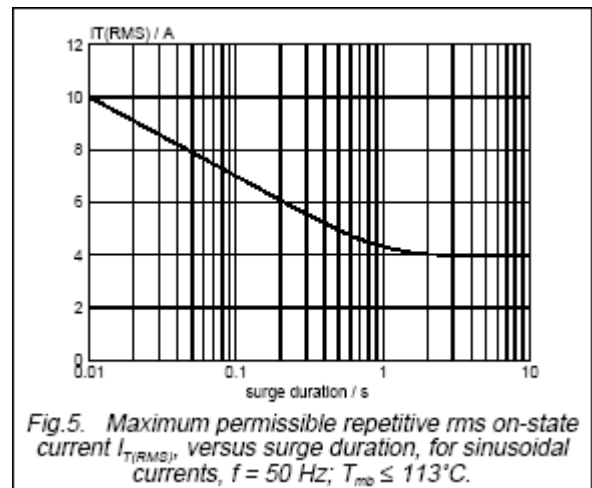
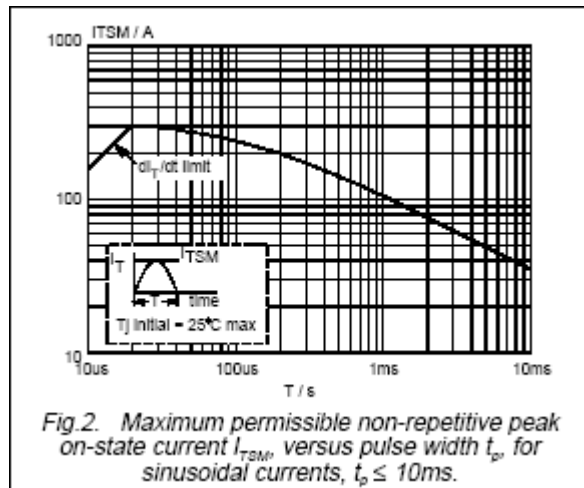
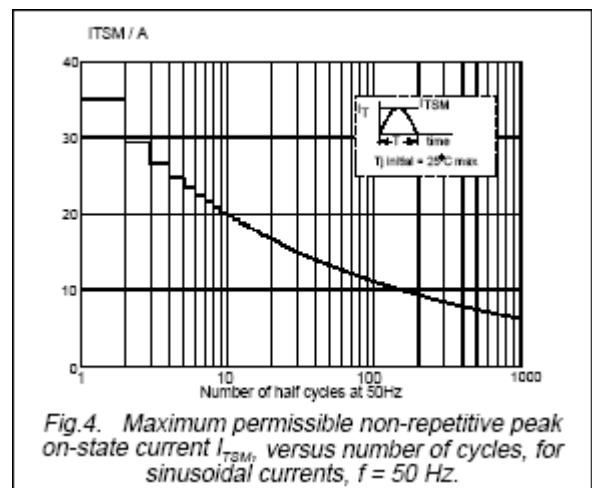
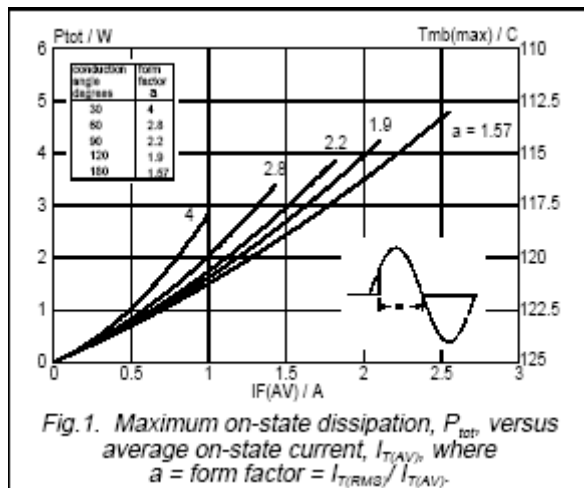
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
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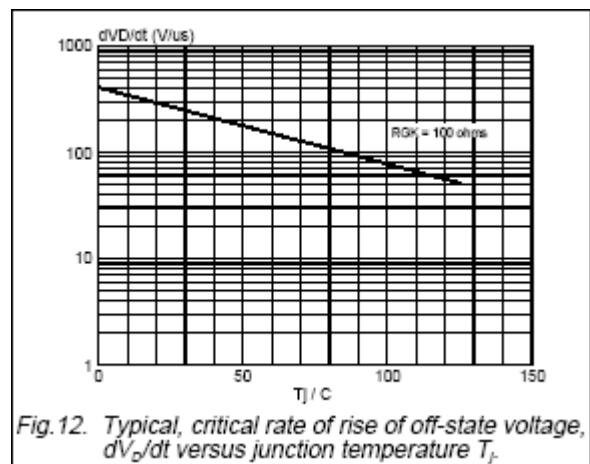
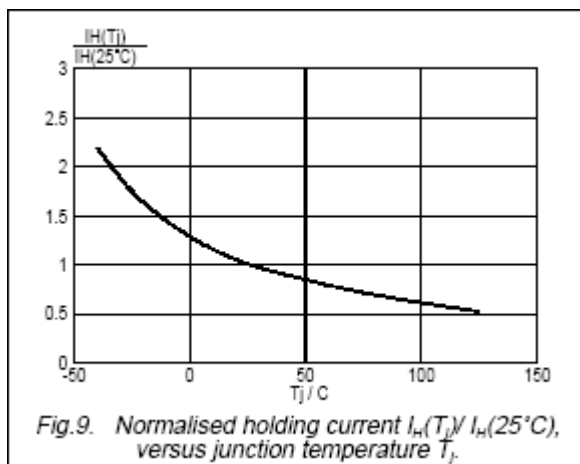
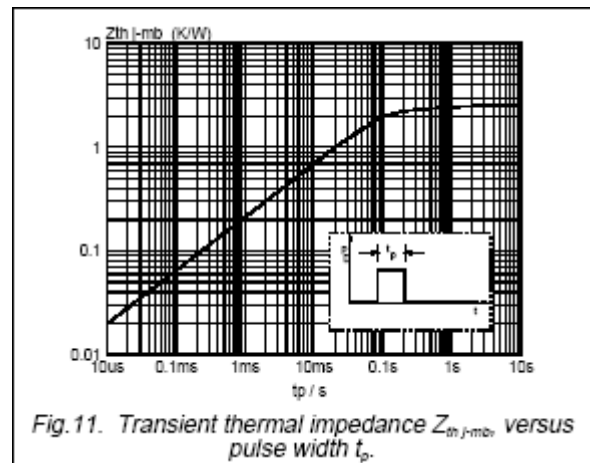
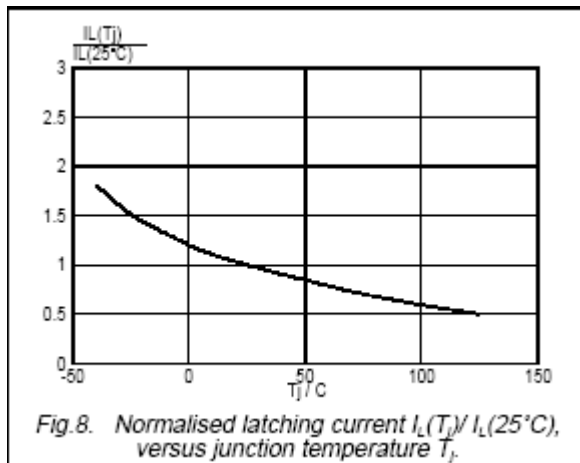
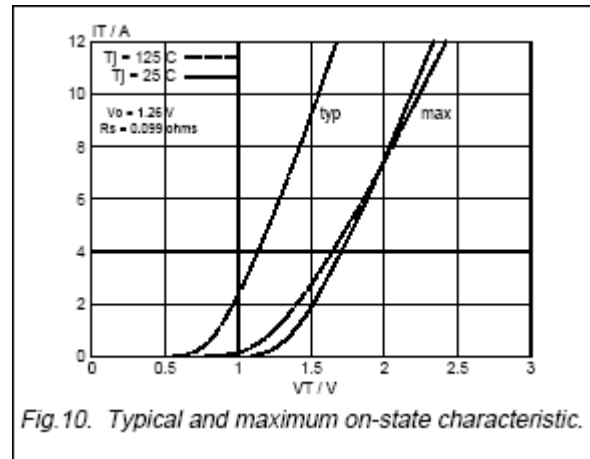
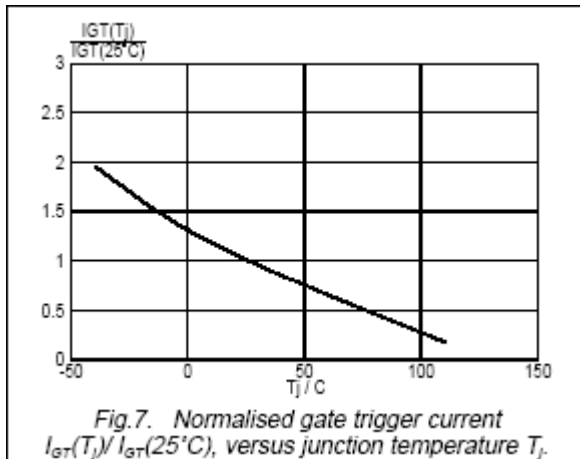
Static characteristics

I_{DRM} , I_{RRM}	Peak Repetitive Forward Or Reverse Blocking Current	$V_D = \text{Rated } V_{DRM} \text{ and } V_{RRM}, R_{GK} = 1K\Omega$ $T_C = 25^\circ C$ $T_C = 110^\circ C$	- -	- -	10 200	μA μA
V_{TM}	Peak Forward On-State Voltage	$I_{TM} = 4$ A			2.2	V
I_{GT}	Gate trigger current (Continuous dc) $T_J = 25^\circ C$	$V_{AK} = 6$ Vdc, $R_L = 100$ Ohms				
		X0405	-	30	50	μA
		X0402	-	30	200	
I_L	Latching current	$V_{AK} = 6$ V; $I_{GT} = 20$ Ma $T_J = 25^\circ C$	-	0.20	5.0	mA
		$T_J = -40^\circ C$	-	0.35	7.0	
I_H	Holding current	$V_{AK} = 6$ V; (Initiating Current = 20 mA, Gate Open) $T_J = 25^\circ C$	-	0.19	3.0	mA
		$T_J = -40^\circ C$	-	0.33	6.0	
V_{GT}	Gate trigger voltage	$V_{AK} = 6$ V; $I_T = 0.1$ A $T_J = 25^\circ C$	0.4 0.5	0.60 0.75	0.8 1.0	V
		$T_J = -40^\circ C$				
V_{GD}	Off-state leakage Voltage	$V_{AK} = 12$ V, $R_L = 100$ Ohms, $T_J = 110^\circ C$	0.2	-	-	V

Dynamic Characteristics

dv_D/dt	Critical rate of rise of off-state voltage	$V_{AK} = \text{Rated } V_{DRM}$, Exponential Waveform, $R_{GK} = 1000$ Ohms, $T_J = 110^\circ C$	-	8.0	-	V/ μ s
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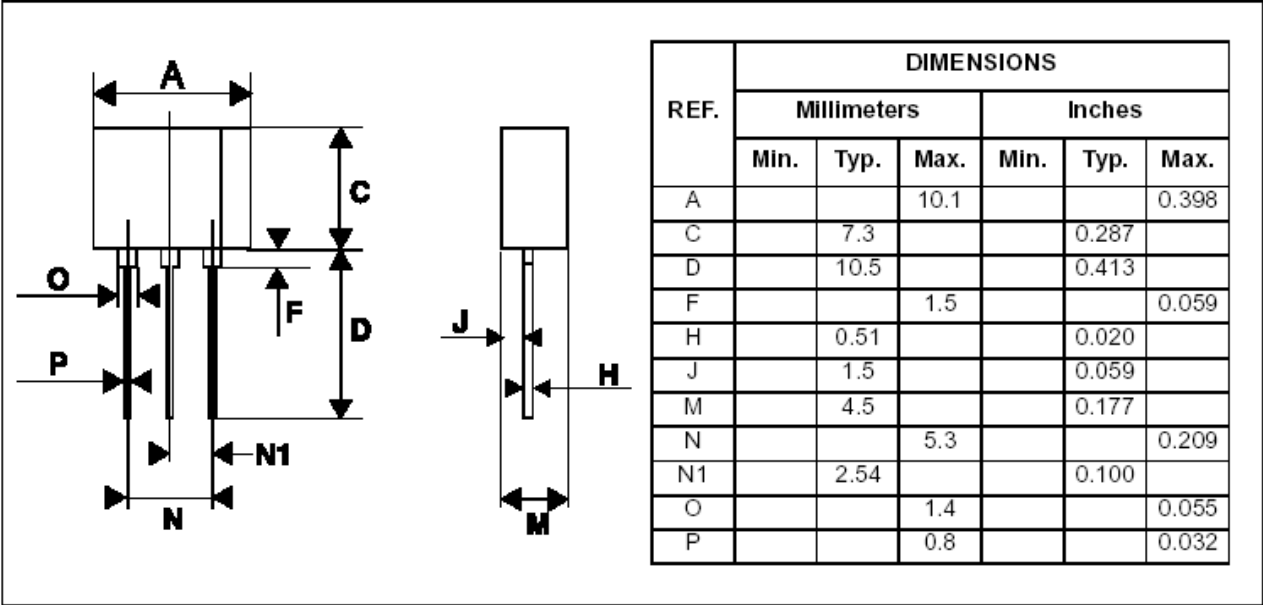




8、Package outline

PACKAGE MECHANICAL DATA

TO202-3 (Plastic)



9、Marking

