P01xxxA

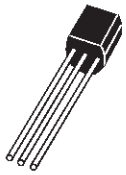
SENSITIVE SCR

FEATURES

- $I_{T(RMS)}$ = 0.8A
- V_{DRM} / V_{RRM}= 200V to 600V

DESCRIPTION

High performance planar technology. These parts are intended for general purpose applications where low gate sensitivity is required.



TO92

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)	TI= 55°C	0.8	A
$I_{T(AV)}$	Mean on-state current (180° conduction angle)	TI= 55°C	0.5	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	tp = 8.3 ms	8	A
		tp = 10 ms	7	
I^2t	I^2t Value for fusing	tp = 10 ms	0.24	A^2s
dI/dt	Critical rate of rise of on-state current I_G = 10 mA di_G/dt = 0.1 A/µs.		30	A/µs
T_{stg} T_j	Storage temperature range Operating junction temperature range		- 40, + 150 - 40, + 125	°C
Tl	Maximum lead temperature for soldering during 10s (at 2.0mm from case)		260	°C

Symbol	Parameter	Voltage			Unit
		B	D	M	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage T_j = 125°C R_{GK} = 1K	200	400	600	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	150	°C/W
Rth(j-l)	Junction to leads for DC	80	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{G\ (AV)}$= 0.1 W P_{GM} = 2 W (tp = 20 µs) I_{GM} = 1 A (tp = 20 µs)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			SENSITIVITY					Unit
				09	02	11	18	15	
I_{GT}	V_D=12V (DC) R_L=140Ω	Tj= 25°C	MIN			4	0.5	15	µA
			MAX	1	200	25	5	50	
V_{GT}	V_D=12V (DC) R_L=140Ω	Tj= 25°C	MAX	0.8					V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ R_{GK} = 1 KΩ	Tj= 125°C	MIN	0.1					V
V_{GRM}	I_{RG} =10µA	Tj= 25°C	MIN	8					V
tgd	V_D=V_{DRM} I_{TM}= 3 x $I_{T(AV)}$ dI_G/dt = 0.1A/µs I_G = 10mA	Tj= 25°C	TYP	0.5					µs
I_H	I_T= 50mA R_{GK} = 1 KΩ	Tj= 25°C	MAX	5				7	mA
I_L	I_G=1mA R_{GK} = 1 KΩ	Tj= 25°C	MAX	6				8	mA
V_{TM}	I_{TM}= 1.6A tp= 380µs	Tj= 25°C	MAX	1.95					V
I_{DRM} I_{RRM}	V_D = V_{DRM} R_{GK} = 1 KΩ V_R = V_{RRM}	Tj= 25°C	MAX	B/D: 1 - M: 10					µA
		Tj= 125°C	MAX	100					µA
dV/dt	V_D = 67%V_{DRM} R_{GK} = 1 KΩ	Tj= 125°C	MIN	50	75	80	75	100	V/µs
tq	I_{TM}= 3 x $I_{T(AV)}$ V_R=35V dI/dt=10A/µs tp=100µs dV/dt=10V/µs V_D= 67%V_{DRM} R_{GK} = 1 KΩ	Tj= 125°C	MAX	200					µs

Fig.1 : Maximum average power dissipation versus average on-state current.

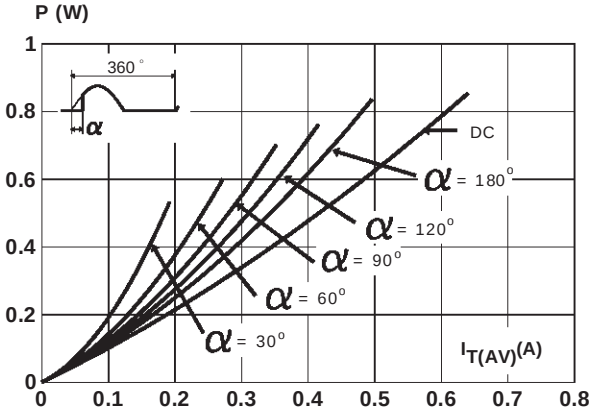


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and Ttab).

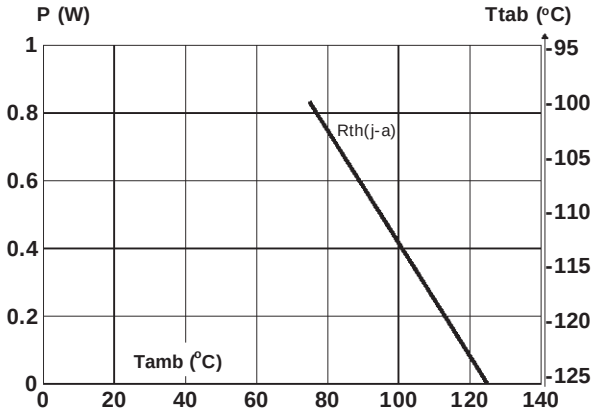


Fig.3 : Average on-state current versus tab temperature.

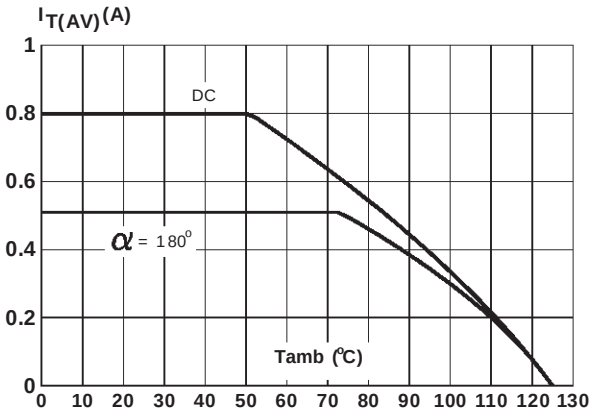


Fig.4 : Relative variation of thermal impedance junction to ambient versus pulse duration.

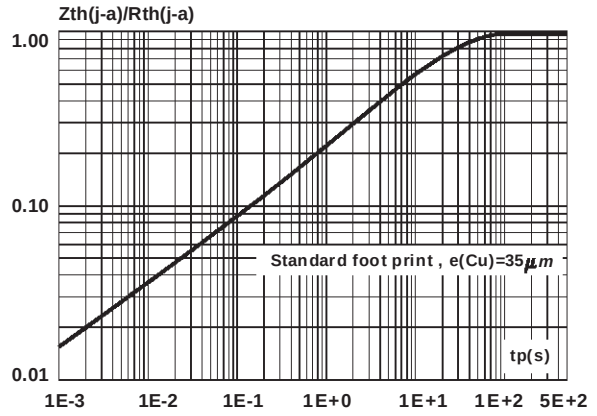


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

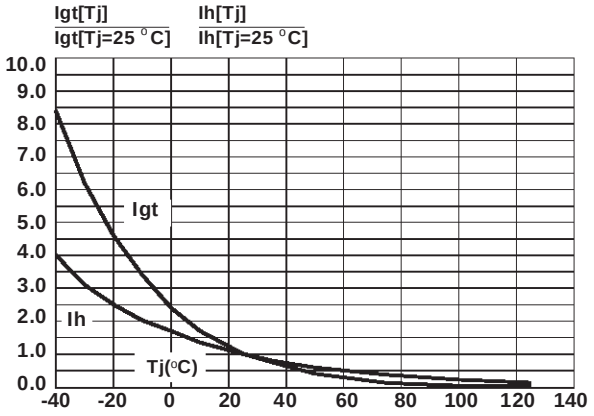


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

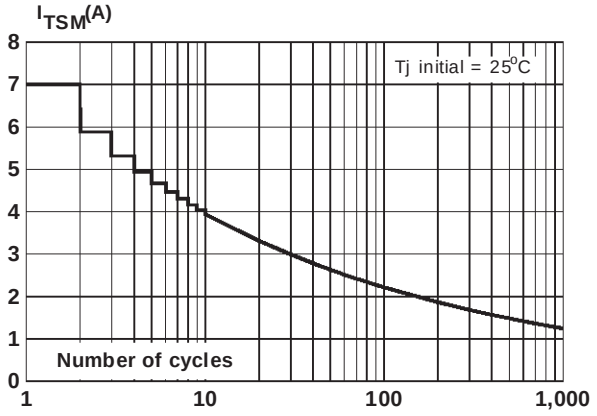


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : tp ® 10ms, and corresponding value of I^2t.

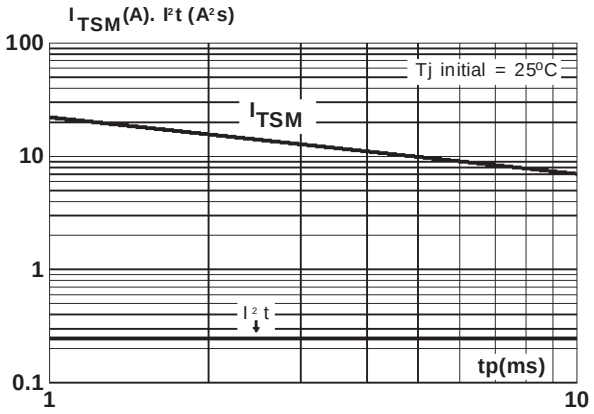


Fig.8 : On-state characteristics (maximum values).

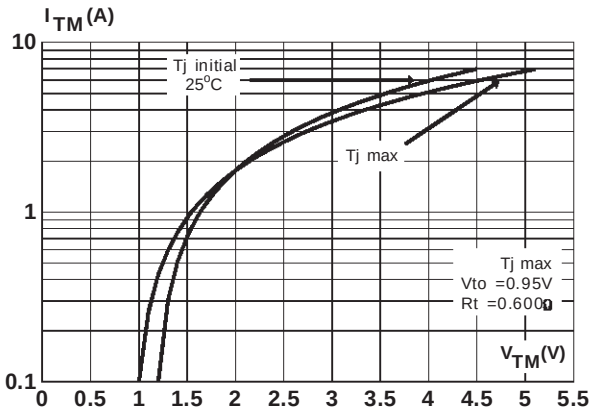
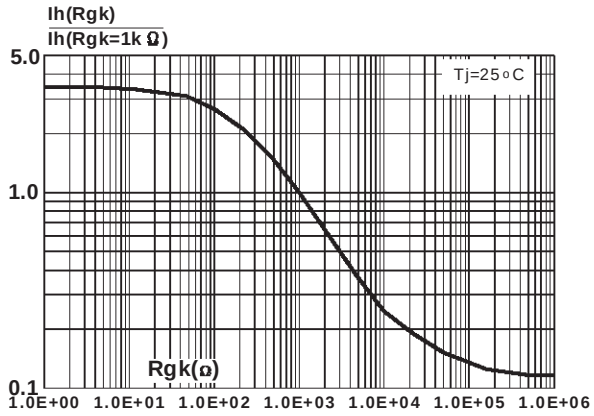
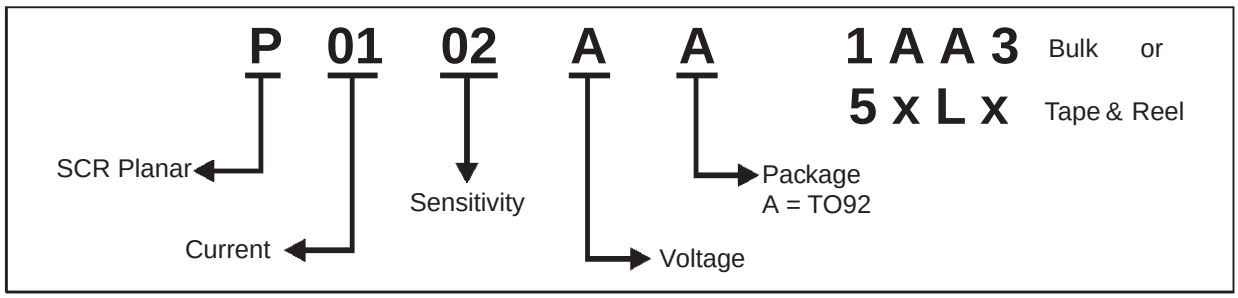


Fig.9 : Relative variation of holding current versus gate-cathode resistance (typical values).

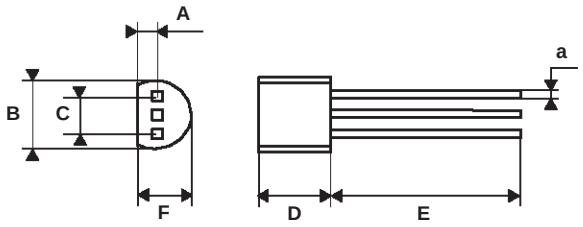


ORDERING INFORMATION



PACKAGE MECHANICAL DATA

TO92



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		1.35			0.053	
B			4.70			0.185
C		2.54			0.100	
D	4.40			0.173		
E	12.70			0.500		
F			3.70			0.146
a			0.45			0.017

MARKING

Type	Marking	Package	Weight	Delivery mode	Base qty
P0109BA	P0109BA	TO92	0.2g	Bulk Tape & Reel	2500 2000
P0109DA	P0109DA				
P0109MA	P0109MA				
P0102BA	P0102BA				
P0102DA	P0102DA				
P0102MA	P0102MA				
P0111BA	P0111BA				
P0111DA	P0111DA				
P0111MA	P0111MA				
P0115BA	P0115BA				
P0115DA	P0115DA				
P0115MA	P0115MA				
P0118BA	P0118BA				
P0118DA	P0118DA				
P0118MA	P0118MA				