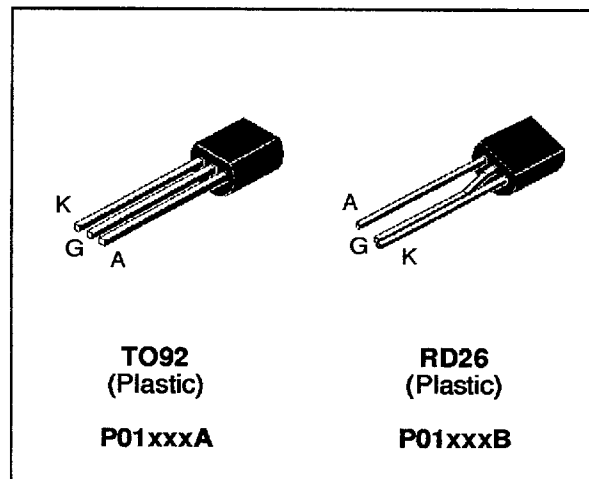


**SENSITIVE GATE SCR**
**FEATURES**

- $I_{T(RMS)} = 0.8A$
- $V_{DRM} = 100V$  to  $400V$
- Low  $I_{GT} < 1\mu A$  max to  $< 200\mu A$

**DESCRIPTION**

The P01xxxA/B series of SCRs uses a high performance planar PNPN technology. These parts are intended for general purpose applications where low gate sensitivity is required.


**ABSOLUTE RATINGS (limiting values)**

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)	$T_I = 55^\circ C$	0.8	A
$I_{T(AV)}$	Mean on-state current (180° conduction angle)	$T_I = 55^\circ C$	0.5	A
$I_{TSM}$	Non repetitive surge peak on-state current ( $T_j$ initial = $25^\circ C$ )	$t_p = 8.3$ ms	8	A
		$t_p = 10$ ms	7	
$I^2t$	$I^2t$ Value for fusing	$t_p = 10$ 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/ $\mu s$ .		30	A/ $\mu s$
$T_{stg}$ $T_j$	Storage and operating junction temperature range		- 40, + 150 - 40, + 125	$^\circ C$
$T_I$	Maximum lead temperature for soldering during 10s at 2mm from case		260	$^\circ C$

Symbol	Parameter	Voltage				Unit
		A	B	C	D	
$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage $T_j = 125^\circ C$ $R_{GK} = 1K\Omega$	100	200	300	400	V

**P01xxxA/B**

**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

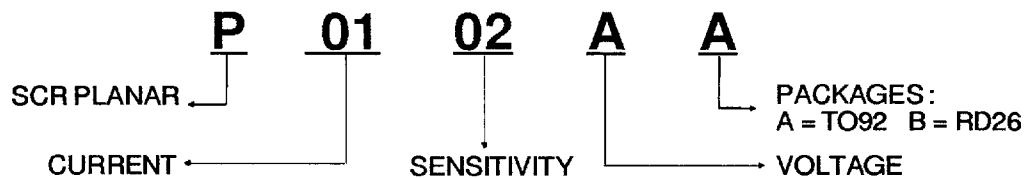
**GATE CHARACTERISTICS (maximum values)**

$P_{G(AV)} = 0.1\text{ W}$   $P_{GM} = 2\text{ W}$  ( $t_p = 20\ \mu\text{s}$ )  $I_{GM} = 1\text{ A}$  ( $t_p = 20\ \mu\text{s}$ )

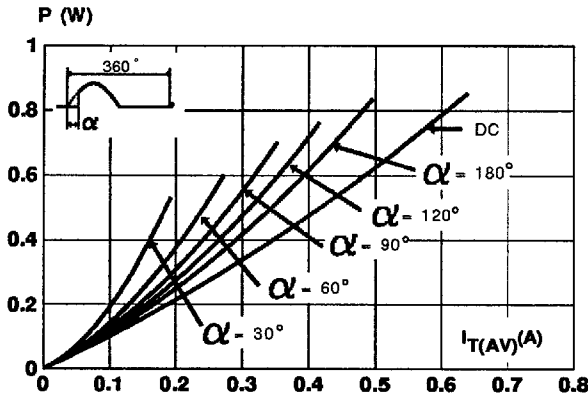
**ELECTRICAL CHARACTERISTICS**

Symbol	Test Conditions			Sensitivity					Unit
				02	09	11	15	18	
I <sub>GT</sub>	V <sub>D</sub> =12V (DC) R <sub>L</sub> =140Ω	T <sub>j</sub> = 25°C	MIN			4	15	0.5	μA
			MAX	200	1	25	50	5	
V <sub>GT</sub>	V <sub>D</sub> =12V (DC) R <sub>L</sub> =140Ω	T <sub>j</sub> = 25°C	MAX	0.8					V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> R <sub>L</sub> =3.3kΩ R <sub>GK</sub> = 1 KΩ	T <sub>j</sub> = 125°C	MIN	0.1					V
V <sub>RGM</sub>	I <sub>RG</sub> =10μA	T <sub>j</sub> = 25°C	MIN	8					V
t <sub>gd</sub>	V <sub>D</sub> =V <sub>DRM</sub> I <sub>TM</sub> = 3 x I <sub>T(AV)</sub> dI <sub>G</sub> /dt = 0.1A/μs I <sub>G</sub> = 10mA	T <sub>j</sub> = 25°C	TYP	0.5					μs
I <sub>H</sub>	I <sub>T</sub> = 50mA R <sub>GK</sub> = 1 KΩ	T <sub>j</sub> = 25°C	MAX	5					mA
I <sub>L</sub>	I <sub>G</sub> =1mA R <sub>GK</sub> = 1 KΩ	T <sub>j</sub> = 25°C	MAX	6					mA
V <sub>TM</sub>	I <sub>TM</sub> = 1.6A t <sub>p</sub> = 380μs	T <sub>j</sub> = 25°C	MAX	1.93					V
I <sub>DRM</sub> I <sub>RRM</sub>	V <sub>D</sub> = V <sub>DRM</sub> R <sub>GK</sub> = 1 KΩ V <sub>R</sub> = V <sub>RRM</sub>	T <sub>j</sub> = 25°C	MAX	1					μA
		T <sub>j</sub> = 125°C	MAX	100					μA
dV/dt	V <sub>D</sub> =67%V <sub>DRM</sub> R <sub>GK</sub> = 1 KΩ	T <sub>j</sub> = 125°C	MIN	25	25	50	100	30	V/μs
t <sub>q</sub>	I <sub>TM</sub> = 3 x I <sub>T(AV)</sub> V <sub>R</sub> =35V dI/dt=10A/μs t <sub>p</sub> =100μs dV/dt=10V/μs V <sub>D</sub> = 67%V <sub>DRM</sub> R <sub>GK</sub> = 1 KΩ	T <sub>j</sub> = 125°C	MAX	200					μs

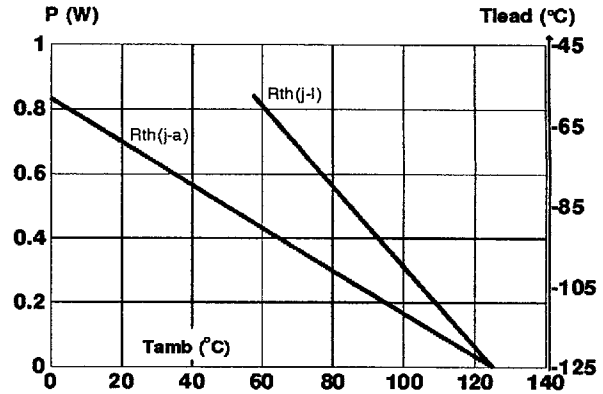
**ORDERING INFORMATION**



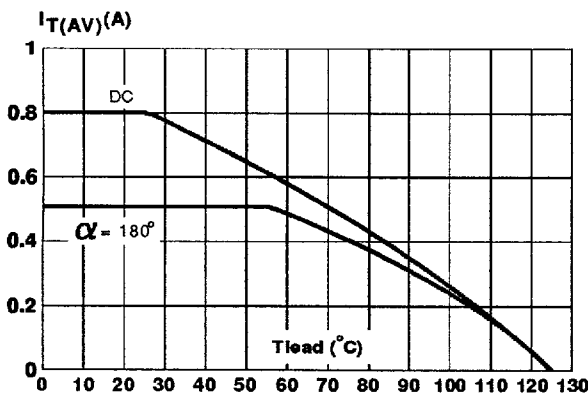
**Fig.1 :** Maximum average power dissipation versus average on-state current.



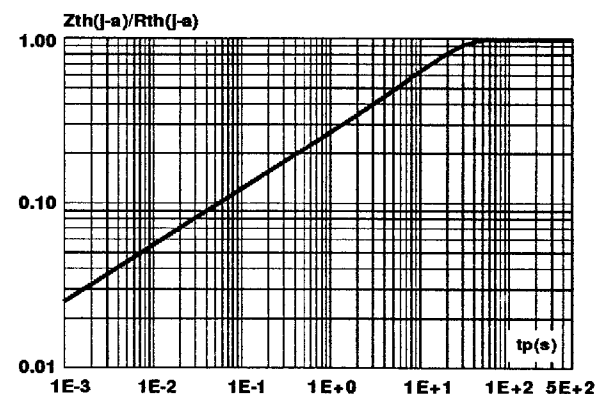
**Fig.2 :** Correlation between maximum average power dissipation and maximum allowable temperature ( $T_{amb}$  and  $T_{lead}$ ).



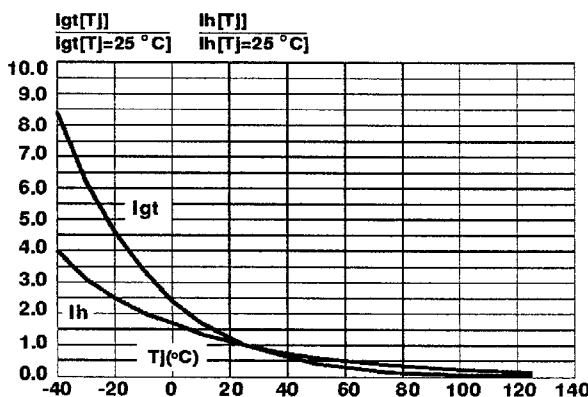
**Fig.3 :** Average on-state current versus lead temperature.



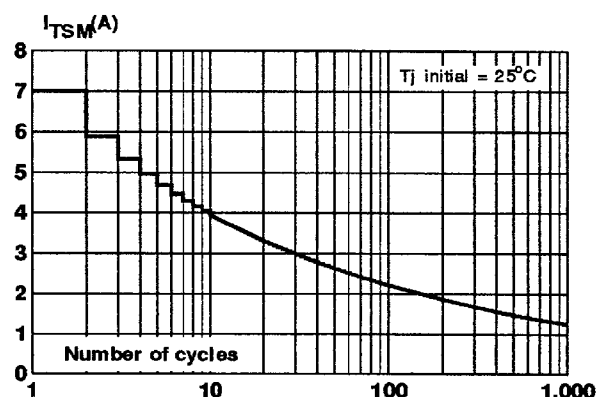
**Fig.4 :** Relative variation of thermal impedance junction to ambient versus pulse duration.



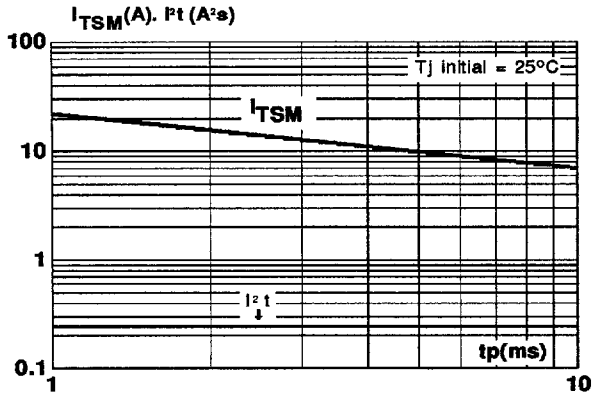
**Fig.5 :** Relative variation of gate trigger current and holding current versus junction temperature.



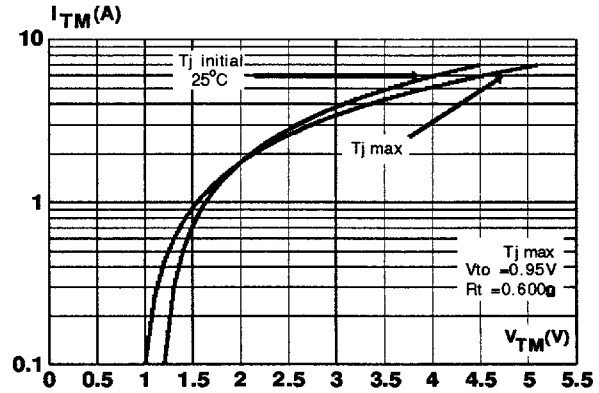
**Fig.6 :** Non repetitive surge peak on-state current versus number of cycles.



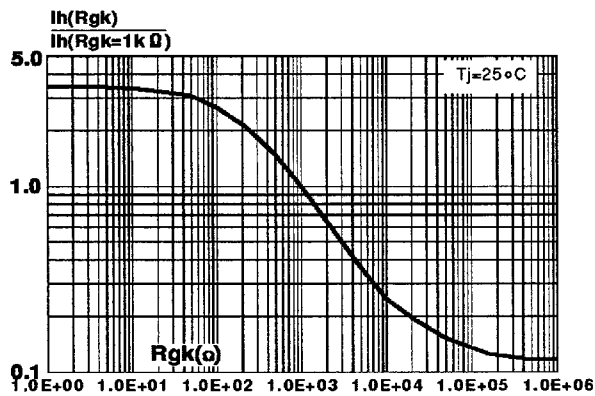
**Fig.7 :** Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t_p \leq 10\text{ms}$ , and corresponding value of  $I^2t$ .



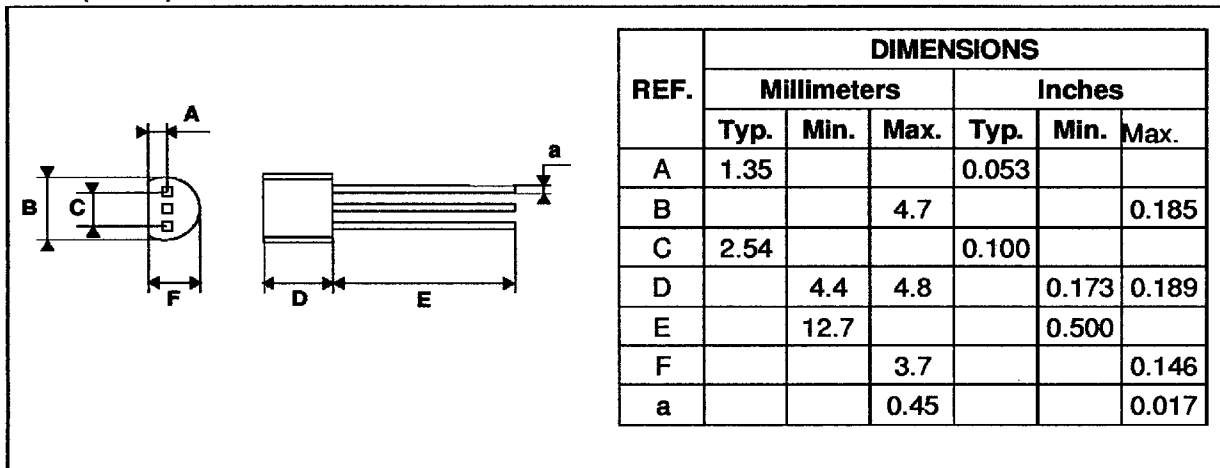
**Fig.8 :** On-state characteristics (maximum values).



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

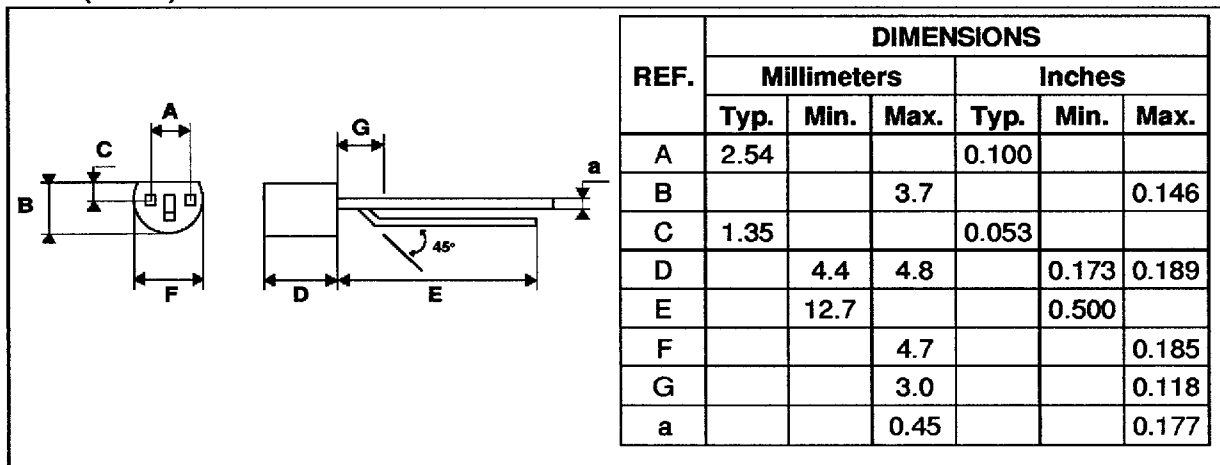


**PACKAGE MECHANICAL DATA**  
TO92 (Plastic)



Marking : type number  
Weight : 0.2 g

**PACKAGE MECHANICAL DATA**  
RD26 (Plastic)



Marking : type number  
Weight : 0.2 g

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