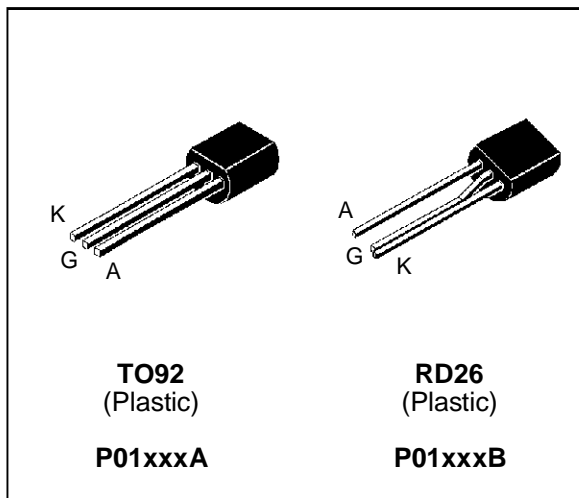


**SENSITIVE GATE SCR**
**FEATURES**

- $I_{T(RMS)} = 0.8A$
- $V_{DRM} = 100V$  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 PNP 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	
$I_t^2$	$I_t^2$ 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

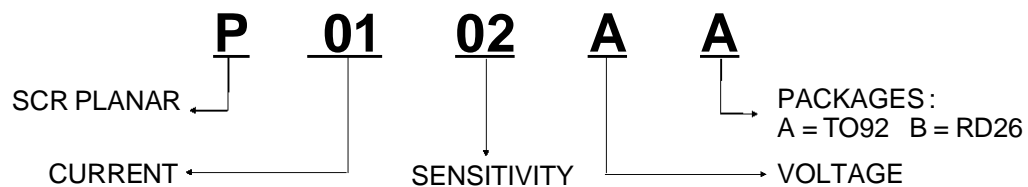
### GATE CHARACTERISTICS (maximum values)

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

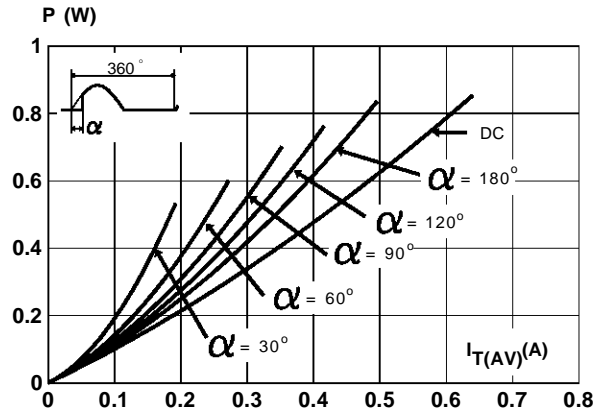
### ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Sensitivity					Unit
				02	09	11	15	18	
$I_{GT}$	$V_D = 12\text{V (DC)}$ $R_L = 140\ \Omega$	$T_j = 25^\circ\text{C}$	MIN			4	15	0.5	$\mu\text{A}$
			MAX	200	1	25	50	5	
$V_{GT}$	$V_D = 12\text{V (DC)}$ $R_L = 140\ \Omega$	$T_j = 25^\circ\text{C}$	MAX	0.8					V
$V_{GD}$	$V_D = V_{DRM}$ $R_L = 3.3\text{k}\Omega$ $R_{GK} = 1\text{k}\Omega$	$T_j = 125^\circ\text{C}$	MIN	0.1					V
$V_{RGM}$	$I_{RG} = 10\ \mu\text{A}$	$T_j = 25^\circ\text{C}$	MIN	8					V
tgD	$V_D = V_{DRM}$ $I_{TM} = 3 \times I_{T(AV)}$ $di/dt = 0.1\text{ A}/\mu\text{s}$ $I_G = 10\text{ mA}$	$T_j = 25^\circ\text{C}$	TYP	0.5					$\mu\text{s}$
$I_H$	$I_T = 50\text{ mA}$ $R_{GK} = 1\text{ k}\Omega$	$T_j = 25^\circ\text{C}$	MAX	5					mA
$I_L$	$I_G = 1\text{ mA}$ $R_{GK} = 1\text{ k}\Omega$	$T_j = 25^\circ\text{C}$	MAX	6					mA
$V_{TM}$	$I_{TM} = 1.6\text{ A}$ $t_p = 380\ \mu\text{s}$	$T_j = 25^\circ\text{C}$	MAX	1.93					V
$I_{DRM}$ $I_{RRM}$	$V_D = V_{DRM}$ $R_{GK} = 1\text{ k}\Omega$ $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$	MAX	1					$\mu\text{A}$
		$T_j = 125^\circ\text{C}$	MAX	100					$\mu\text{A}$
dV/dt	$V_D = 67\%V_{DRM}$ $R_{GK} = 1\text{ k}\Omega$	$T_j = 125^\circ\text{C}$	MIN	25	25	50	100	30	V/ $\mu\text{s}$
tq	$I_{TM} = 3 \times I_{T(AV)}$ $V_R = 35\text{ V}$ $di/dt = 10\text{ A}/\mu\text{s}$ $t_p = 100\ \mu\text{s}$ $dV/dt = 10\text{ V}/\mu\text{s}$ $V_D = 67\%V_{DRM}$ $R_{GK} = 1\text{ k}\Omega$	$T_j = 125^\circ\text{C}$	MAX	200					$\mu\text{s}$

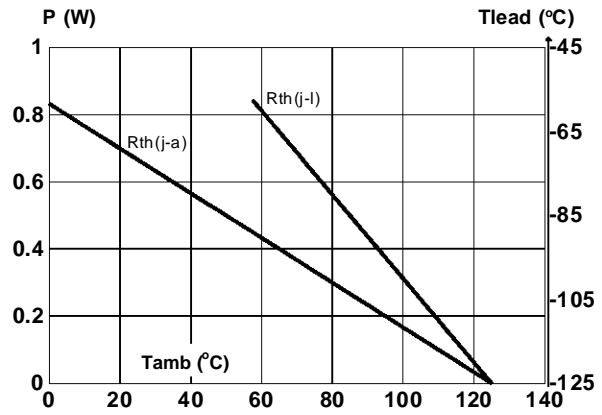
### ORDERING INFORMATION



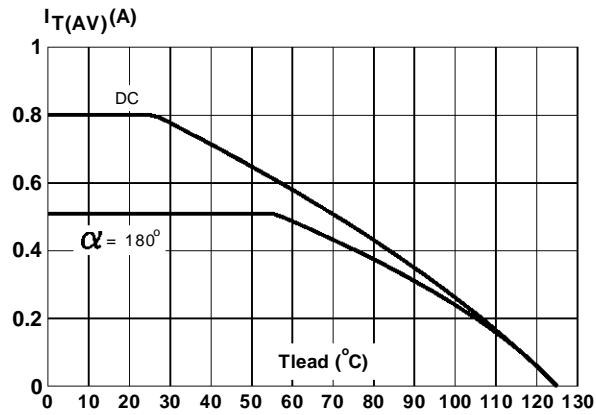
**Fig.1 :** Maximum average power dissipation versus average on-state current.



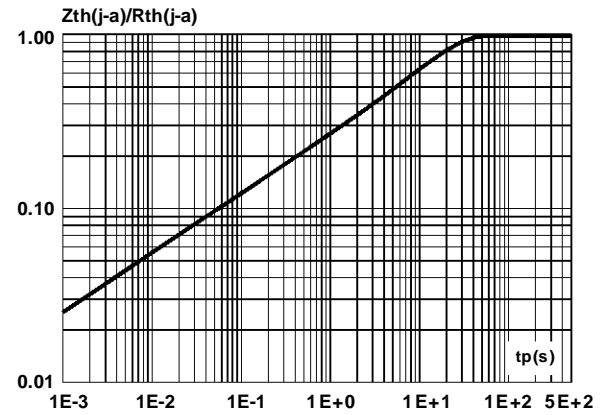
**Fig.2 :** Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and Tlead).



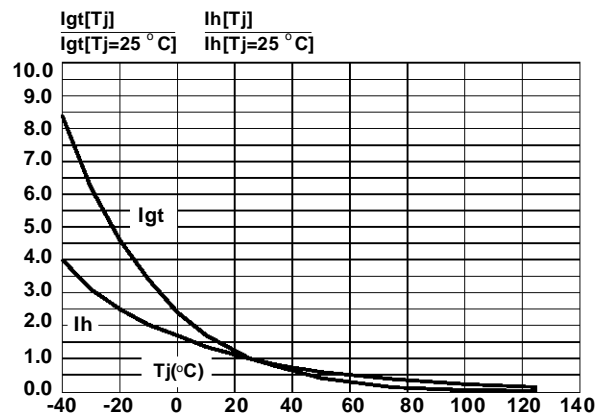
**Fig.3 :** Average on-state current versus lead temperature.



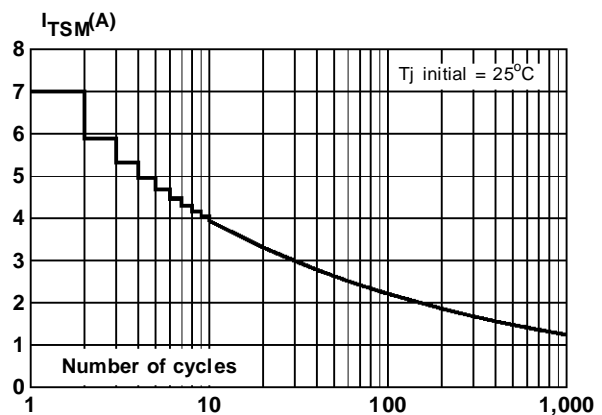
**Fig.4 :** Relative variation of thermal impedance junction to ambient versus pulse duration.



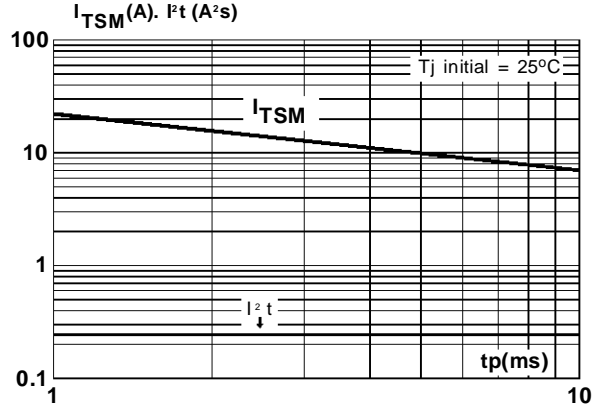
**Fig.5 :** Relative variation of gate trigger current and holding current versus junction temperature.



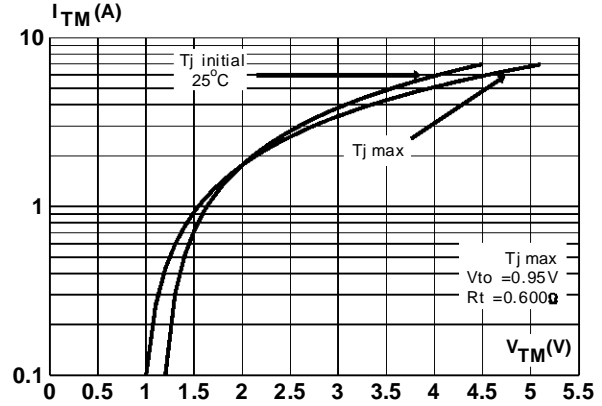
**Fig.6 :** Non repetitive surge peak on-state current versus number of cycles.



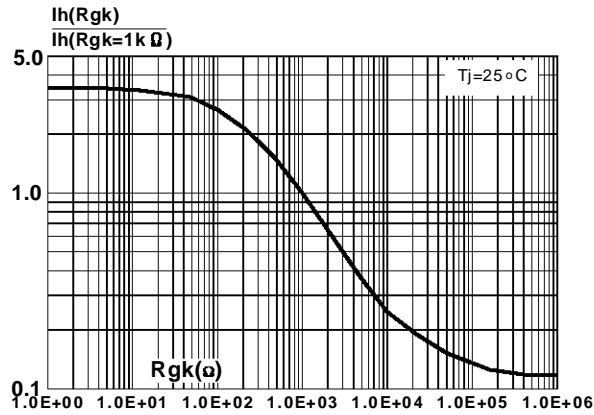
**Fig.7 :** Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t_p \leq 10\text{ms}$ , and corresponding value of  $I^2t$ .



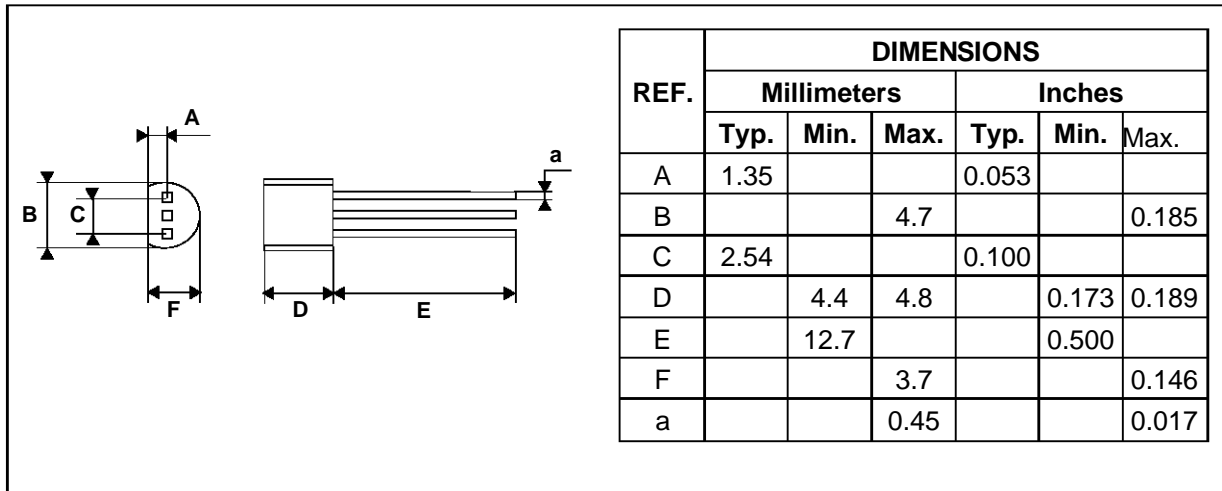
**Fig.8 :** On-state characteristics (maximum values).



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

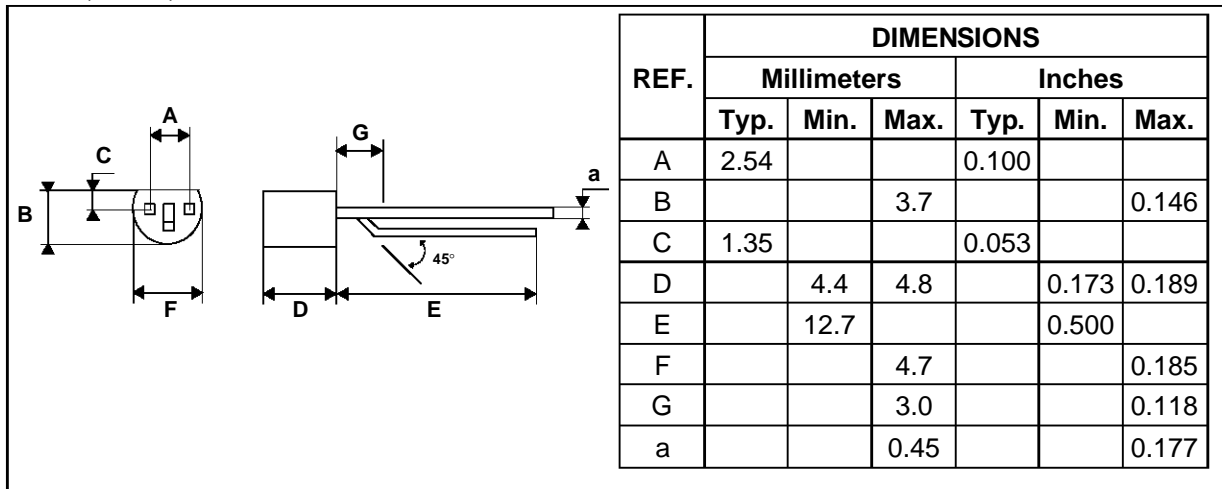


**PACKAGE MECHANICAL DATA**  
TO92 (Plastic)



Marking : type number  
Weight : 0.2 g

**PACKAGE MECHANICAL DATA**  
RD26 (Plastic)



Marking : type number  
Weight : 0.2 g

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