

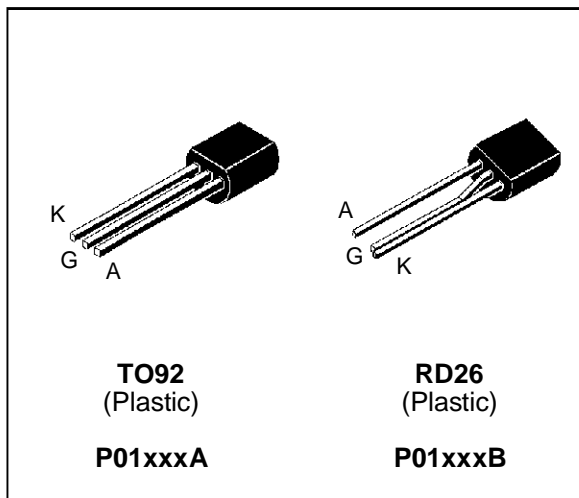
SENSITIVE GATE SCR

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
		$t_p = 10$ ms	7
I_t^2	I_t^2 Value for fusing	$t_p = 10$ ms	0.24
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 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 =12V (DC) R _L =140Ω	T _j = 25°C	MIN			4	15	0.5	μA
			MAX	200	1	25	50	5	
V _{GT}	V _D =12V (DC) R _L =140Ω	T _j = 25°C	MAX	0.8					V
V _{GD}	V _D =V _{DRM} R _L =3.3kΩ R _{GK} = 1 KΩ	T _j = 125°C	MIN	0.1					V
V _{RGM}	I _{RG} = 10μA	T _j = 25°C	MIN	8					V
t _{gd}	V _D =V _{DRM} I _{TM} = 3 x I _{T(AV)} dI _G /dt = 0.1A/μs I _G = 10mA	T _j = 25°C	TYP	0.5					μs
I _H	I _T = 50mA R _{GK} = 1 KΩ	T _j = 25°C	MAX	5					mA
I _L	I _G =1mA R _{GK} = 1 KΩ	T _j = 25°C	MAX	6					mA
V _{TM}	I _{TM} = 1.6A t _p = 380μs	T _j = 25°C	MAX	1.93					V
I _{DRM} I _{RRM}	V _D = V _{DRM} R _{GK} = 1 KΩ V _R = V _{RRM}	T _j = 25°C	MAX	1					μA
		T _j = 125°C	MAX	100					μA
dV/dt	V _D =67%V _{DRM} R _{GK} = 1 KΩ	T _j = 125°C	MIN	25	25	50	100	30	V/μs
t _q	I _{TM} = 3 x I _{T(AV)} V _R =35V dI/dt=10A/μs t _p =100μs dV/dt=10V/μs V _D = 67%V _{DRM} R _{GK} = 1 KΩ	T _j = 125°C	MAX	200					μs

ORDERING INFORMATION

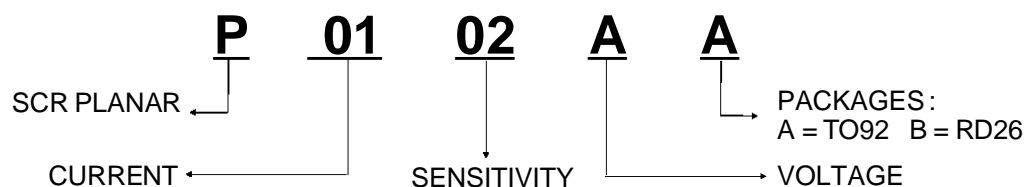


Fig.1 : Maximum average power dissipation versus average on-state current.

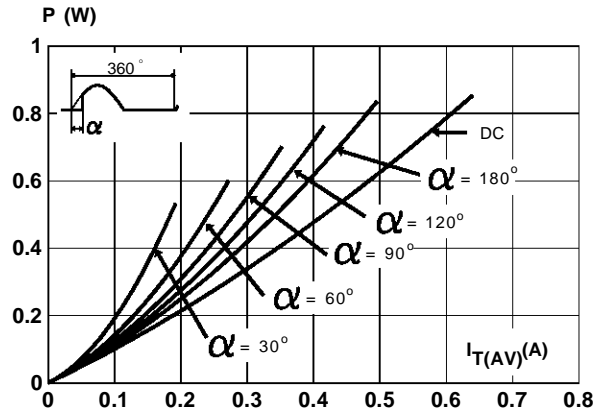


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and Tlead).

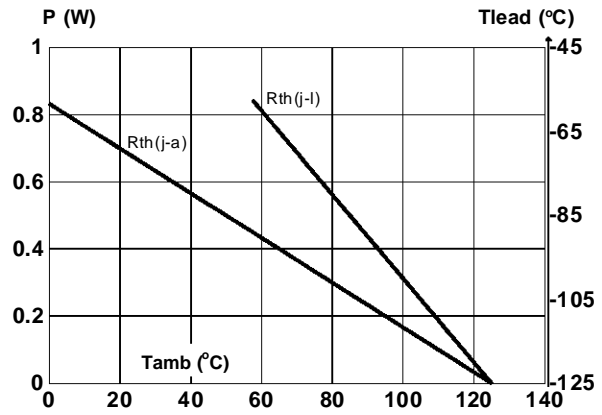


Fig.3 : Average on-state current versus lead temperature.

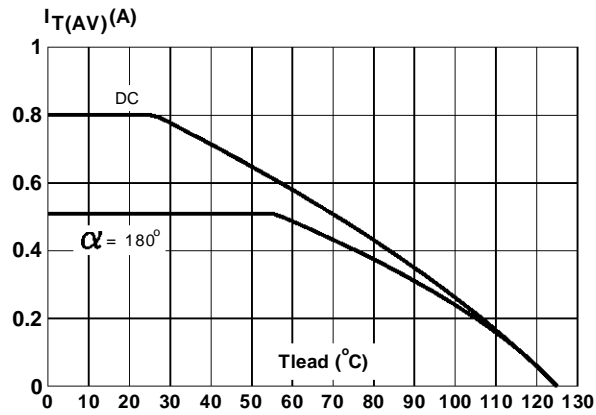


Fig.4 : Relative variation of thermal impedance junction to ambient versus pulse duration.

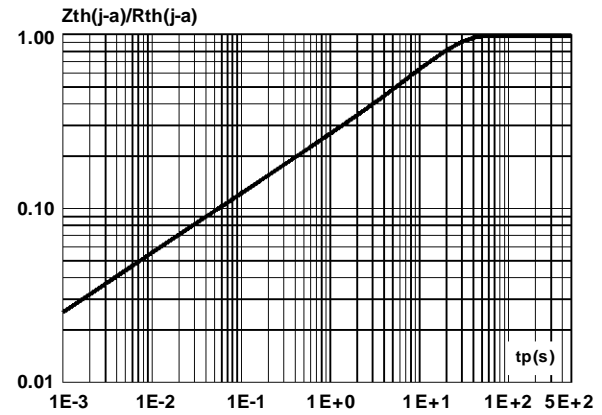


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

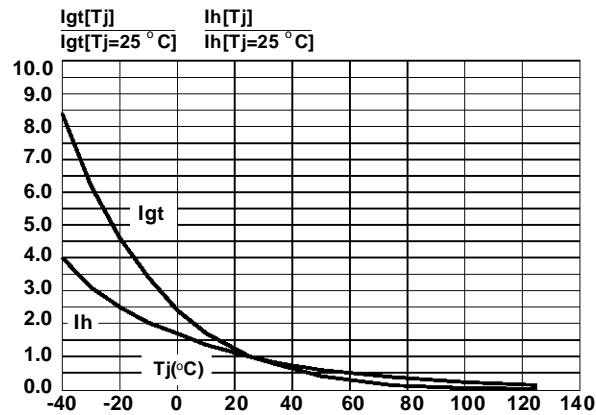


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

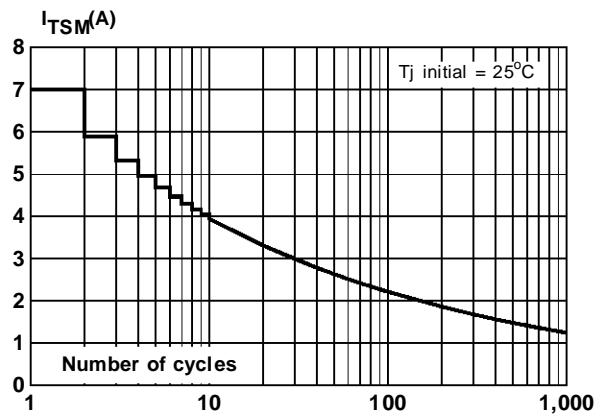


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t_p \leq 10\text{ms}$, and corresponding value of I^2t .

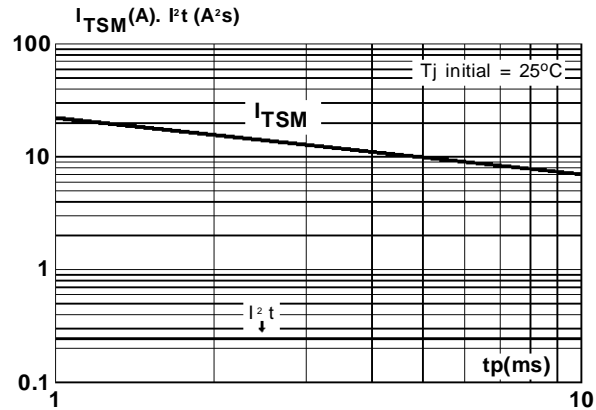


Fig.8 : On-state characteristics (maximum values).

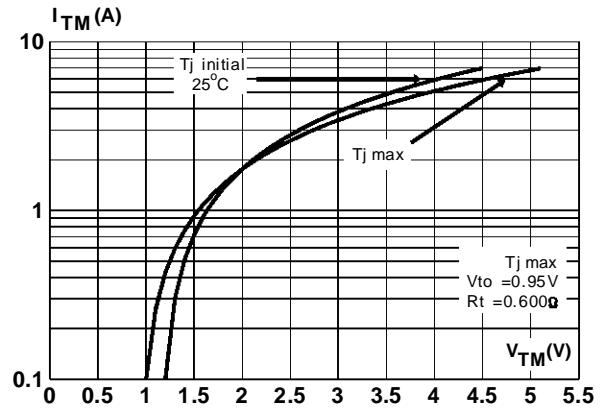
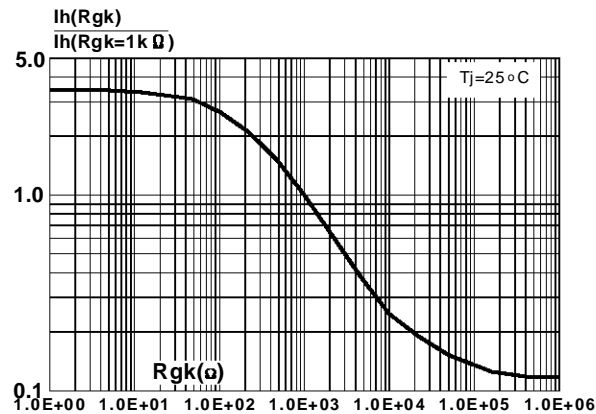
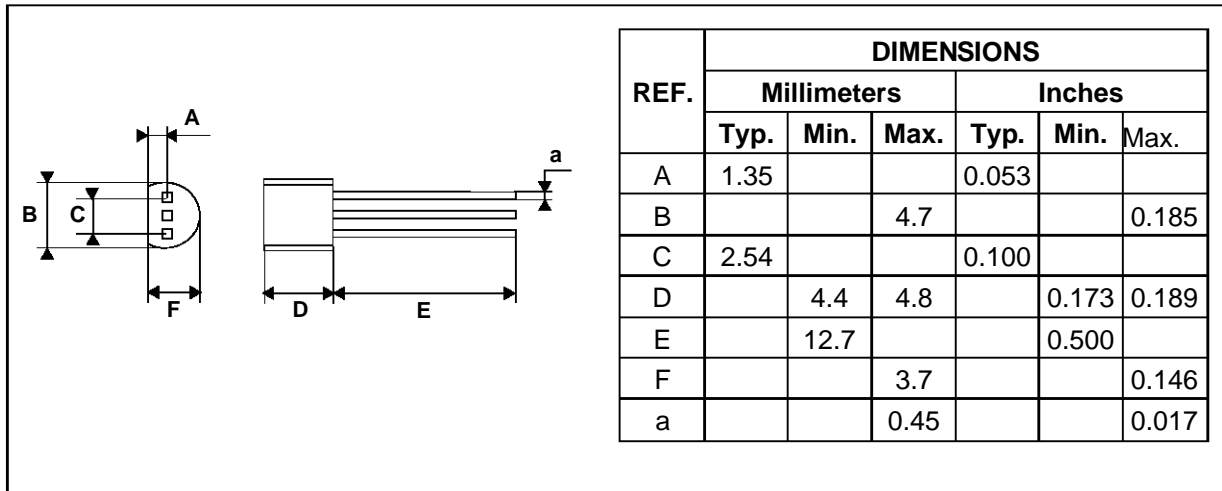


Fig.9 : Relative variation of holding current versus gate-cathode resistance (typical values).

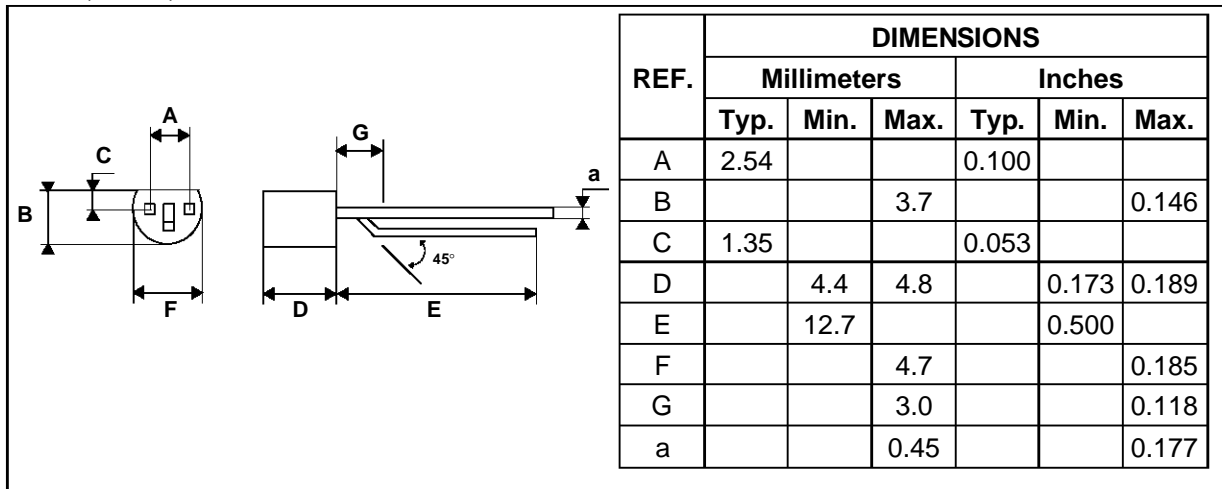


PACKAGE MECHANICAL DATA
TO92 (Plastic)



Marking : type number
Weight : 0.2 g

PACKAGE MECHANICAL DATA
RD26 (Plastic)



Marking : type number
Weight : 0.2 g

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