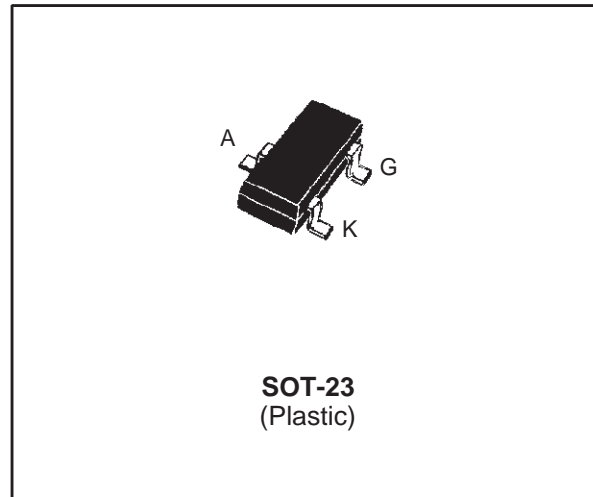


SENSITIVE GATE SCR
FEATURES

- $I_{T(RMS)} = 0.2A$
- $V_{DRM} = 100V$ to $200V$

DESCRIPTION

High performance planar 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)	$T_a = 25^\circ C$	0.26	A
$I_{T(AV)}$ *	Mean on-state current (180° conduction angle)	$T_a = 25^\circ C$	0.17	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25^\circ C$)	$t_p = 8.3$ ms	7	A
		$t_p = 10$ ms	6	
I^2t	I^2t Value for fusing	$t_p = 10$ ms	0.18	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 and operating junction temperature range		- 40, + 150 - 40, + 125	$^\circ C$
TI	Maximum lead temperature for soldering during 10s		260	$^\circ C$

* Epoxy board FR4, recommended pad layout

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

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THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)*	Junction to ambient	400	°C/W

* Epoxy board FR4, recommended pad layout

GATE CHARACTERISTICS (maximum values)

$P_{G(AV)} = 0.02 \text{ W}$ $P_{GM} = 1 \text{ W}$ ($t_p = 20 \mu\text{s}$) $I_{GM} = 0.5 \text{ A}$ ($t_p = 20 \mu\text{s}$)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions	Sensitivity		Unit		
		02	09			
I_{GT}	$V_D = 12\text{V (DC)}$ $R_L = 140\Omega$	$T_j = 25^\circ\text{C}$	MAX	200	1	μA
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
tg _d	$V_D = V_{DRM}$ $I_{TM} = 3 \times I_{T(AV)}$ $dl/dt = 0.1\text{A}/\mu\text{s}$ $I_G = 10\text{mA}$	$T_j = 25^\circ\text{C}$	TYP	0.5		μs
I_H	$I_T = 50\text{mA}$ $R_{GK} = 1 \text{ K}\Omega$	$T_j = 25^\circ\text{C}$	MAX	6		mA
I_L	$I_G = 1\text{mA}$ $R_{GK} = 1 \text{ K}\Omega$	$T_j = 25^\circ\text{C}$	MAX	7		mA
V_{TM}	$I_{TM} = 0.4\text{A}$ $t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$	MAX	1.7		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		μA
		$T_j = 125^\circ\text{C}$	MAX	100		μA
dV/dt	$V_D = 67\%V_{DRM}$ $R_{GK} = 1 \text{ K}\Omega$	$T_j = 125^\circ\text{C}$	MIN	200	100	V/ μs
tq	$I_{TM} = 3 \times I_{T(AV)}$ $V_R = 35\text{V}$ $dl/dt = 10\text{A}/\mu\text{s}$ $t_p = 100\mu\text{s}$ $dV/dt = 10\text{V}/\mu\text{s}$ $V_D = 67\%V_{DRM}$ $R_{GK} = 1 \text{ K}\Omega$	$T_j = 125^\circ\text{C}$	MAX	200		μs

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

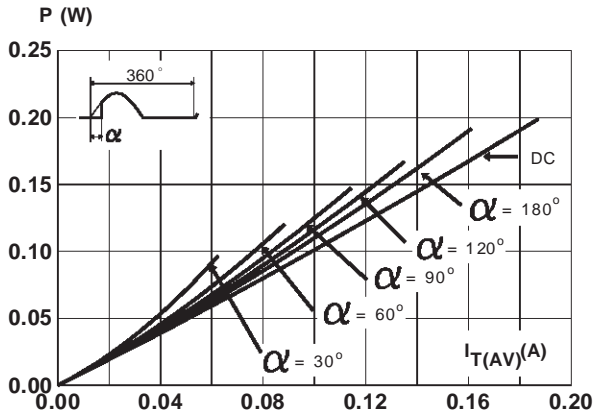


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb}).

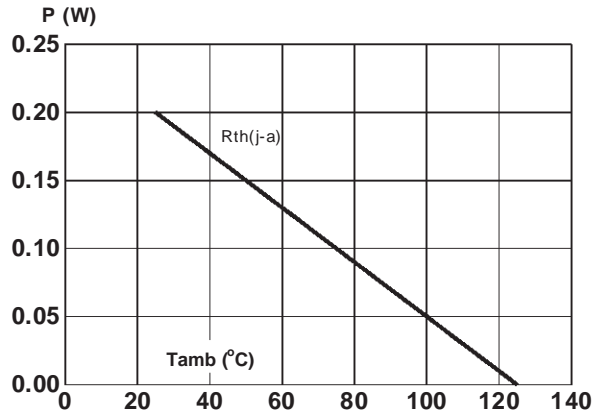


Fig.3 : Average on-state current versus tab temperature.

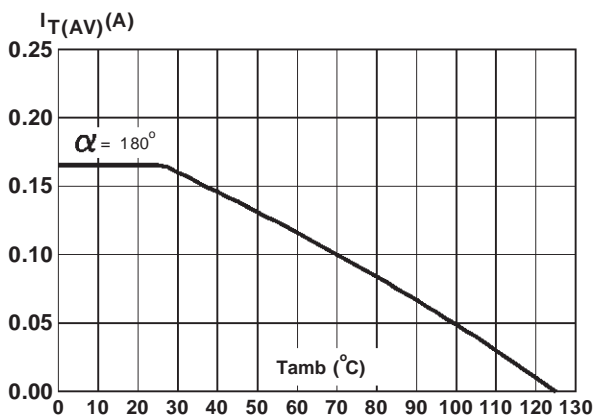


Fig.4 : Relative variation of thermal impedance junction to ambient versus pulse duration.

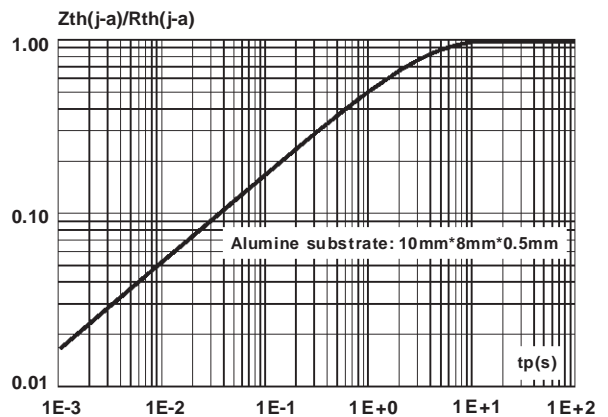


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

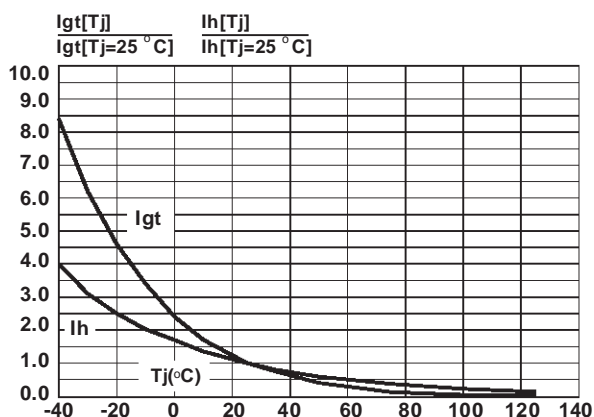


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

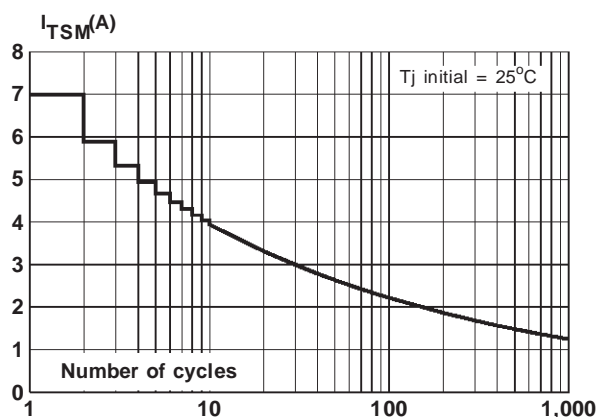


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t_p @ 10ms$, and corresponding value of I^2t .

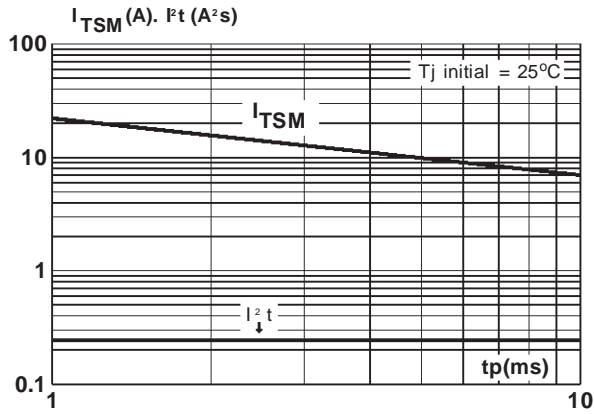


Fig.8 : On-state characteristics (maximum values).

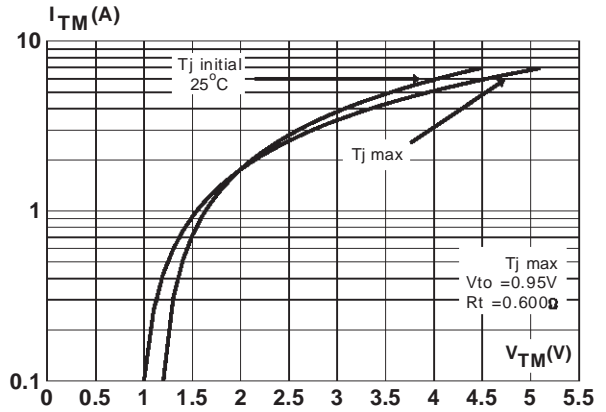
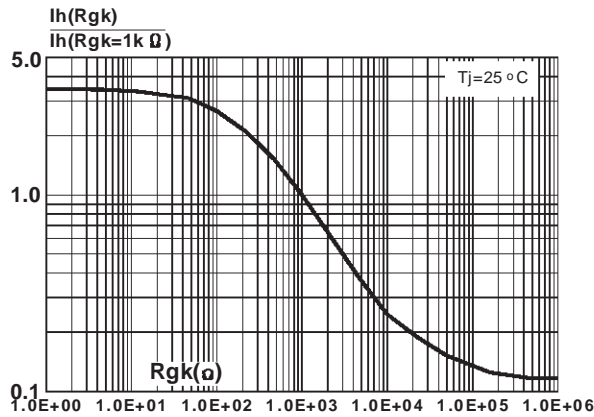
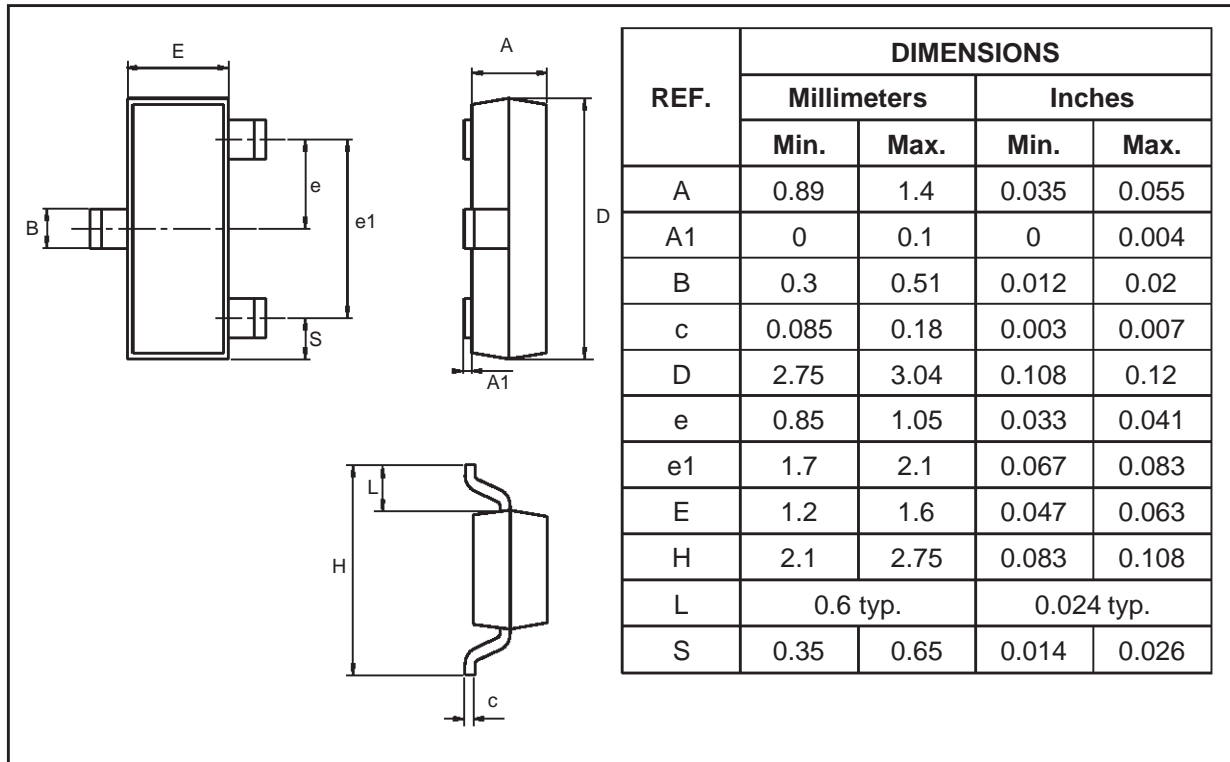


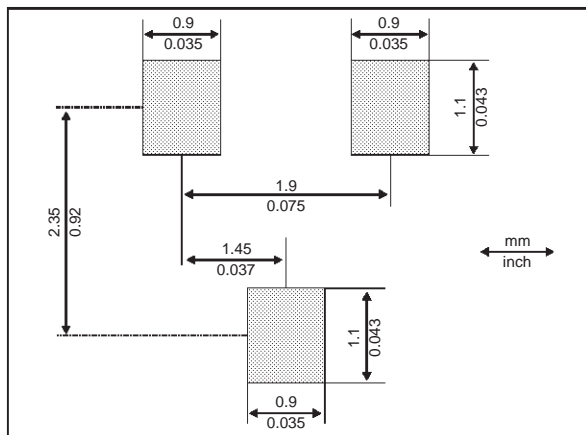
Fig.9 : Relative variation of holding current versus gate-cathode resistance (typical values).



PACKAGE MECHANICAL DATA
SOT-23 (Plastic)



FOOT PRINT

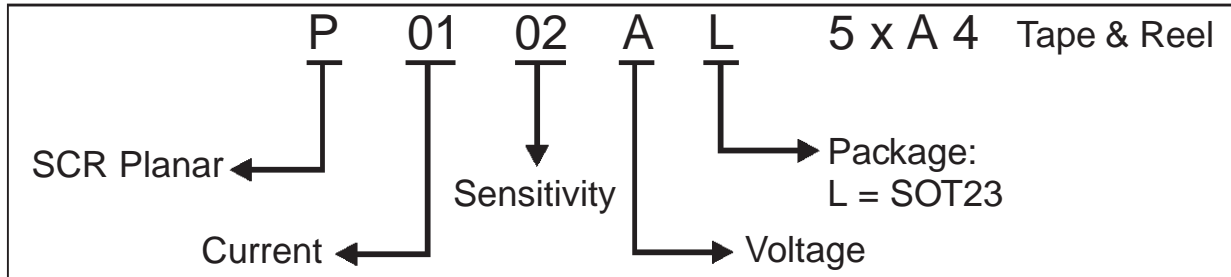


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MARKING

Type	Marking	Package	Weight	Delivery mode	Base qty
P0102AL	P2A	SOT-23	0.01g	Tape & Reel	3000
P0102BL	P2B				
P0109AL	P9A				
P0109BL	P9B				

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