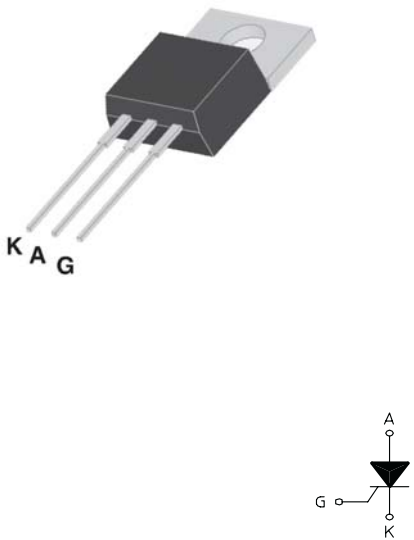


SENSITIVE GATE SCR

<p style="text-align: center;">TO-220-AB</p> 	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">On-State Current 8 Amp</td> <td style="width: 50%; border: none;">Gate Trigger Current < 200 μA</td> </tr> <tr> <td colspan="2" style="border: none; text-align: center;">Off-State Voltage 200 V \div 800 V</td> </tr> </table> <p>These series of Silicon Controlled Rectifier use a high performance PNPN technology.</p> <p>These parts are intended for general purpose applications where high gate sensitivity is required.</p>	On-State Current 8 Amp	Gate Trigger Current < 200 μ A	Off-State Voltage 200 V \div 800 V	
On-State Current 8 Amp	Gate Trigger Current < 200 μ A				
Off-State Voltage 200 V \div 800 V					

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110\text{ }^\circ\text{C}$	8	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180^\circ$, $T_c = 110\text{ }^\circ\text{C}$	5	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz	73	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz	70	A
I^2t	Fusing Current	$t_p = 10\text{ms}$, Half Cycle	24.5	A ² s
I_{GM}	Peak Gate Current	20 μ s max.	4	A
P_{GM}	Peak Gate Dissipation	20 μ s max.	5	W
$P_{G(AV)}$	Gate Dissipation	20ms max.	1	W
T_j	Operating Temperature		(-40 to +125)	$^\circ\text{C}$
T_{stg}	Storage Temperature		(-40 to +150)	$^\circ\text{C}$
T_{sld}	Soldering Temperature	10s max.	260	$^\circ\text{C}$

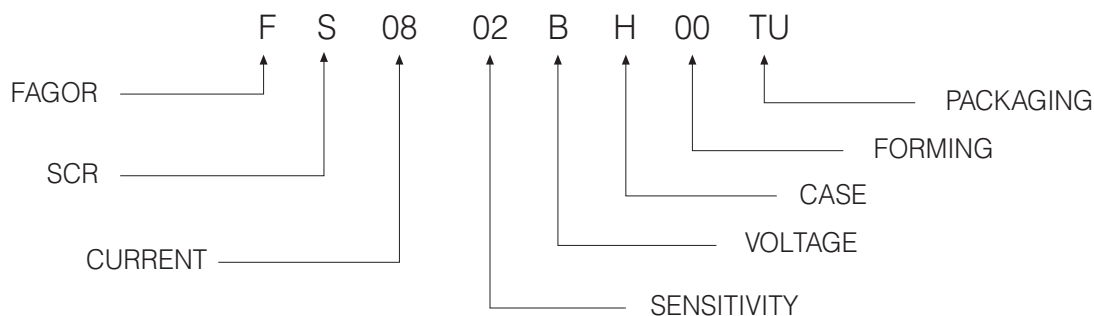
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE					Unit
			B	D	M	S	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	700	800	V

SENSITIVE GATE SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY		Uni
				02	
I_{GT}	Gate Trigger Current	$V_D = 12 V_{DC}$, $R_L = 140\Omega$, $T_j = 25^\circ C$	MAX	200	μA
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}$, $R_L = 140\Omega$, $T_j = 25^\circ C$	MAX	0.8	V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}$, $R_L = 3.3k\Omega$, $R_{GK} = 220\Omega$ $T_j = 125^\circ C$	MIN	0.1	V
V_{RGM}	Reverse Gate Voltage	$I_{RG} = 10\mu A$,	MIN	8	V
I_H	Holding Current	$I_T = 500 mA$,	MAX	5	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$	MAX	6	mA
dV / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$, $R_{GK} = 1 k\Omega$ $T_j = 125^\circ C$	MIN	5	V/ μs
dI / dt	Critical Rate of Current Rise	$I_G = 2 \times I_{GT}$ $tr \leq 100 ns$, $f = 60 Hz$, $T_j = 125^\circ C$	MIN	50	A/ μs
V_{TM}	On-state Voltage	at $I_T = 16 Amp$, $tp = 380 \mu s$, $T_j = 25^\circ C$	MAX	1.6	V
$V_{t(o)}$	Threshold Voltage	$T_j = 125^\circ C$	MAX	0.85	V
r_d	Dynamic resistance	$T_j = 125^\circ C$	MAX	46	$m\Omega$
I_{DRM} / I_{RRM}		$V_D = V_{DRM}$, $R_{GK} = 1k\Omega$ $T_j = 125^\circ C$ $V_R = V_{RRM}$, $T_j = 25^\circ C$	MAX	1	mA
			MAX	5	μA
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC	for AC 360° conduction angle		1.6	$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Amb for DC	$S = 1 cm^2$		60	$^\circ C/W$

PART NUMBER INFORMATION



SENSITIVE GATE SCR

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

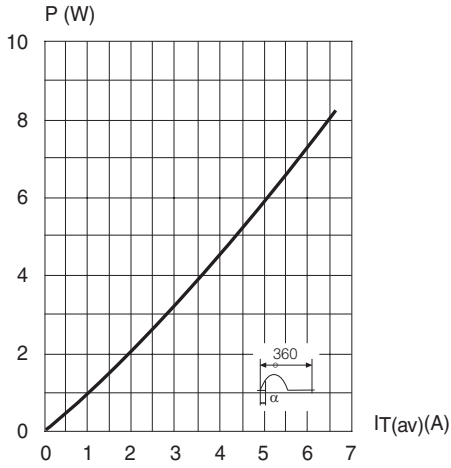


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

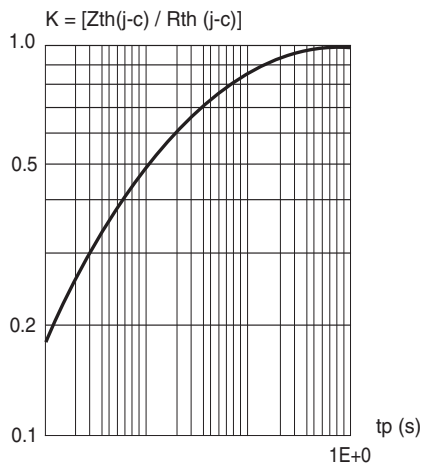


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

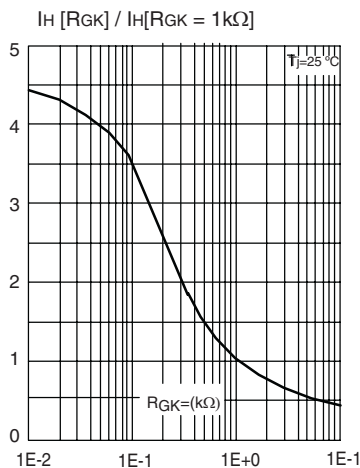


Fig. 2: Average and D.C. on-state current versus case temperature.

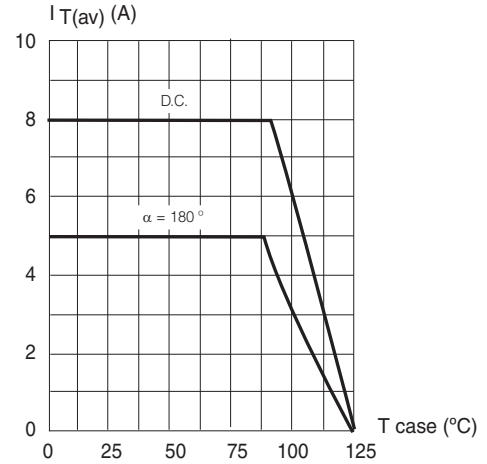


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

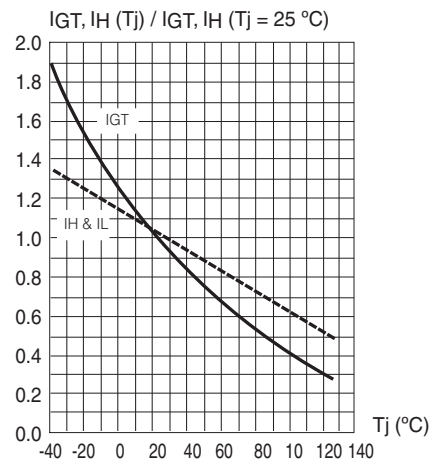
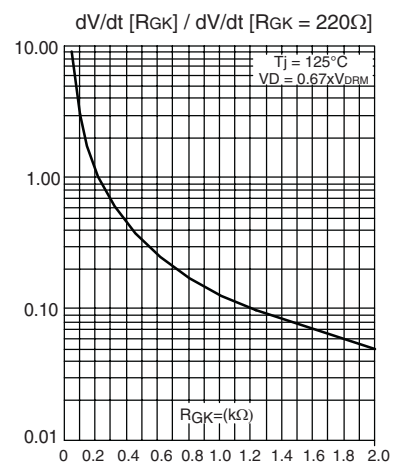


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).



SENSITIVE GATE SCR

Fig. 7: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).

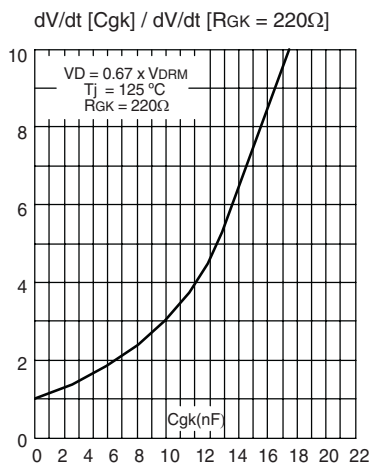


Fig. 8: Non repetitive surge peak on-state current versus number of cycles.

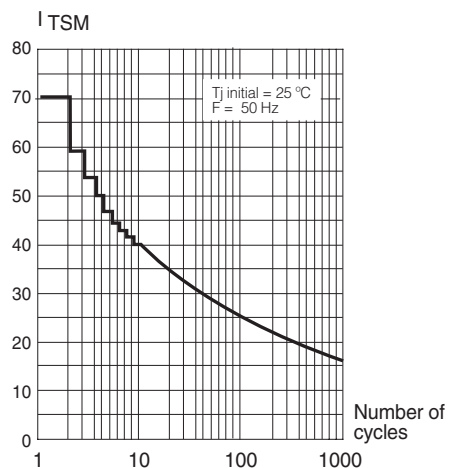


Fig. 9: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10 \text{ ms}$, and corresponding value of I^2t .

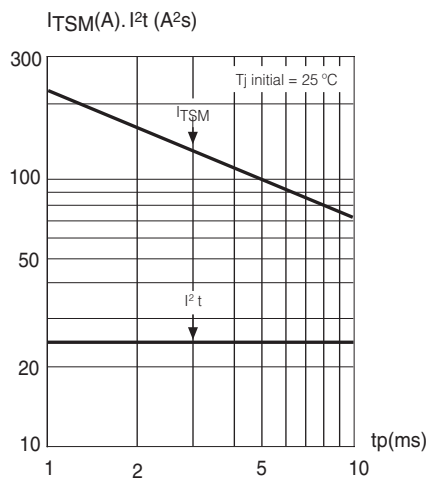
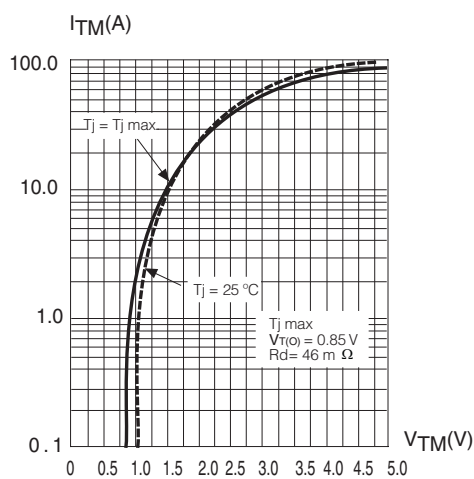


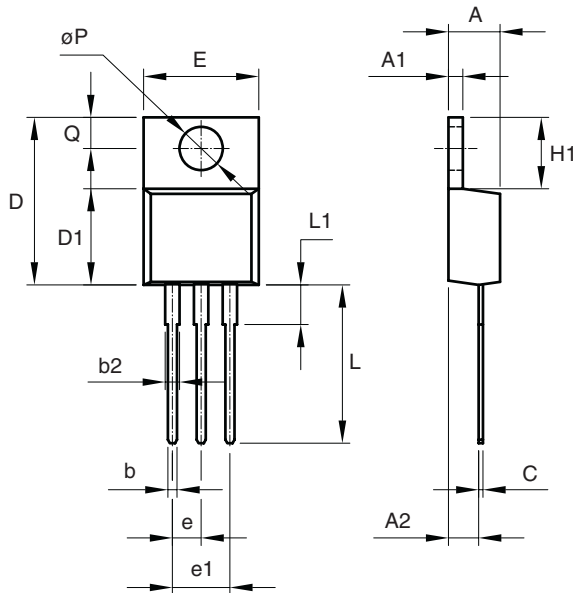
Fig. 10: On-state characteristics (maximum values).



SENSITIVE GATE SCR

PACKAGE MECHANICAL DATA

TO-220AB



REF.	DIMENSIONS	
	Milimeters	
	Min.	Max.
A	4.47	4.67
A1	1.17	1.37
A2	2.52	2.82
b	0.71	0.91
b2	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.36
e	2.51	2.57
e1	4.98	5.18
H1	6.15	6.45
L	13.40	13.96
L1	3.56	3.96
P	3.735	3.935
Q	2.59	2.89

Mounting Torque

1 N.m

(*) Limiting values and life support applications, see Web page.