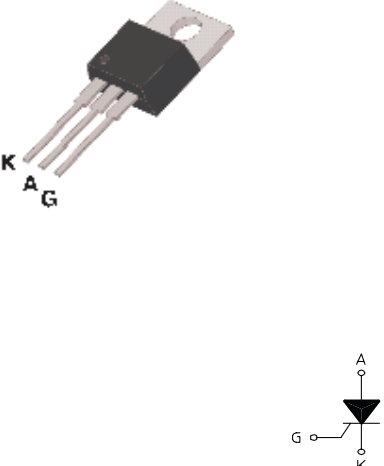


SENSITIVE GATE SCR

TO-220-AB 	On-State Current Gate Trigger Current 8 Amp < 200 A Off-State Voltage 200 V ÷ 800 V These series of Silicon Controlled Rectifier use a high performance PNP technology. These parts are intended for general purpose applications where high gate sensitivity is required.
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Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110^\circ\text{C}$	8	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180^\circ$, $T_c = 110^\circ\text{C}$	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 μs max.	4	A
P_{GM}	Peak Gate Dissipation	20 μs max.	5	W
$P_{G(AV)}$	Gate Dissipation	20ms max.	1	W
T_j	Operating Temperature		(-40 to +125)	°C
T_{stg}	Storage Temperature		(-40 to +150)	°C
T_{sld}	Soldering Temperature	10s max.	260	°C

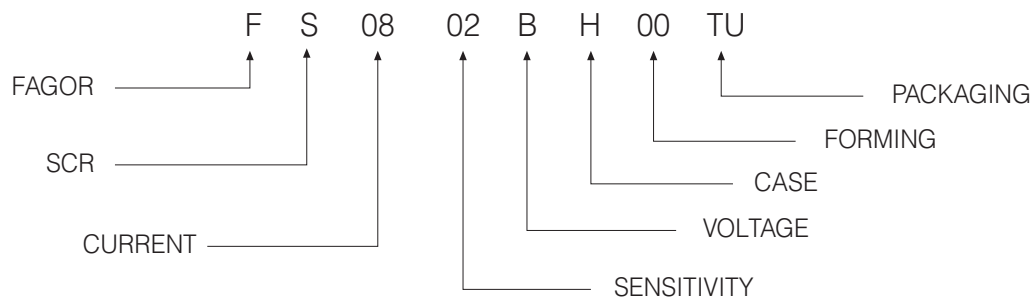
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE					Unit
			B	D	M	S	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	700	800	V

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	$I_G = 2 \times I_{GT}$ $t_r \leq 100 ns$, $f = 60 Hz$, $T_j = 125^\circ C$	MIN	50	A/ μs
V_{TM}	On-state Voltage	at $I_T = 16 Amp$, $t_p = 380 \mu s$, $T_j = 25^\circ C$	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}		$V_D = V_{DRM}$, $R_{GK} = 1k\Omega$ $T_j = 125^\circ C$	MAX	1	mA
		$V_R = V_{RRM}$, $T_j = 25^\circ C$	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.

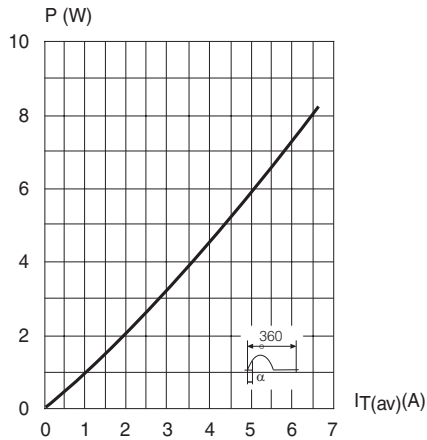


Fig. 2: Average and D.C. on-state current versus case temperature.

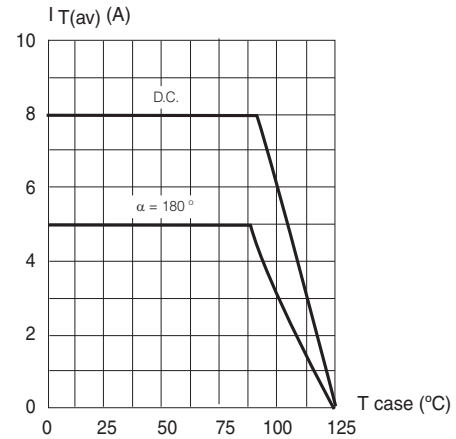


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

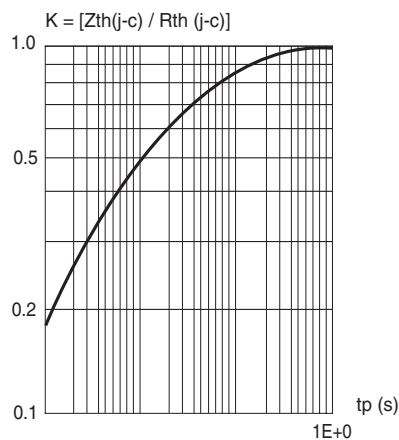


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

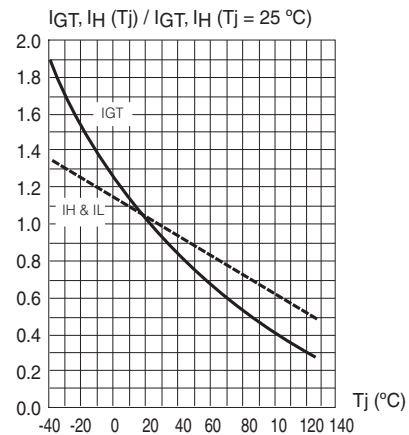


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

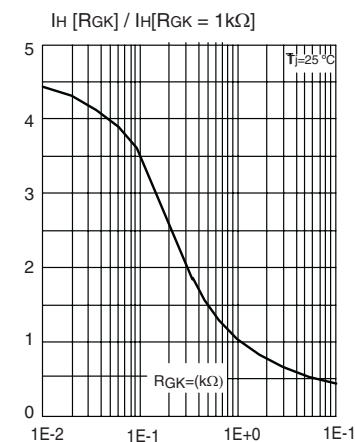
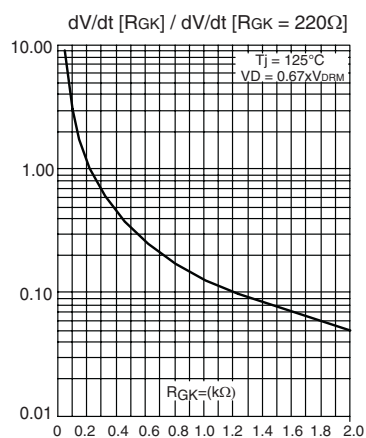


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).



SENSITIVE GATE SCR

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

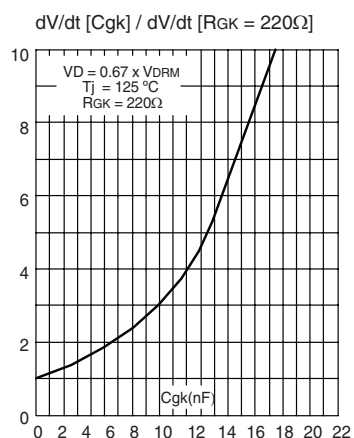


Fig. 8: Non repetitive surge peak on-state current versus number of cycles.

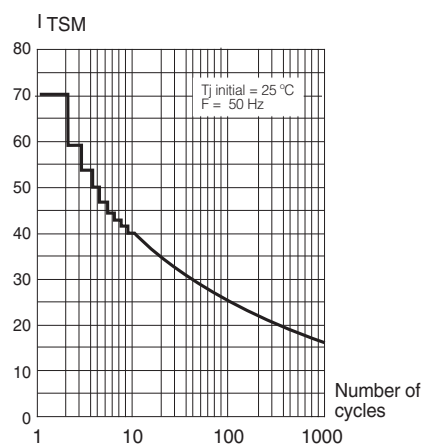


Fig. 9: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10 \text{ ms}$, and corresponding value of $I^2 t$.

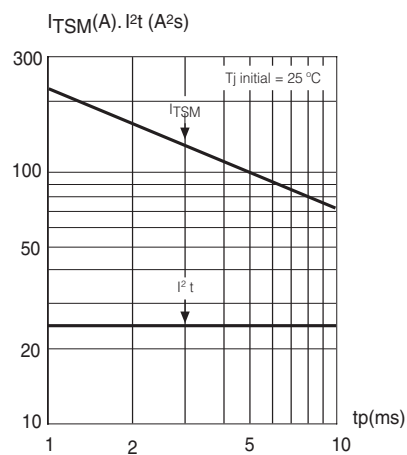
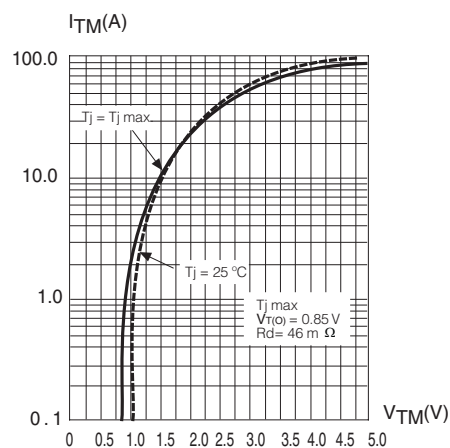
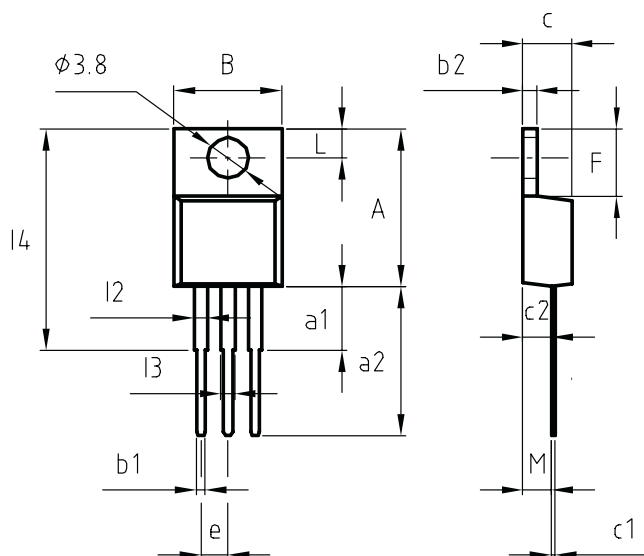


Fig. 10: On-state characteristics (maximum values).



SENSITIVE GATE SCR
PACKAGE MECHANICAL DATA
TO-220AB


REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	15.20		15.90
a1		3.75	
a2	13.00		14.00
B	10.00		10.40
b1	0.61		0.88
b2	1.23		1.32
C	4.40		4.60
c1	0.49		0.70
c2	2.40		2.72
e	2.40		2.70
F	6.20		6.60
I	3.75		3.85
I4	15.80	16.40	16.80
L	2.65		2.95
I2	1.14		1.70
I3	1.14		1.70
M		2.60	

Mounting Torque
1 N.m

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