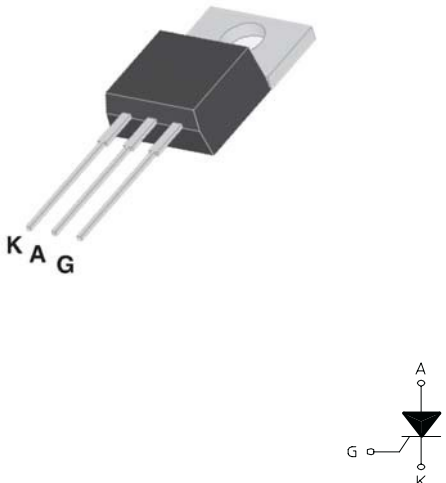


### STANDARD SCR

<p><b>TO220-AB</b></p> 	<p><b>On-State Current</b> 8 Amp</p> <p><b>Gate Trigger Current</b> 2 mA to 15 mA</p> <p><b>Off-State Voltage</b> 200 V ÷ 800 V</p>
<p>These series of <b>Silicon Controlled Rectifier</b> use a high performance PNP technology.</p> <p>These parts are intended for general purpose applications where high gate sensitivity is required.</p>	

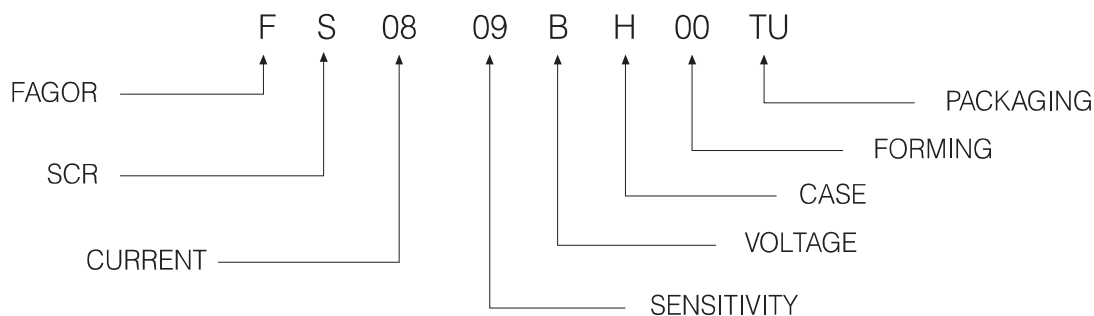
### Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110\text{ °C}$	8	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180\text{ °}$ , $T_c = 110\text{ °C}$	5	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 60 Hz	100	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 50 Hz	95	A
$I^2t$	Fusing Current	$t_p = 10\text{ms}$ , Half Cycle	45	A <sup>2</sup> s
$I_{GM}$	Peak Gate Current	20 $\mu\text{s}$ max.	4	A
$P_{GM}$	Peak Gate Dissipation	20 $\mu\text{s}$ max.	10	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
$V_{RGM}$	Reverse Gate Voltage		5	V

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

**STANDARD SCR**
**Electrical Characteristics**

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY		Uni
				09	
$I_{GT}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$	MIN	2	mA
			MAX	15	
$V_{GT}$	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$	MAX	1.3	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	0.2	V
$I_H$	Holding Current	$I_T = 500 \text{ mA}$	MAX	30	mA
$I_L$	Latching Current	$I_G = 1.2 I_{GT}$	MAX	70	mA
$dV / dt$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{ Gate open}, T_j = 125^\circ C$	MIN	150	V/ $\mu s$
$dI / dt$	Critical Rate of Current Rise	$I_G = 2 \times I_{GT}, tr \leq 100 \text{ ns}, f = 60 \text{ Hz}, T_j = 125^\circ C$	MIN	50	A/ $\mu s$
$V_{TM}$	On-state Voltage	at $I_T = 16 \text{ Amp}, tp = 380 \mu s, T_j = 25^\circ C$	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	$m\Omega$
$I_{DRM} / I_{RRM}$	Off-State Leakage Current	$V_D = V_{DRM}, R_{GK} = 1k\Omega, V_R = V_{RRM}, T_j = 125^\circ C$ $T_j = 25^\circ C$	MAX	2	mA
			MAX	5	$\mu A$
$R_{th(j-c)}$	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	$S = 1 \text{ cm}^2$		60	$^\circ C/W$

**PART NUMBER INFORMATION**


## STANDARD SCR

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

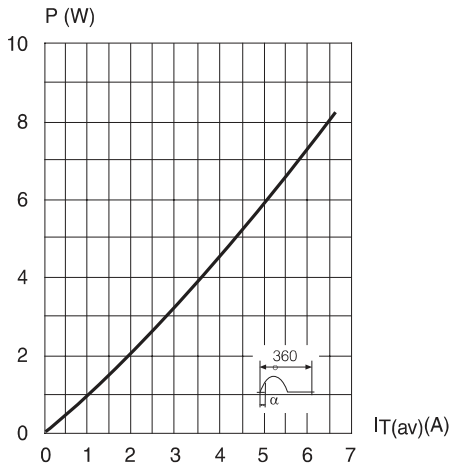


Fig. 2: Average and D.C. on-state current versus case temperature.

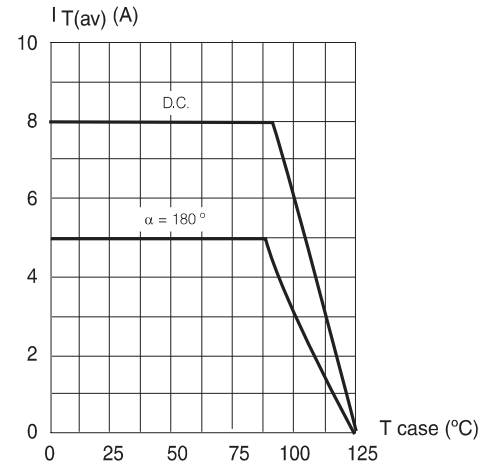


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

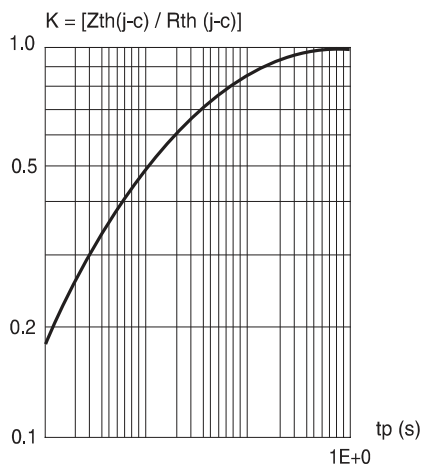


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

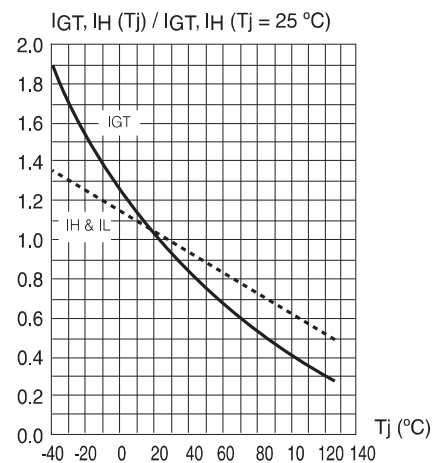


Fig. 5: Non repetitive surge peak on-state current versus number of cycles.

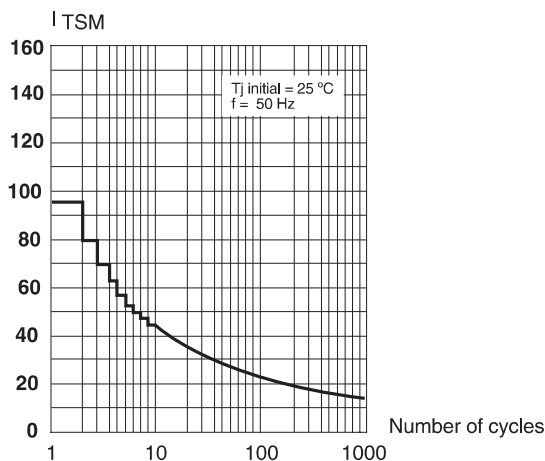
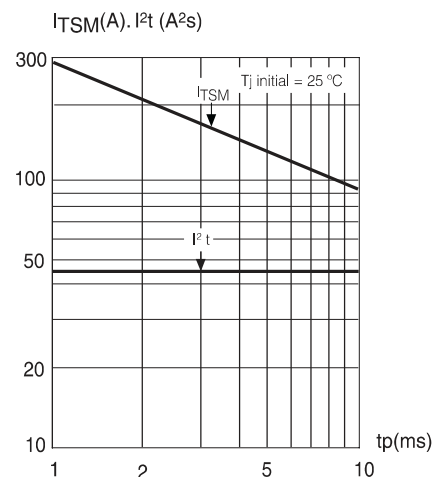
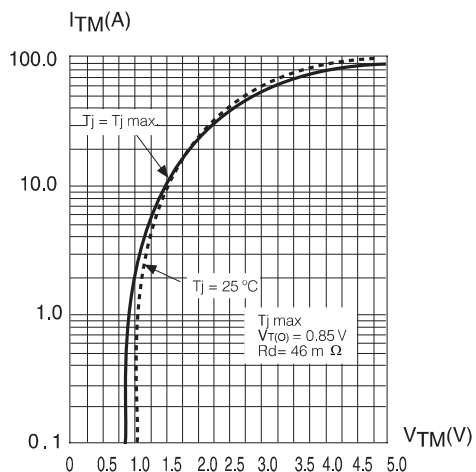


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10 \text{ ms}$ , and corresponding value of  $I^2t$ .



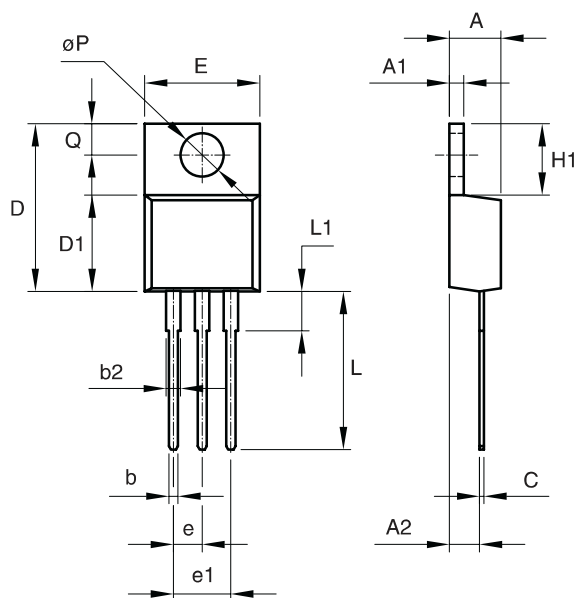
## STANDARD SCR

Fig. 7: On-state characteristics (maximum values).



### 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.