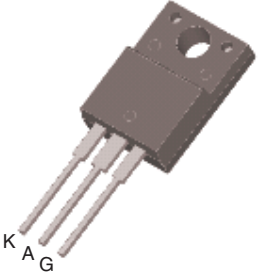



**STANDARD SCR**

<p style="text-align: center;"><b>TO220-F (FULLY ISOLATED CASE)</b></p>  <div style="text-align: center; margin-top: 20px;">  </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 50%;"><b>On-State Current</b></td> <td style="text-align: center; width: 50%;"><b>Gate Trigger Current</b></td> </tr> <tr> <td style="text-align: center;">8 Amp</td> <td style="text-align: center;">2 mA to 15 mA</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;"><b>Off-State Voltage</b></td> </tr> <tr> <td colspan="2" style="text-align: center;">200 V ÷ 800 V</td> </tr> </table> <p style="margin-top: 20px;">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>	<b>On-State Current</b>	<b>Gate Trigger Current</b>	8 Amp	2 mA to 15 mA	<b>Off-State Voltage</b>		200 V ÷ 800 V	
<b>On-State Current</b>	<b>Gate Trigger Current</b>								
8 Amp	2 mA to 15 mA								
<b>Off-State Voltage</b>									
200 V ÷ 800 V									

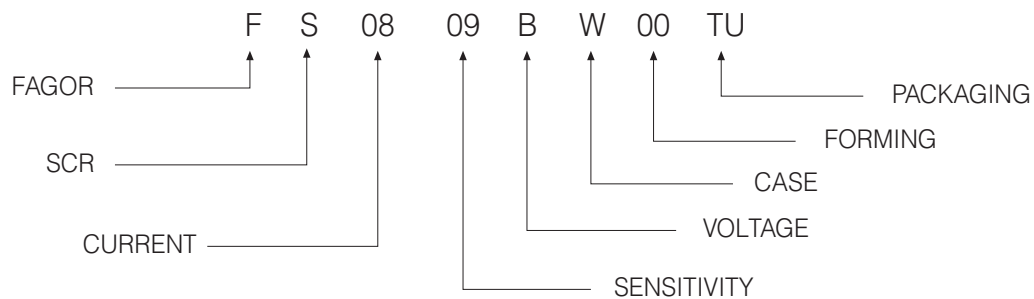
**Absolute Maximum Ratings, according to IEC publication No. 134**

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110\text{ °C}$	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	90	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 50 Hz	80	A
$I^2t$	Fusing Current	$t_p = 10\text{ms}$ , Half Cycle	32	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.	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
$V_{RGM}$	Reverse Gate Voltage		5	V
$V_{iso}$	R.M.S. isolation voltage 50/60 Hz sinusoidal waveform		2.500	Vac

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 MAX	2 15	m A
$V_{GT}$	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 $I_T = 16 \text{ Amp}, tp = 380 \mu\text{s}, T_j = 25^\circ C$	MAX	1.5	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	$V_D = V_{DRM}, R_{GK} = 1k\Omega, T_j = 125^\circ C$ $V_R = V_{RRM}, T_j = 25^\circ C$	MAX MAX	2 5	mA $\mu$ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC	for AC 360° conduction angle		3.5	$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Amb for DC	$S = 1 \text{ cm}^2$		50	$^\circ C/W$

**PART NUMBER INFORMATION**


## STANDARD SCR

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

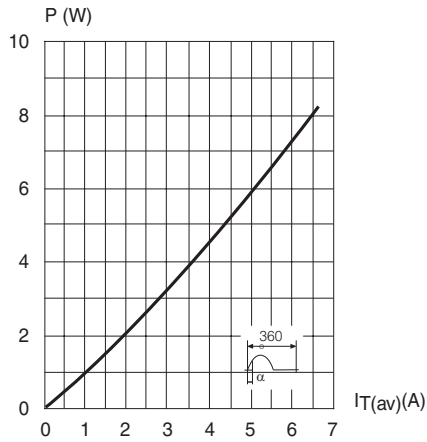


Fig. 2: Average and D.C. on-state current versus case temperature.

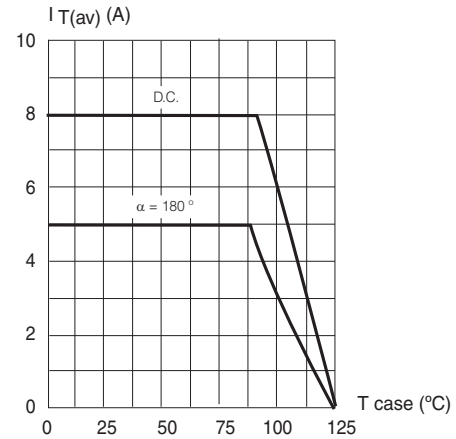


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

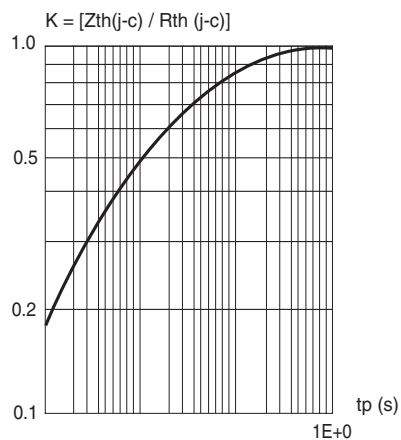


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

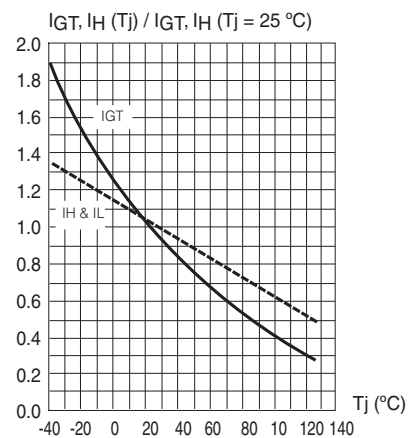


Fig. 5: Non repetitive surge peak on-state current versus number of cycles.

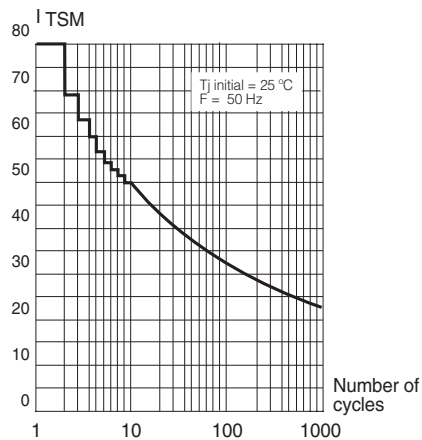
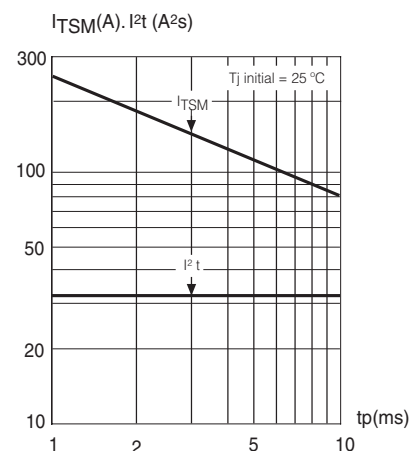
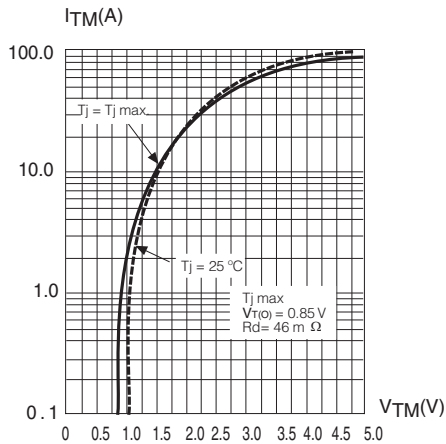


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10$  ms, and corresponding value of  $I^2t$ .



**STANDARD SCR**

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



**PACKAGE MECHANICAL DATA TO220-F**

REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	3.55	4.50	4.90
B	2.34	3.00	3.70
D	2.03	2.70	2.96
E	0.35	0.60	0.70
F	0.25	0.60	1.01
F1	0.70	1.30	1.78
F2	0.70	1.70	1.78
G	4.88	5.00	5.28
G1	2.34	2.50	2.74
H	9.65	10.15	10.67
L	12.70	13.35	14.73
L1	2.93	3.75	6.35
L3	26.90	28.35	31.20
L6	14.22	15.00	16.50
L7	8.30	8.40	9.59
Diam.	3.00	3.20	3.28