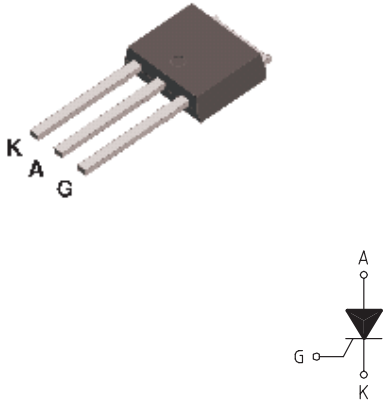


**STANDARD SCR**

<p style="text-align: center;"><b>IPAK (Plastic)</b></p> <div style="text-align: center;">  </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><b>On-State Current</b></td> <td style="text-align: center;"><b>Gate Trigger Current</b></td> </tr> <tr> <td style="text-align: center;">8 Amp</td> <td style="text-align: center;">0.5 mA to 15 mA</td> </tr> <tr> <td colspan="2" style="text-align: center;"><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	0.5 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	0.5 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	73	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 50 Hz	70	A
$I^2t$	Fusing Current	$t_b = 10\text{ms}$ , Half Cycle	24.5	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

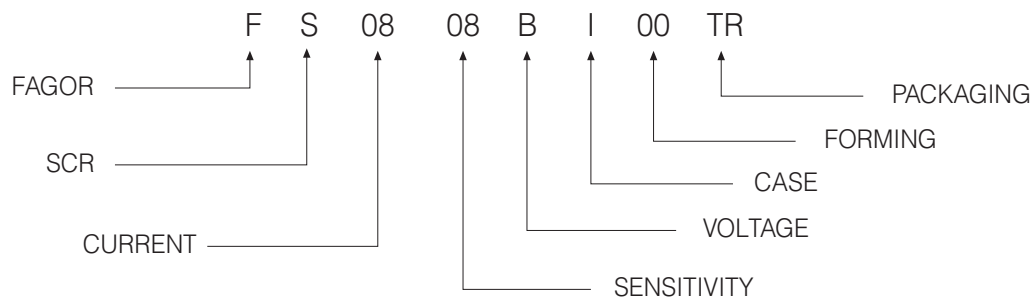
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE					Unit
			B	D	M	S	N	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	700	800	V

## STANDARD SCR

### Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY		Uni	
			08	09		
$I_{GT}$	Gate Trigger Current	$V_D = 12 V_{DC}$ , $R_L = 140\Omega$ , $T_j = 25^\circ C$	MIN MAX	0.5 5	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	$I_T = 500$ mA,	MAX	25	40	mA
$I_L$	Latching Current	$I_G = 1.2 I_{GT}$	MAX	30	50	mA
$dV / dt$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$ , Gate open $T_j = 125^\circ C$	MIN	50	150	V/ $\mu$ s
$dI / dt$	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/ $\mu$ s
$V_{TM}$	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 $\Omega$
$I_{DRM} / I_{RRM}$	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 10		mA $\mu$ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC	for AC 360° conduction angle		1.8		°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Amb for DC	$S = 1$ cm <sup>2</sup>		100		°C/W

### PART NUMBER INFORMATION



## STANDARD SCR

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

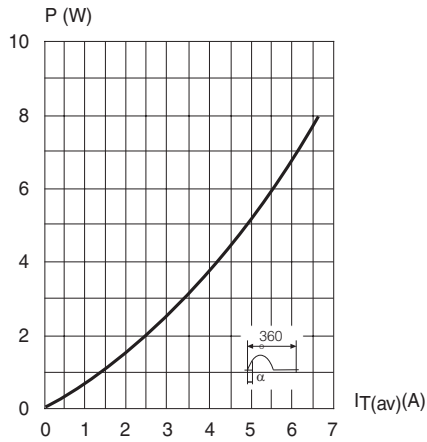


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

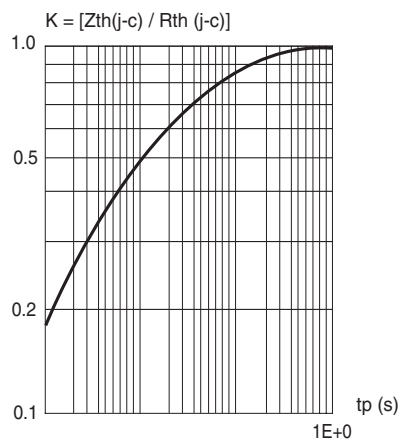


Fig. 5: Non repetitive surge peak on-state current versus number of cycles.

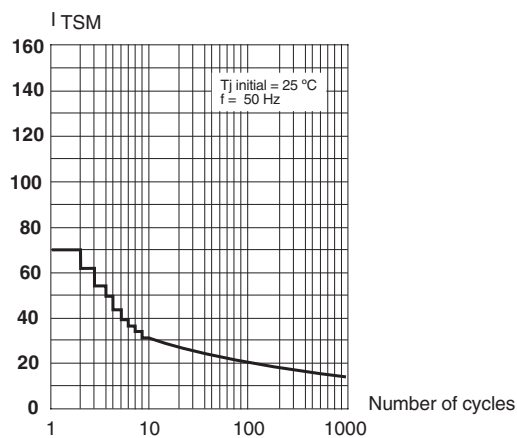


Fig. 2: Average and D.C. on-state current versus case temperature.

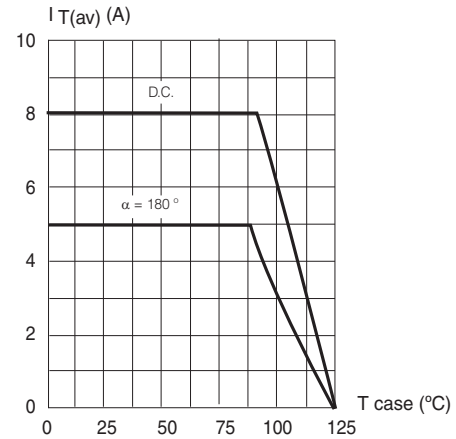


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

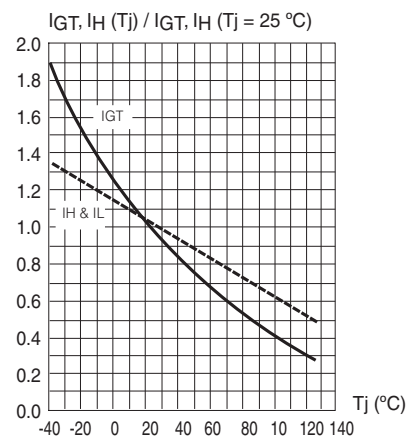
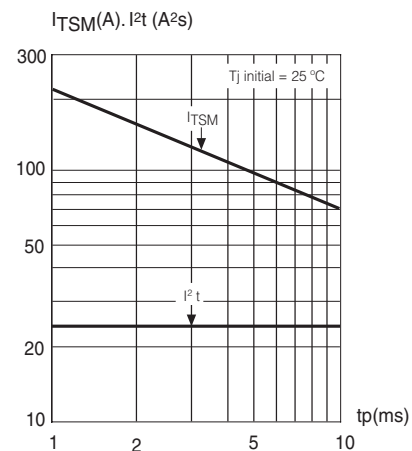
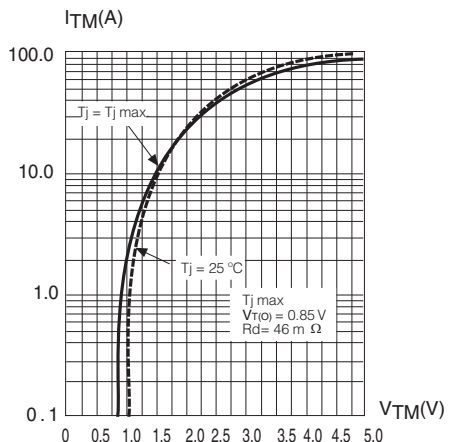


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10 \text{ ms}$ , and corresponding value of  $I^2t$ .



## STANDARD SCR

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



### PACKAGE MECHANICAL DATA IPAK TO 251-AA

REF.	DIMENSIONS		
	Millimeters		
	Min.	Nominal	Max.
A	2.19	2.30 ± 0.11	2.41
A1	0.89	1.08 ± 0.19	1.27
b	0.50	0.70 ± 0.20	0.90
b1	0.70	0.92 ± 0.22	1.14
c	0.43	0.51 ± 0.08	0.59
c2	0.43	0.62 ± 0.19	0.81
D	5.40	5.81 ± 0.41	6.22
D1	5.70	5.90 ± 0.20	6.10
E	6.35	6.54 ± 0.19	6.73
E1	5.20	5.33 ± 0.13	5.46
e	2.25	2.30 ± 0.05	2.35
L	7.50	8.58 ± 1.08	9.66
L1	1.90	2.10 ± 0.20	2.28
L3	0.89	1.27 ± 0.38	1.65

Marking: type number  
Weight: 0.2 g