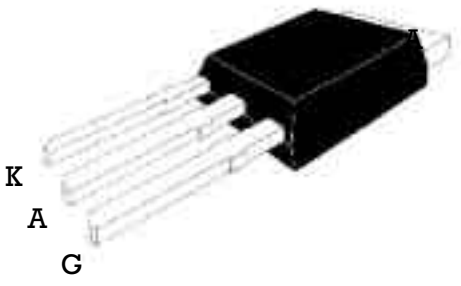


SENSITIVE GATE SCR

<p style="text-align: center;">IPAK (Plastic)</p> 	<div> <div> On-State Current 4 Amp </div> <div> Gate Trigger Current < 200 μA </div> </div> <div> Off-State Voltage 200 V ÷ 600 V </div> <p>These series of Silicon Controlled Rectifier use a high performance PNP technology.</p> <p>These parts are intended for general purpose applications where high gate sensitivity is required like small engine ignition, SMPS crowbar protection, food procesor.</p>
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Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Min.	Max.	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 105\text{ }^{\circ}\text{C}$ $T_a = 25\text{ }^{\circ}\text{C}$	4 1.35		A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $= 180\text{ }^{\circ}$, $T_c = 105\text{ }^{\circ}\text{C}$ $T_a = 25\text{ }^{\circ}\text{C}$	2.5 0.9		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz	33		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz	30		A
I^2t	Fusing Current	$t = 10\text{ms}$, Half Cycle	4.5		A ² s
V_{GRM}	Peak Reverse Gate Voltage	$I_{GR} = 10\text{ }\mu\text{A}$	8		V
I_{GM}	Peak Gate Current	20 μ s max.		1.2	A
P_{GM}	Peak Gate Dissipation	20 μ s max.		3	W
$P_{G(AV)}$	Gate Dissipation	20 ms max.		0.2	W
T_j	Operating Temperature		-40	+125	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40	+150	$^{\circ}\text{C}$
T_L	Lead Temperature for Soldering	10s at 4.5mm from case		260	$^{\circ}\text{C}$

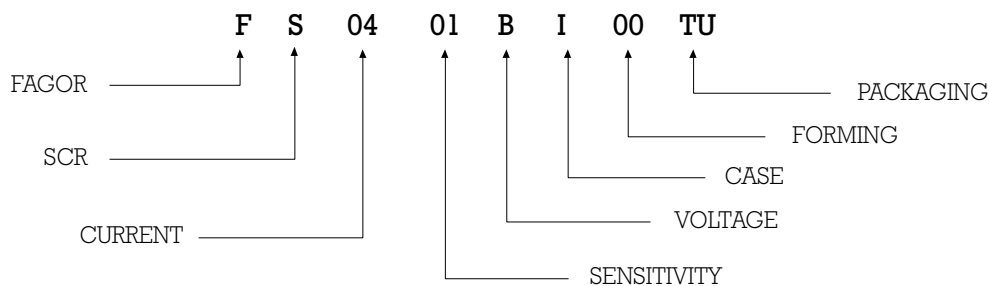
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE			Unit
			B	D	M	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ K}$	200	400	600	V

SENSITIVE GATE SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY				Unit
				01	04	02	03	
I_{GT}	Gate Trigger Current	$V_D = 12 V_{DC}$, $R_L = 33$, $T_j = 25^\circ C$	MIN MAX	1 20	15 50	 200	20 200	μA
I_{DRM} / I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}$, $R_{GK} = 220$, $T_j = 125^\circ C$ $V_R = V_{RRM}$, $T_j = 25^\circ C$	MAX MAX	1 5				mA μA
V_{TM}	On-state Voltage	at $I_T = 8 \text{ Amp}$, $t_p = 380 \mu s$, $T_j = 25^\circ C$	MAX	1.6				V
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}$, $R_L = 33$, $T_j = 25^\circ C$	MAX	0.8				V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}$, $R_L = 3.3K$, $R_{GK} = 220$, $T_j = 125^\circ C$	MIN	0.1				V
I_H	Holding Current	$I_T = 50 \text{ mA}$, $R_{GK} = 1K$, $T_j = 25^\circ C$	MAX	5				mA
I_L	Latching Current	$I_G = 1 \text{ mA}$, $R_{GK} = 1K$, $T_j = 25^\circ C$	MAX	6				mA
dv / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$, $R_{GK} = 220$, $T_j = 125^\circ C$	MIN	10	10	5	10	$V/\mu s$
di / dt	Critical Rate of Current Rise	$I_G = 2 \times I_{GT}$, $T_r = 100 \text{ ns}$, $F = 60 \text{ Hz}$, $T_j = 125^\circ C$	MIN	50				$A/\mu s$
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC			7.5				$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient			100				$^\circ C/W$

PART NUMBER INFORMATION



SENSITIVE GATE SCR

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

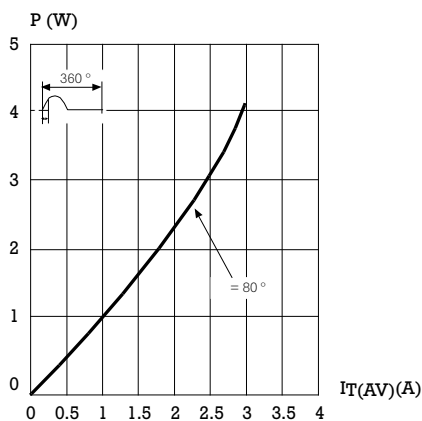


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{case}).

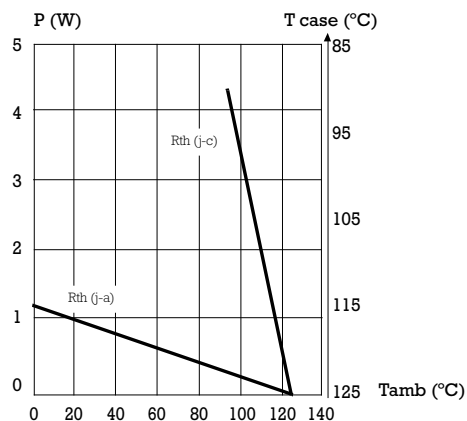


Fig. 3: Average on-state current versus case temperature

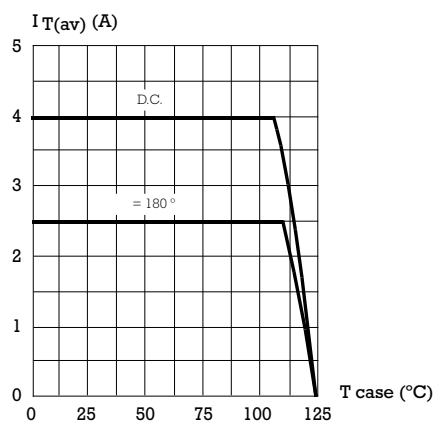


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

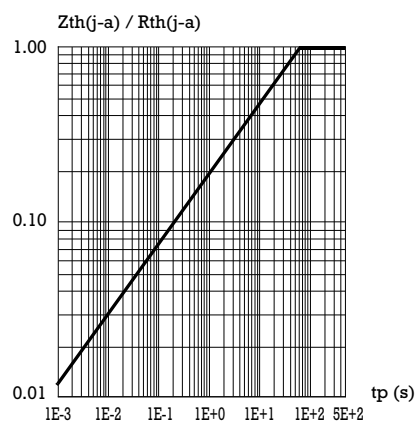


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

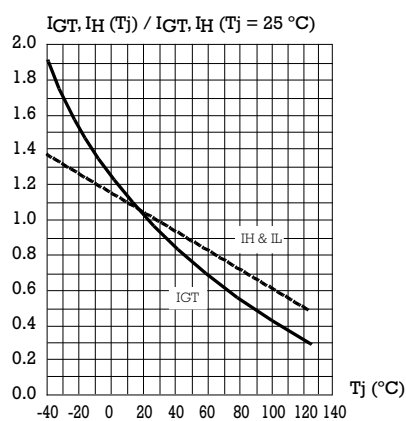
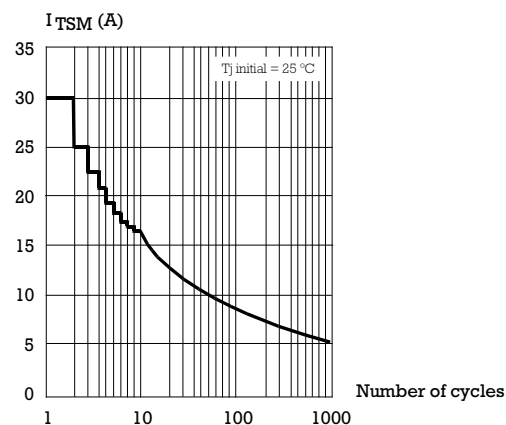


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



SENSITIVE GATE SCR

Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: t_p 10 ms, and corresponding value of I^2t .

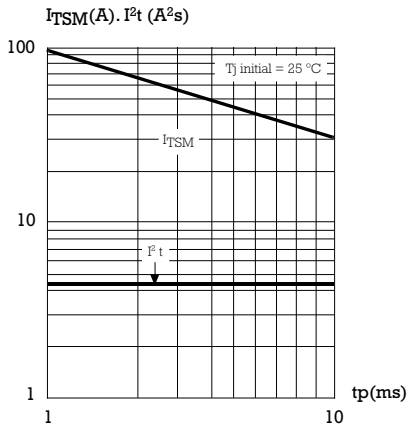
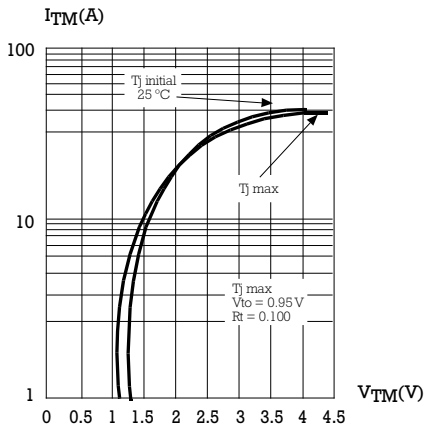


Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA IPAK TO 251-AA

