

SENSITIVE GATE SCR

IPAK (Plastic)	On-State Current 4 Amp	Gate Trigger Current < 200 μ A
	Off-State Voltage 200 V ÷ 600 V	
	These series of S ilicon C ontrolled R ectifier use a high performance PNPN technology. These parts are intended for general purpose applications where high gate sensitivity is required like small engine ignition, SMPS crowbar protection, food procesor.	

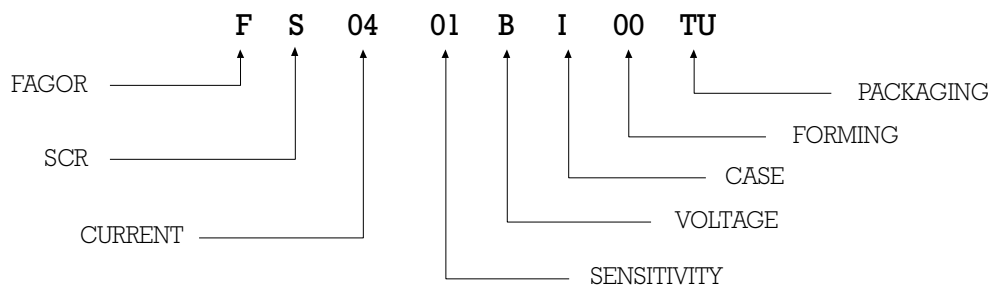
Absolute Maximum Ratings, according to IEC publication No. 134

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, $\theta = 180^\circ$, $T_c = 105\text{ }^\circ\text{C}$ $T_a = 25\text{ }^\circ\text{C}$	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^2s
V_{GRM}	Peak Reverse Gate Voltage	$I_{GR} = 10\text{ }\mu\text{A}$	8		V
I_{GM}	Peak Gate Current	20 μs max.		1.2	A
P_{GM}	Peak Gate Dissipation	20 μs 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	$V_D = 12 V_{DC}, R_L = 33 \Omega, T_j = 25^\circ C$	MIN	1	15		20	μA
			MAX	20	50	200	200	
I_{DRM} / I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}, R_{GK} = 220 \Omega, T_j = 125^\circ C$	MAX	1				mA
		$V_R = V_{RRM}, T_j = 25^\circ C$	MAX	5				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	$V_D = 12 V_{DC}, R_L = 33 \Omega, T_j = 25^\circ C$	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
I_H	Holding Current	$I_T = 50 \text{ mA}, R_{GK} = 1K \Omega, T_j = 25^\circ C$	MAX	5				mA
I_L	Latching Current	$I_G = 1 \text{ mA}, R_{GK} = 1K \Omega, T_j = 25^\circ C$	MAX	6				mA
dv / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, R_{GK} = 220 \Omega, T_j = 125^\circ C$	MIN	10	10	5	10	V/ μs
di / dt	Critical Rate of Current Rise	$I_G = 2 \times I_{GT}, Tr = 100 \text{ ns}, F = 60 \text{ Hz}, T_j = 125^\circ C$	MIN	50				A/ μs
$R_{th(j-c)}$	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

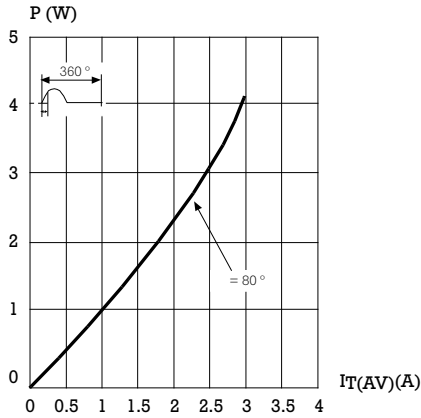


Fig. 3: Average on-state current versus case temperature

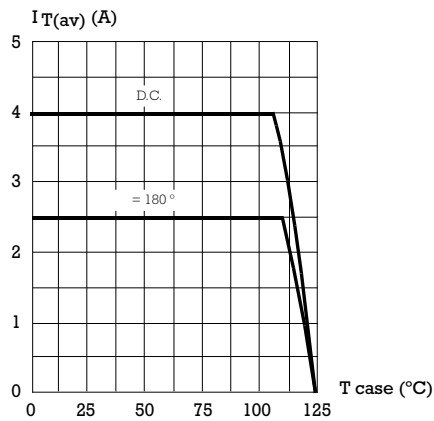


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

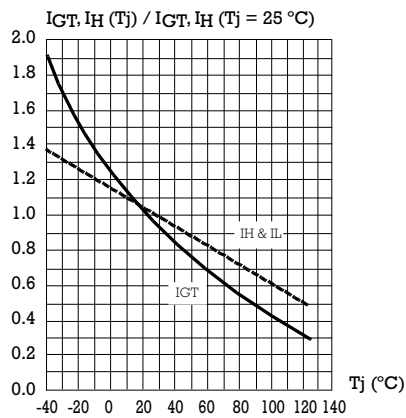


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and T case).

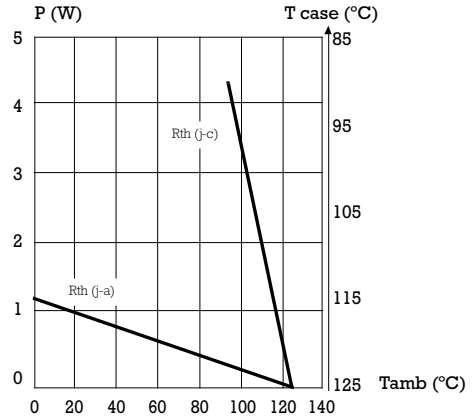


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

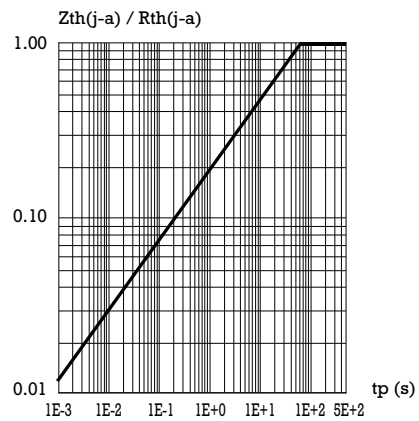
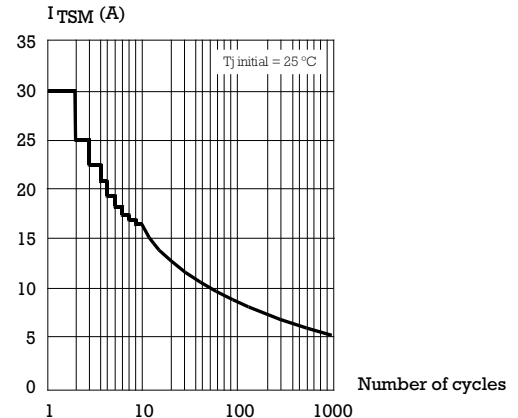


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



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 .

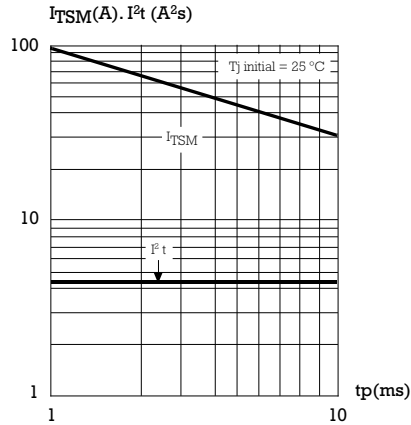
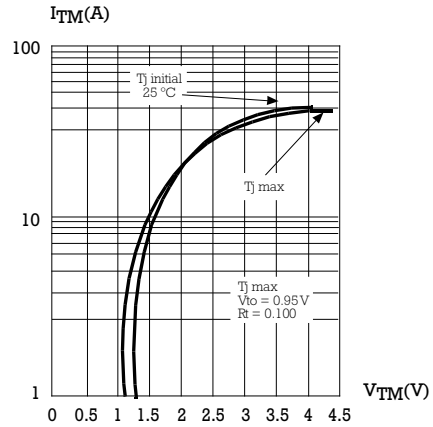


Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA IPAK TO 251-AA

REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	2.19	2.3±0.08	2.38
A1	0.89	1.067±0.01	1.14
b	0.64	0.75±0.1	0.89
b1	0.76	0.95	1.14
c	0.46		0.58
c2		0.8±0.013	
D	5.97	6.1±0.1	6.22
D1	5.21		5.52
E	6.35	6.58±0.14	6.73
E1	5.21	5.36±0.1	5.46
e		2.28BSC	
L	8.89	9.2±0.2	9.65
L1	1.91	2±0.1	2.28
L3	0.89		1.27

Marking: type number
Weight: 0.2 g