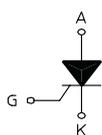
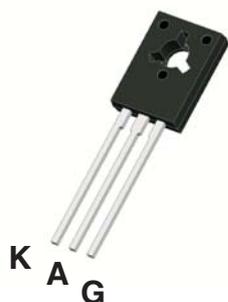


SENSITIVE GATE SCR
TO-225AA / TO-126


On-State Current **Gate Trigger Current**
 4 Amp to 200 μ A

Off-State Voltage
 200 V ÷ 800 V

These series of **Silicon Controlled Rectifier** use a high performance PNPN technology.

These parts are intended for general purpose applications where high gate sensitivity is required.

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 115\text{ }^\circ\text{C}$	4	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180\text{ }^\circ$, $T_c = 115\text{ }^\circ\text{C}$	2.55	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz	22	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz	20	A
I^2t	Fusing Current	$t_p = 10\text{ms}$, Half Cycle	2	A ² s
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	20ms max.	0.2	W
T_j	Operating Temperature		(-40 to +125)	$^\circ\text{C}$
T_{stg}	Storage Temperature		(-40 to +150)	$^\circ\text{C}$
T_{sld}	Soldering Temperature	10s max.	260	$^\circ\text{C}$

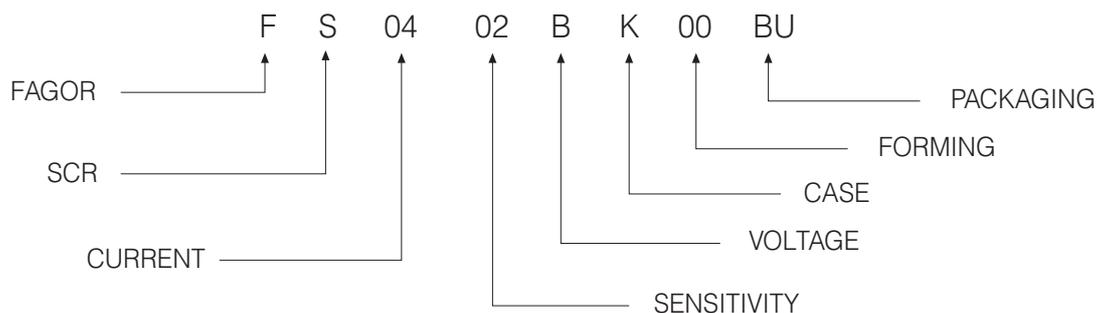
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE					Unit
			B	D	M	S	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	700	800	V

SENSITIVE GATE SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY			Unit	
			01	02	04		
I _{GT}	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 140Ω, T _j = 25 °C	MIN	1		15	μA
			MAX	20	200	50	
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 140Ω, T _j = 25 °C	MAX	0.8		V	
V _{GD}	Gate Non Trigger Voltage	V _D = V _{DRM} , R _L = 3.3kΩ, R _{GK} = 220Ω T _j = 125 °C	MIN	0.2		V	
V _{RGM}	Reverse Gate Voltage	I _{RG} = 10μA,	MIN	8		V	
I _H	Holding Current	I _T = 50 mA, R _{GK} = 1kΩ, T _j = 25 °C	MAX	5		mA	
I _L	Latching Current	I _G = 1 mA, R _{GK} = 1 kΩ	MAX	6		mA	
dV / dt	Critical Rate of Voltage Rise	V _D = 0.67 x V _{DRM} , R _{GK} = 1 kΩ, T _j = 125 °C	MIN	10	5	5	V/μs
dI / dt	Critical Rate of Current Rise	I _G = 2 x I _{GT} , tr ≤ 100 ns, f = 60 Hz, T _j = 125 °C	MIN	50		A/μs	
V _{TM}	On-state Voltage	at I _T = 4 Amp, tp = 380 μs, T _j = 25 °C	MAX	1.6		V	
V _{t0}	Threshold Voltage	T _j = 125 °C	MAX	0.85		V	
r _d	Dynamic resistance	T _j = 125 °C	MAX	90		mΩ	
I _{DRM} / I _{RRM}	Off-State Leakage Current	V _D = V _{DRM} , R _{GK} = 1kΩ, T _j = 125 °C	MAX	0.1		mA	
		V _R = V _{RRM} , T _j = 25 °C	MAX	5		μA	
R _{th(j-c)}	Thermal Resistance Junction-Amb for DC	for AC 360° conduction angle		3		°C/W	
R _{th(j-a)}	Thermal Resistance Junction-Amb for DC	S = 1cm ²		75		°C/W	

PART NUMBER INFORMATION



SENSITIVE GATE SCR

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

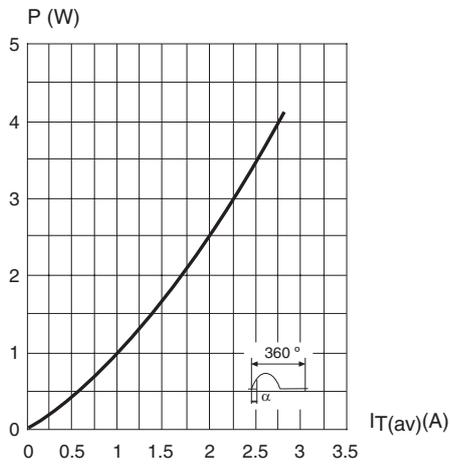


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration

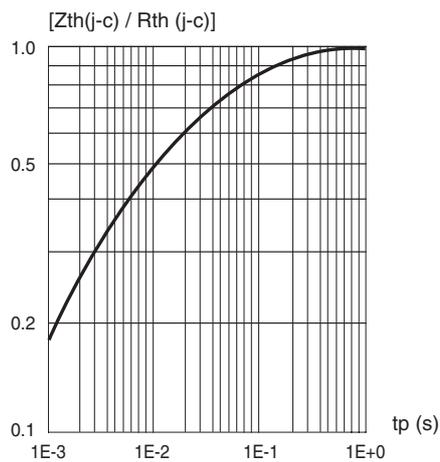


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

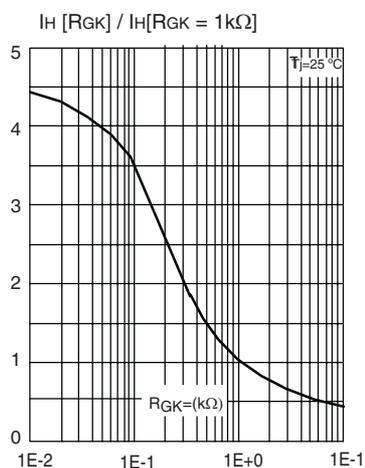


Fig. 2: Average and D.C. on-state current versus case temperature

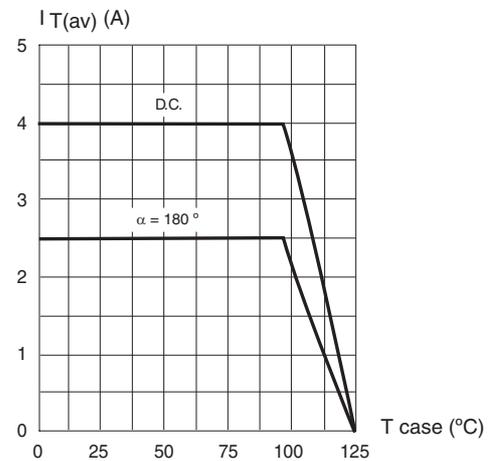


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature

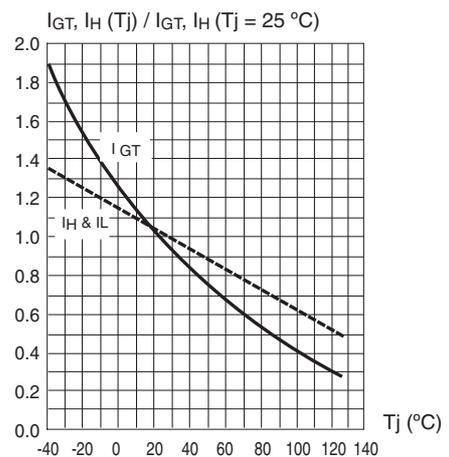
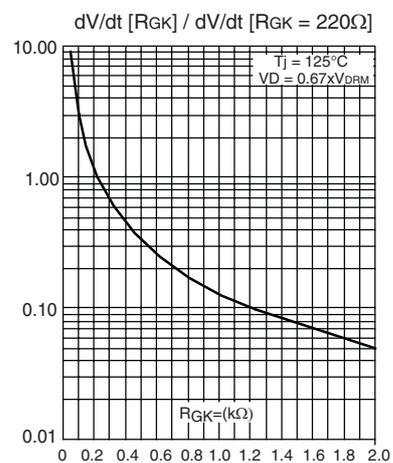


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).



SENSITIVE GATE SCR

Fig. 7: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).

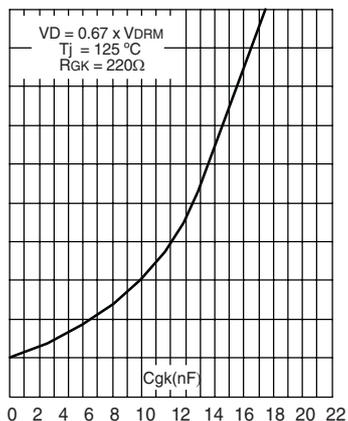


Fig. 8: Non repetitive surge peak on-state current versus number of cycles

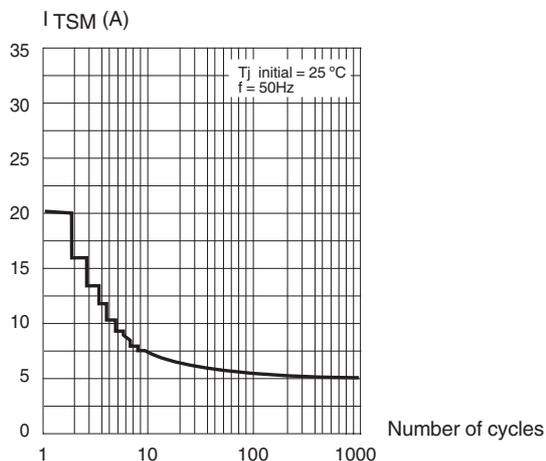


Fig. 9: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 10 ms, and corresponding value of I²t

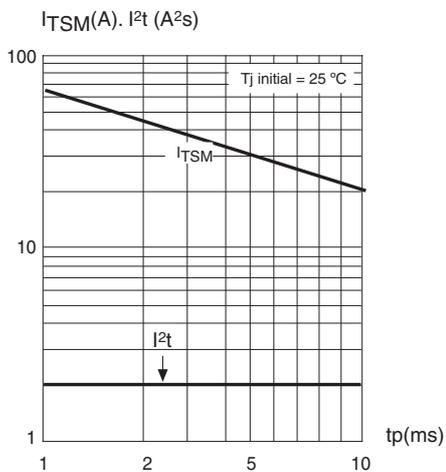
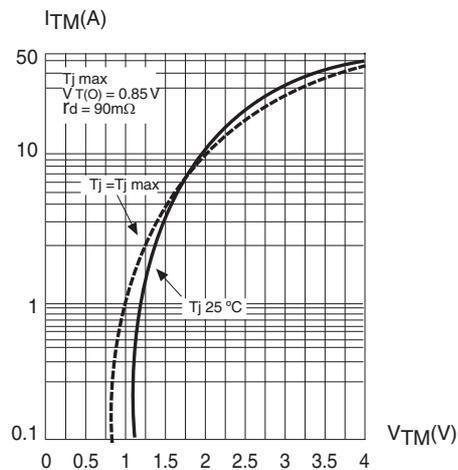
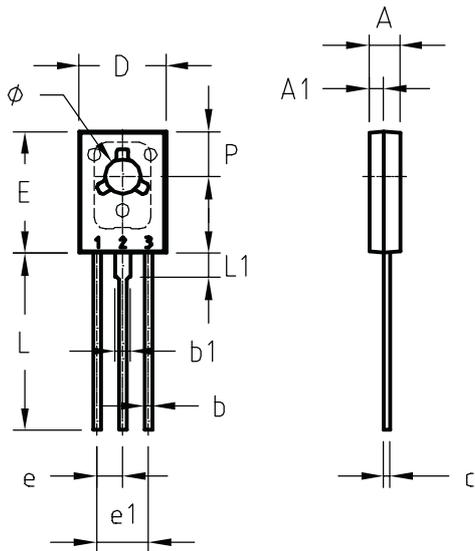


Fig. 10: On-state characteristics (maximum values)



SENSITIVE GATE SCR

PACKAGE MECHANICAL DATA TO-225AA / TO-126



REF	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	2.500		2.900
A1	1.100		1.500
b	0.660		0.860
b1	1.170		1.370
c	0.450		0.600
D	7.400		7.800
E	10.600		11.000
e		2.290	
e1	4.480		4.680
L	15.300		15.700
L1	2.100		2.300
P	3.900		4.100
\emptyset	3.000		3.200

Mounting Torque

0.67 N.m

(*) Limiting values and life support applications, see Web page.