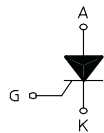
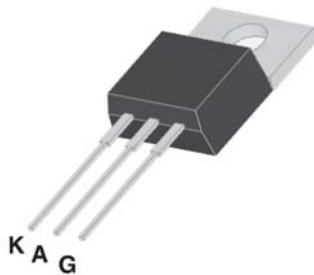


STANDARD SCR

TO220-AB



On-State Current **Gate Trigger Current**
 12 Amp 0.5 mA to 25 mA

Off-State Voltage
 200 V ÷ 800 V

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

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

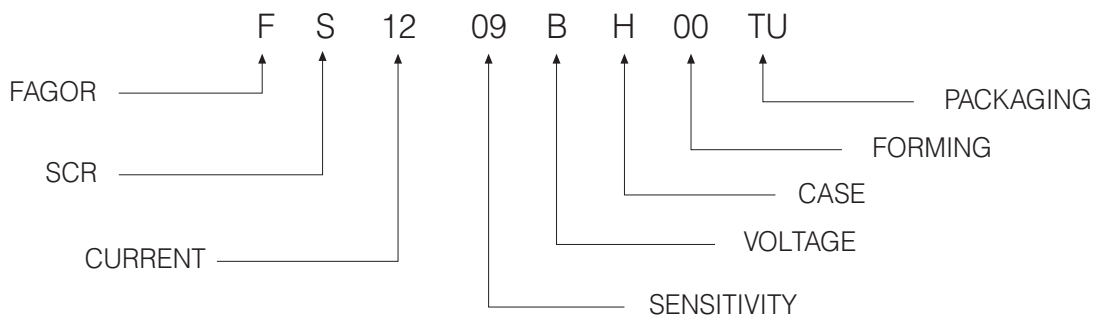
Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110\text{ °C}$	12	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180\text{ °}$, $T_c = 110\text{ °C}$	8	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz	154	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz	140	A
I^2t	Fusing Current	$t_p = 10\text{ms}$, Half Cycle	98	A ² s
I_{GM}	Peak Gate Current	20 μs max.	4	A
P_{GM}	Peak Gate Dissipation	20 μs max.	10	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	E	M	S	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	500	600	700	800	V

STANDARD SCR
Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY			Uni	
			08	09	10		
I_{GT}	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	MIN MAX	0.5 5	2 15	2 25	m A
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	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	15	30	40	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$	MAX	30	60	60	mA
dV / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{ Gate open}, T_j = 125^\circ C$	MIN	50	200	200	V/ μ 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/ μ s
V_{TM}	On-state Voltage	at $I_T = 24 \text{ Amp}, tp = 380 \mu\text{s}, T_j = 25^\circ C$	MAX	1.6			V
V_{t0}	Threshold Voltage	$T_j = 125^\circ C$	MAX	0.80			V
r_d	Dynamic resistance	$T_j = 125^\circ C$	MAX	30			m Ω
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 μ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC	for AC 360° conduction angle		1.3			$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Amb for DC	$S = 1 \text{ cm}^2$		60			$^\circ C/W$

PART NUMBER INFORMATION


STANDARD SCR

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

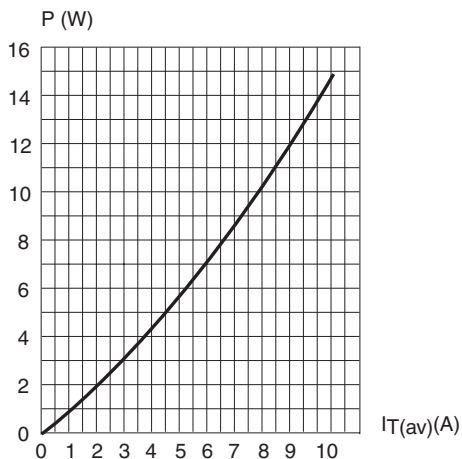


Fig. 2: Average and D.C. on-state current versus case temperature.

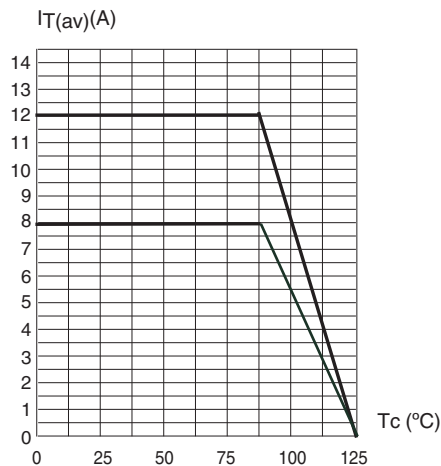


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

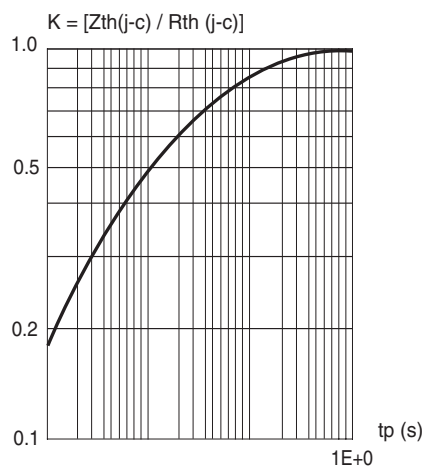


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

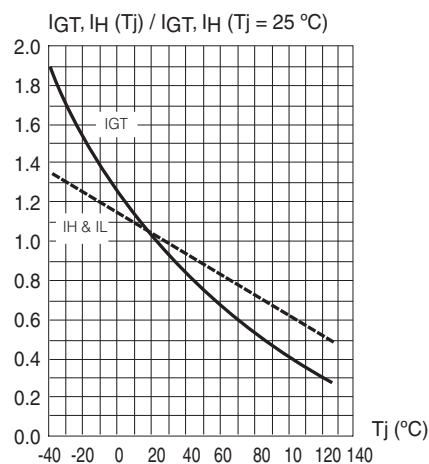


Fig. 5: Non repetitive surge peak on-state current versus number of cycles.

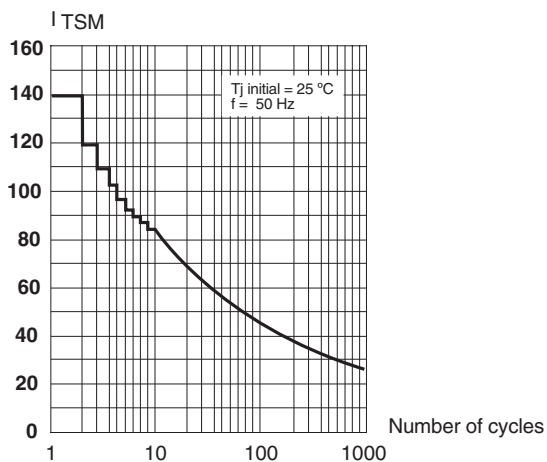
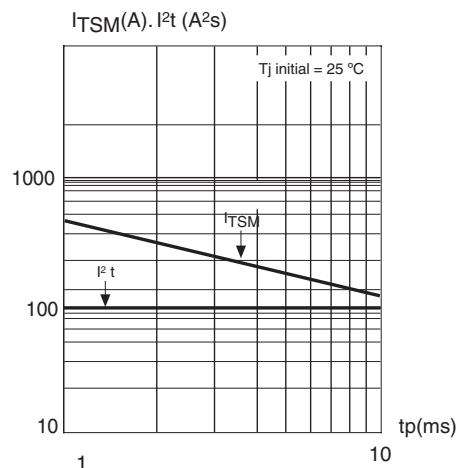
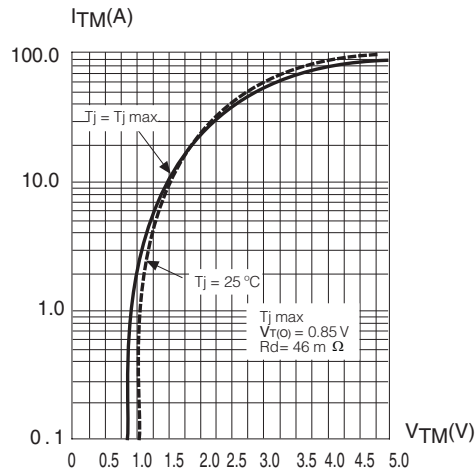


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10 \text{ ms}$, and corresponding value of I^2t .



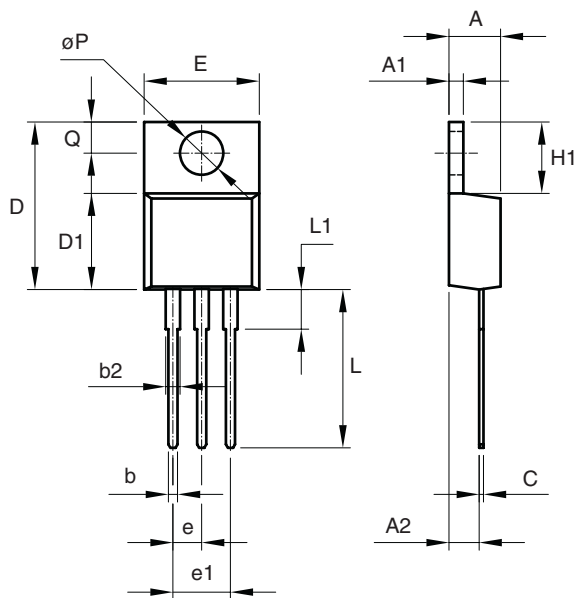
STANDARD SCR

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



PACKAGE MECHANICAL DATA

TO-220AB



REF.	DIMENSIONS	
	Millimeters	
	Min.	Max.
A	4.47	4.67
A1	1.17	1.37
A2	2.52	2.82
b	0.71	0.91
b2	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.36
e	2.51	2.57
e1	4.98	5.18
H1	6.15	6.45
L	13.40	13.96
L1	3.56	3.96
P	3.735	3.935
Q	2.59	2.89

Mounting Torque

1 N.m

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

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