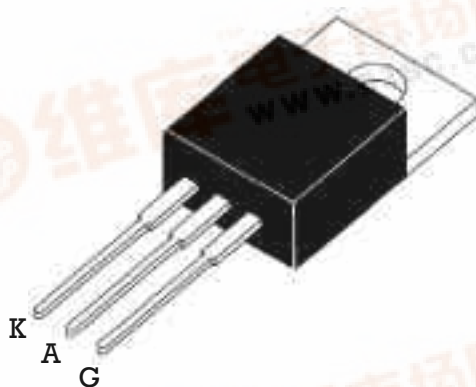




FS16...H

STANDARD SCR

TO220-AB



On-State Current

16 Amp

Gate Trigger Current

> 2 mA to < 40 mA

Off-State Voltage

200 V ÷ 600 V

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

These parts are intended for general purpose high current applications where moderate gate insensitivity is required.

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Min.	Max.	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110^\circ C$		16	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $Q = 180^\circ$, $T_c = 110^\circ C$		10	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz		200	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz		190	A
I^2t	Fusing Current	$t_p = 10ms$, Half Cycle		180	A ² s
V_{GRM}	Peak Reverse Gate Voltage	$I_{GR} = 10 \mu A$		5	V
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	+125	°C
T_{stg}	Storage Temperature		-40	+150	°C
T_{sld}	Soldering Temperature	10s max.		260	°C

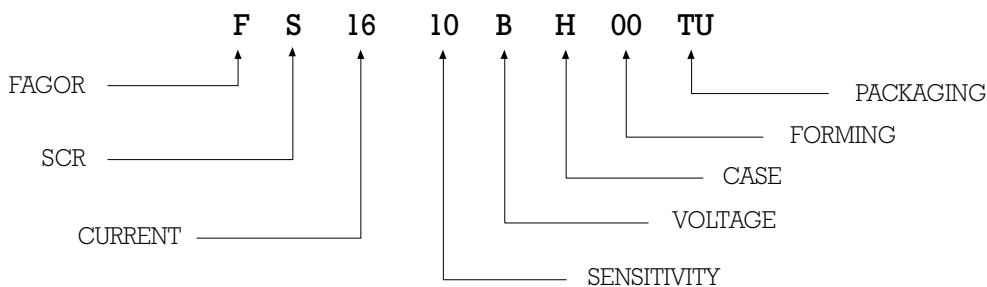
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE			Unit
			B	D	M	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1 KW$	200	400	600	V

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Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY		Unit
				10	14	
I_{GT}	Gate Trigger Current	$V_D = 12 V_{DC}$, $R_L = 33W$, $T_j = 25^\circ C$	MIN MAX	2 25	4 40	mA
I_{DRM} / I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}$, $R_{GK} = 220W$, $T_j = 125^\circ C$ $V_R = V_{RRM}$, $T_j = 25^\circ C$	MAX MAX	2 5		mA μA
V_{TM}	On-state Voltage	at $I_T = 32 \text{ Amp}$, $t_p = 380 \mu s$, $T_j = 25^\circ C$	MAX	1.6		V
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}$, $R_L = 33W$, $T_j = 25^\circ C$	MAX	1.3		V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}$, $R_L = 3.3KW$, $T_j = 125^\circ C$	MIN	0.2		V
I_H	Holding Current	$I_T = 500 \text{ mA}$, Gate open, $T_j = 25^\circ C$	MAX	40	50	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$	MAX	60	90	mA
dv / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$, Gate open $T_j = 125^\circ C$	MIN	500	1000	V/ μs
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/ μs
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC			1.1		$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Amb			60		$^\circ C/W$
V_{t0}	Threshold Voltage	$T_j = 125^\circ C$	MAX	0.77		V
R_d	Dynamic resistance	$T_j = 125^\circ C$	MAX	23		mW

PART NUMBER INFORMATION



STANDARD SCR

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

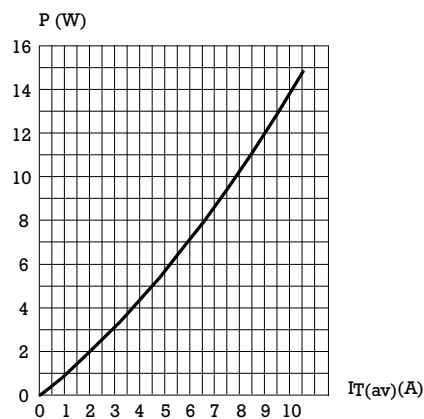


Fig. 2: Average and D.C. on-state current versus case temperature.

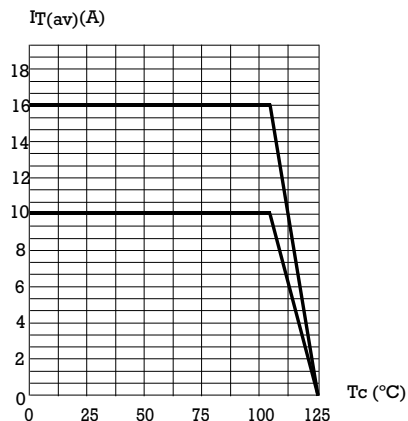


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

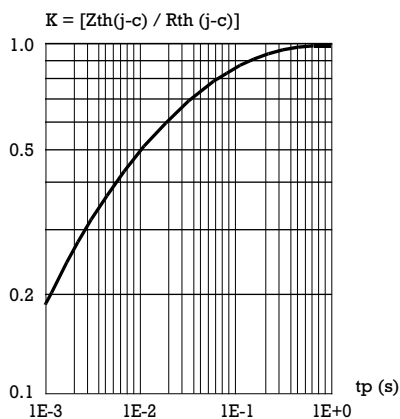


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature.

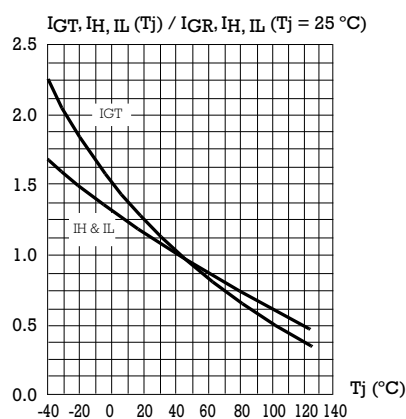


Fig. 5: Surge peak on-state current versus number of cycles.

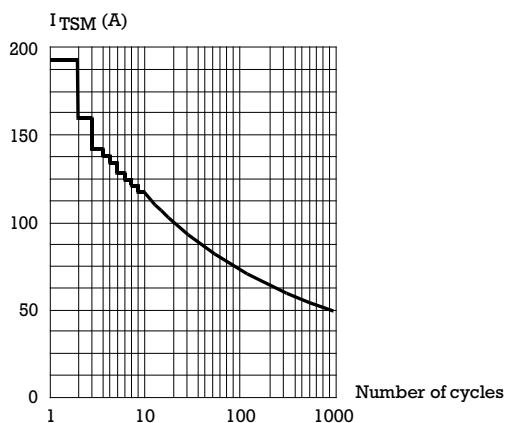
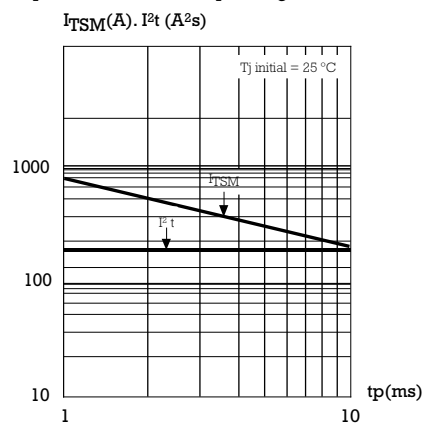
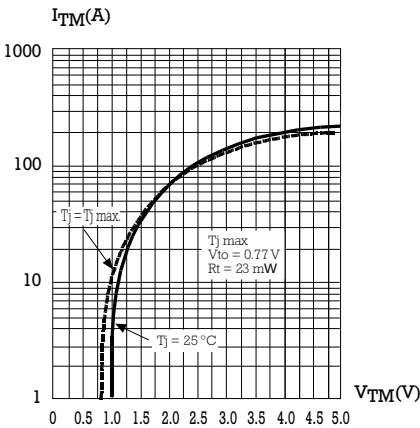


Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10$ ms, and corresponding value of I^2t .

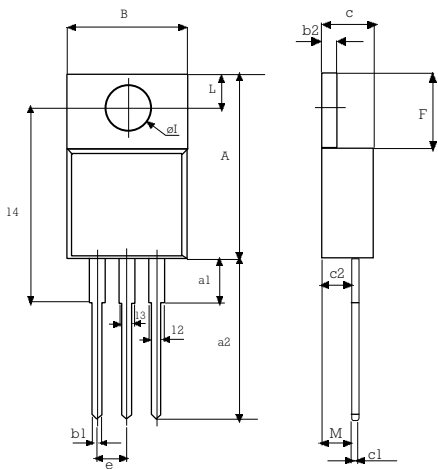


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Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA TO-220AB



REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	15.20		15.90
a1		3.75	
a2	13.00		14.00
B	10.00		10.40
b1	0.61		0.88
b2	1.23		1.32
C	4.40		4.60
c1	0.49		0.70
c2	2.40		2.72
e	2.40		2.70
F	6.20		6.60
I	3.75		3.85
I4	15.80	16.40	16.80
L	2.65		2.95
I2	1.14		1.70
I3	1.14		1.70
M		2.60	