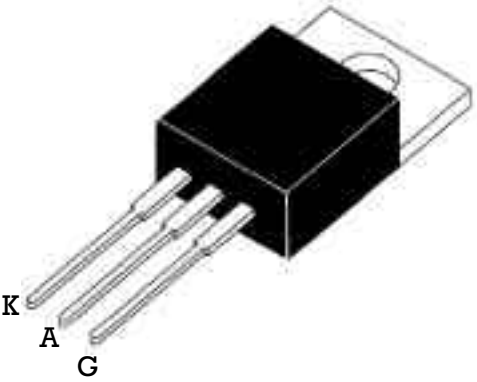


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<p style="text-align: center;">TO220-AB</p> 	<table> <tr> <td>On-State Current 6 Amp</td><td>Gate Trigger Current > 2 mA to < 15 mA</td></tr> <tr> <td colspan="2">Off-State Voltage 200 V ÷ 600 V</td></tr> </table> <p>These series of Silicon Controlled Rectifier use a high performance PNP technology.</p> <p>These parts are intended for general purpose applications where high gate sensitivity is required using surface mount technology.</p>	On-State Current 6 Amp	Gate Trigger Current > 2 mA to < 15 mA	Off-State Voltage 200 V ÷ 600 V	
On-State Current 6 Amp	Gate Trigger Current > 2 mA to < 15 mA				
Off-State Voltage 200 V ÷ 600 V					

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Min.	Max.	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110^\circ C$		6	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $= 180^\circ$, $T_c = 110^\circ C$		3.8	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz		73	A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz		70	A
I^2t	Fusing Current	$t_p = 10ms$, Half Cycle		24.5	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

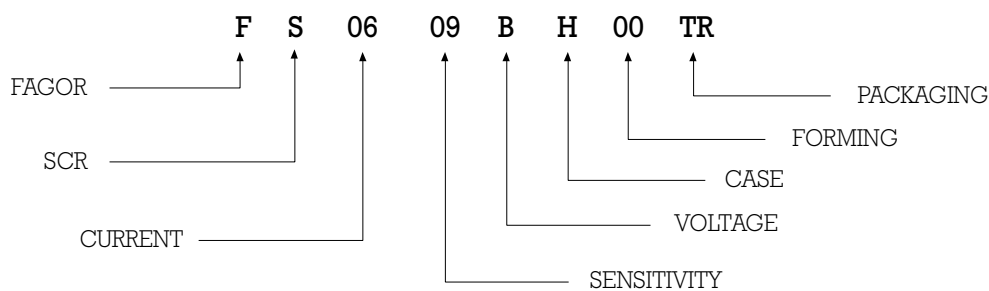
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE			Unit
			B	D	M	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{CK} = 1 K$	200	400	600	V

STANDARD SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY		Unit
				09		
I _{GT}	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 33 Ω, T _j = 25 °C		MIN	2	mA
				MAX	15	
I _{DRM} / I _{RRM}	Off-State Leakage Current	V _D = V _{DRM} ,	T _j = 25 °C	MAX	0.01	mA
		V _R = V _{RRM} ,	T _j = 110 °C	MAX	2	
V _{TM}	On-state Voltage	at I _T = 12 Amp, tp = 380 μs, T _j = 25 °C		MAX	1.6	V
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 33 Ω, T _j = 25 °C		MAX	1.5	V
V _{GD}	Gate Non Trigger Voltage	V _D = V _{DRM} , R _L = 3.3K Ω, T _j = 125 °C		MIN	0.2	V
I _H	Holding Current	I _T = 100 mA, Gate open T _j = 25 °C		MAX	30	mA
I _L	Latching Current	I _G = 1.2 I _{GT} T _j = 25 °C		TYP	50	mA
dv / dt	Critical Rate of Voltage Rise	V _D = 0.67 x V _{DRM} , Gate open T _j = 110 °C		MIN	200	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
R _{th(j-c)}	Thermal Resistance Junction-Case for DC				2.5	°C/W
R _{th(j-a)}	Thermal Resistance Junction-Amb for DC				60	°C/W
V _{i0}	Threshold Voltage	T _j = 125 °C		MAX	0.85	V
R _d	Dynamic resistance	T _j = 125 °C		MAX	46	m

PART NUMBER INFORMATION



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

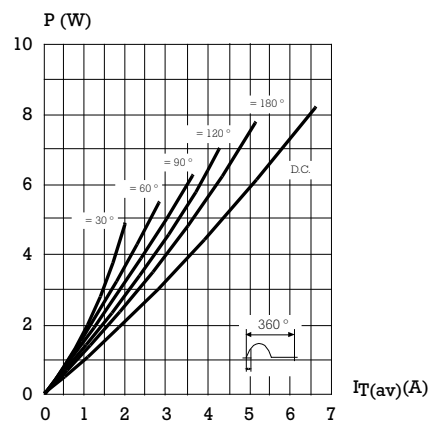


Fig. 3: Average and D.C. on-state current versus case temperature.

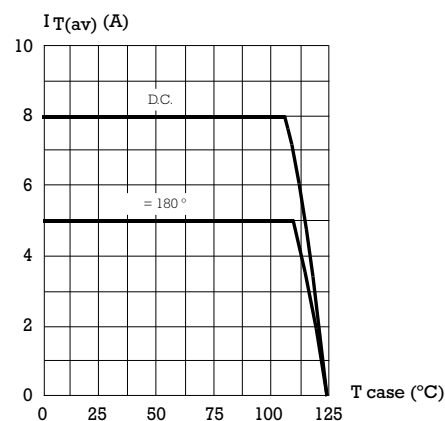


Fig. 5: Relative variation of thermal impedance junction to case versus pulse duration.

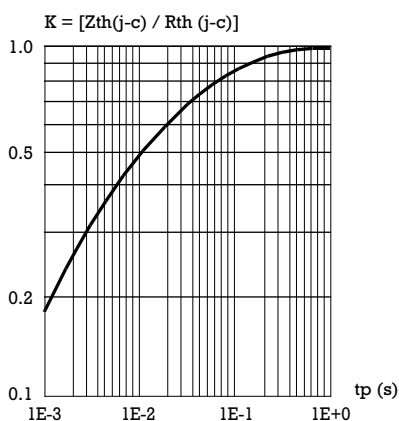


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperatures (Tamb and Tcase) for different thermal resistances (Rth + contact).

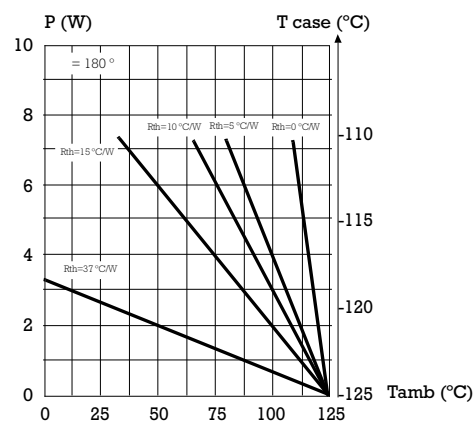


Fig. 4: Average and D.C. on-state current versus ambient temperature (device mounted on FR4 with recommended pad layout).

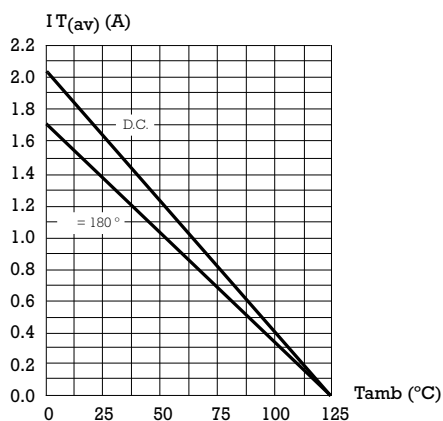
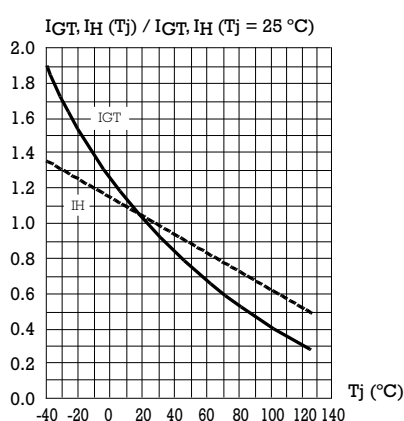


Fig. 6: Relative variation of gate trigger current and holding current versus junction temperature.



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Fig. 7: Non repetitive surge peak on-state current versus number of cycles.

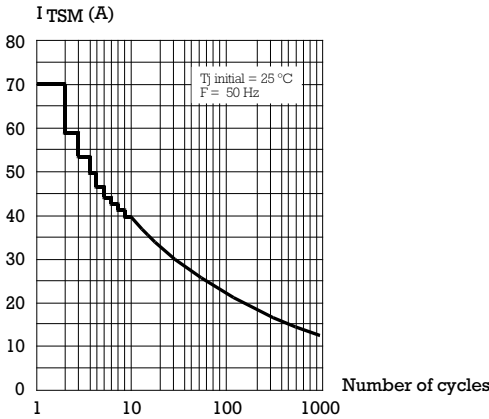


Fig. 9: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10\text{ ms}$, and corresponding value of I^2t .

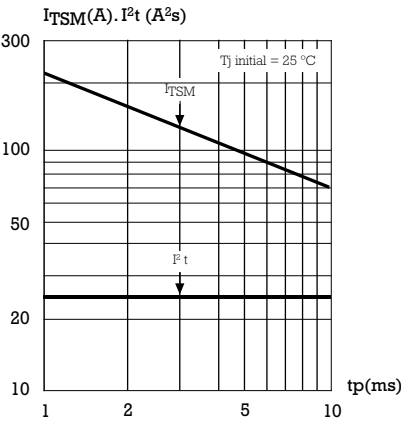
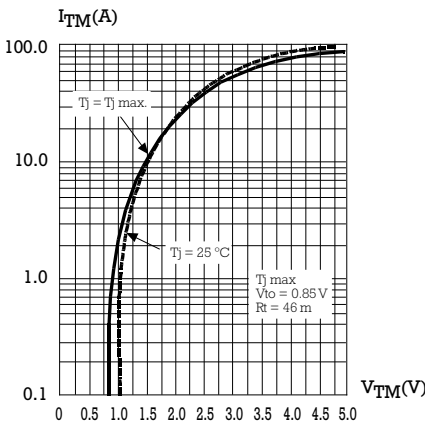
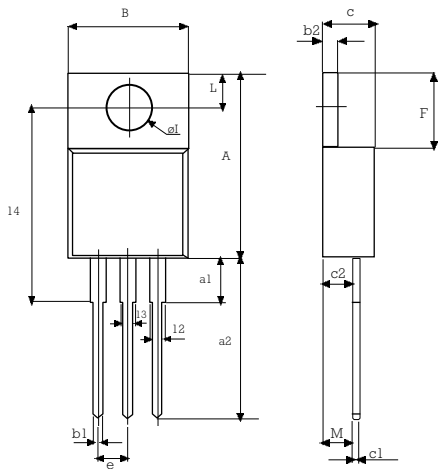


Fig. 8: On-state characteristics (maximum values).



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	