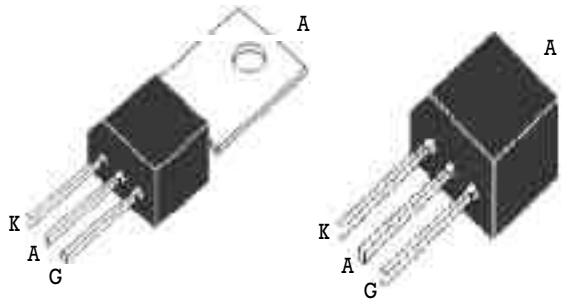
SENSITIVE GATE SCR

TO202-1 (E) TO202-3 (F)



On-State Current	Gate Trigger Current
4 Amp	>15µA < 200 µA

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	180º Conduction Angle, Tc = 115 ºC Ta = 25 ºC		4 1.35	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, Θ = 180 º, Tc = 115 ºC Ta = 25 ºC		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_p = 10ms, Half Cycle		4.5	A^2s
V_{GRM}	Peak Reverse Gate Voltage	I_{GR} = 10 µA		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	ºC
T_{stg}	Storage Temperature		-40	+150	ºC
T_L	Lead Temperature for Soldering	10s at 4.5mm from case		260	ºC

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

SENSITIVE GATE SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY		Unit
				04	02	
I_{GT}	Gate Trigger Current	V_D = 12 V_{DC}, R_L = 140Ω, T_j = 25 ºC	MIN	15		µA
			MAX	50	200	
I_{DRM} / I_{RRM}	Off-State Leakage Current	V_D = V_{DRM}, R_{GK} = 1KΩ, T_j = 125 ºC	MAX	1		mA
		V_R = V_{RRM}, T_j = 25 ºC	MAX	5		µA
V_{TM}	On-state Voltage	at I_T = 8 Amp, tp = 380 µs, T_j = 25 ºC	MAX	1.8		V
V_{GT}	Gate Trigger Voltage	V_D = 12 V_{DC}, R_L = 140Ω, T_j = 25 ºC	MAX	0.8		V
I_H	Holding Current	I_T = 50 mA, R_{GK} = 1KΩ, T_j = 25 ºC	MAX	5		mA
I_L	Latching Current	I_G = 1 mA, R_{GK} = 1KΩ, T_j = 25 ºC	MIN	6		mA
dv / dt	Critical Rate of Voltage Rise	V_D = 0.67 x V_{DRM}, R_{GK} = 1KΩ, T_j = 110 ºC	MIN	15	10	V/µs
di / dt	Critical Rate of Current Rise	I_G = 2 x I_{GT} Tr ≤ 100 ns, f = 60 Hz, T_j = 125 ºC	MIN	50		A/µs
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC			7.5		ºC/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient			100		ºC/W

PART NUMBER INFORMATION

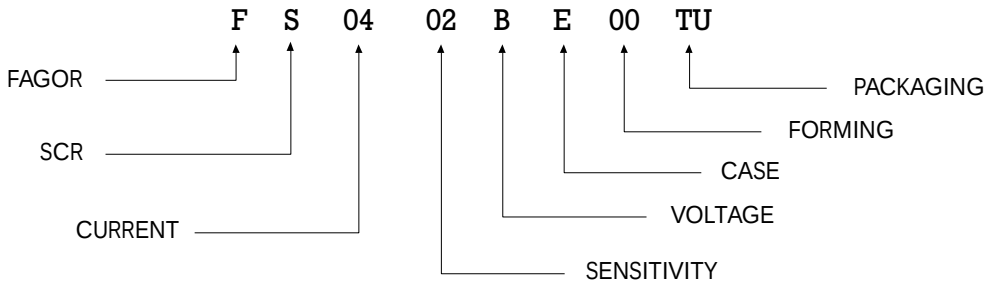


Fig. 1: Maximum average power disipation versus average on-state current.

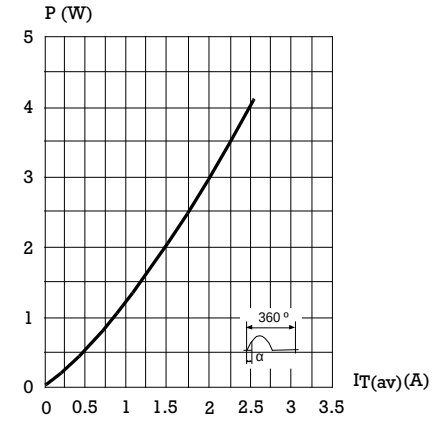


Fig. 2: Average and D.C. on-state current versus case temperature.

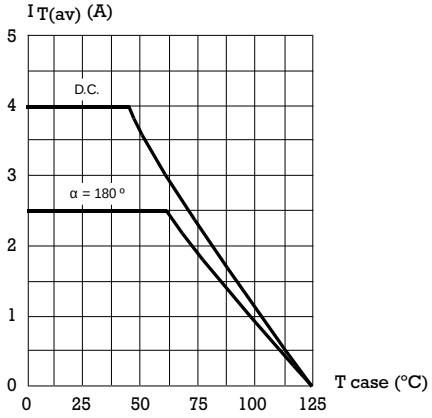


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

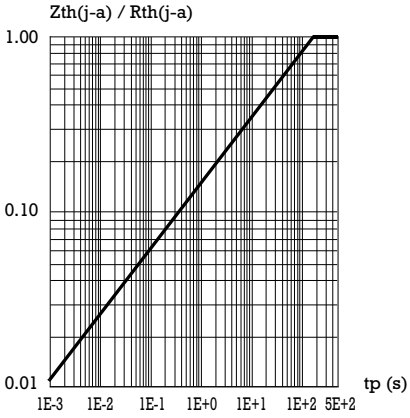


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

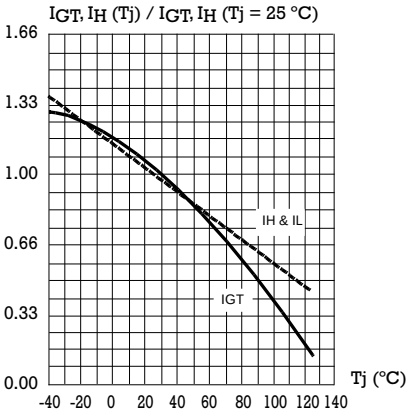


Fig. 5: Non repetitive surge peak on-state current versus number of cycles.

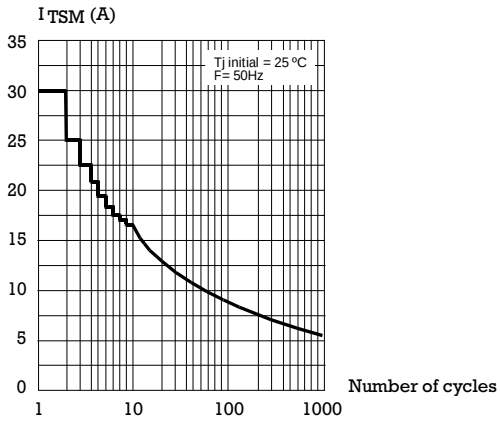


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp ≤ 10 ms, and corresponding value of I^2t.

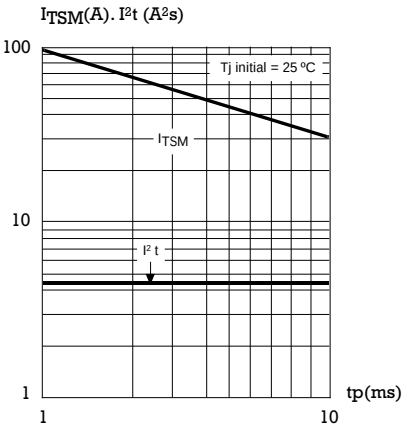
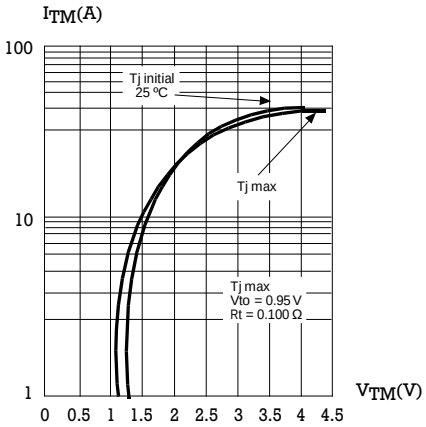
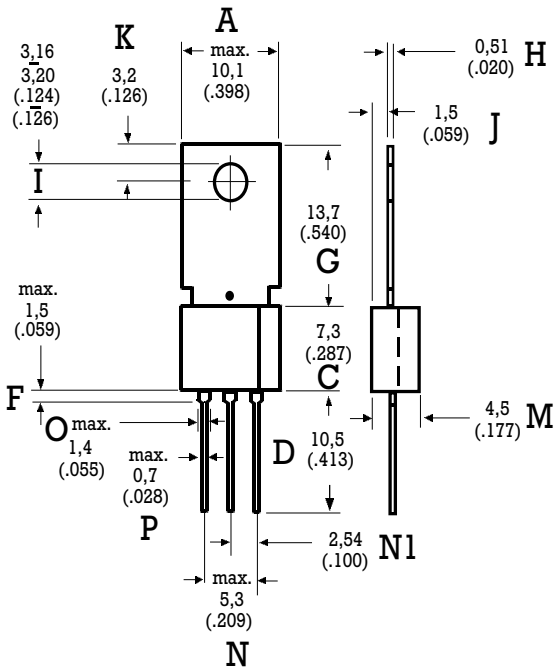


Fig. 7: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA TO 202-1 TO 202-3

TO 202-1



TO 202-3