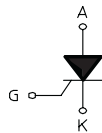
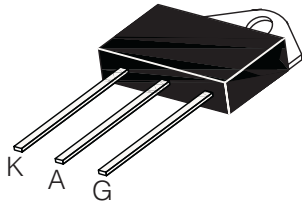


INSULATED STANDARD SCR

INSULATED TO3P



On-State Current

50 Amp

Gate Trigger Current

≤ 80 mA

Off-State Voltage

600 V ÷ 1200 V

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

These parts are intended for general purpose AC switching applications with highly inductive loads. The FS...P series provides an isolated tab (rated at 2500 Vrms).

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (full sine wave)	All Conduction Angle, $T_c = 75\text{ }^\circ\text{C}$	50	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t_p = 8.3\text{ ms}$)	610	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t_p = 10\text{ ms}$)	580	A
I^2t	Fusing Current	$t_p = 10\text{ ms}$, Half Cycle	1680	A ² s
I_{GM}	Peak Gate Current	20 μs max. $T_j = 125\text{ }^\circ\text{C}$	8	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125\text{ }^\circ\text{C}$	1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$ $f = 60\text{ Hz}$, $T_j = 125\text{ }^\circ\text{C}$	50	A/ μs
T_j	Operating Temperature		(-40 +125)	$^\circ\text{C}$
T_{stg}	Storage Temperature		(-40 +150)	$^\circ\text{C}$

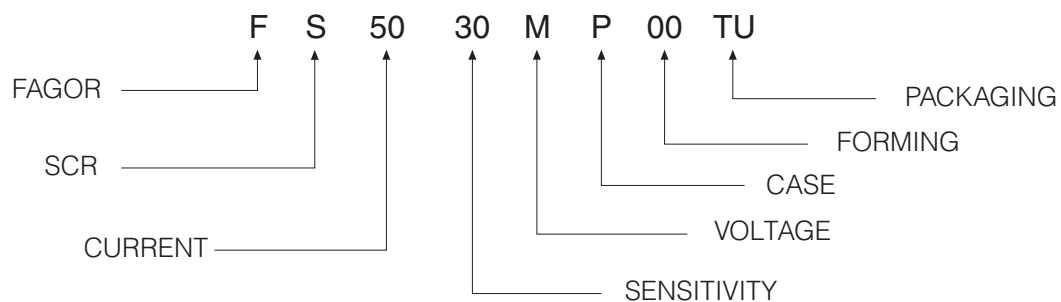
SYMBOL	PARAMETER	VOLTAGE			Unit
		M	N	Q	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	600	800	1200	V

INSULATED STANDARD SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY		
				30	Unit	
I_{GT}	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	MAX	80	mA	
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	$V_D = V_{DRM}, R_L = 3.3 K\Omega, T_j = 125^\circ C$	MIN	0.2	V	
I_H	Holding Current	$I_T = 500 \text{ mA}, \text{Gate open},$	MAX	150	mA	
I_L	Latching Current	$I_G = 1.2 \times I_{GT}, T_j = 25^\circ C$	MAX	200	mA	
dV/dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{Gate open}$ $T_j = 125^\circ C$	MIN	1000	V/ μ s	
V_{TM}	On-state Voltage	$I_{TM} = 100 \text{ Amp}, t_p = 380 \mu\text{s}, T_j = 25^\circ C$	MAX	1.9	V	
$V_{t(0)}$	Threshold Voltage	$T_j = 125^\circ C$	MAX	1	V	
r_d	Dynamic resistance	$T_j = 125^\circ C$	MAX	8.5	m Ω	
I_{DRM}/I_{RRM}	Off-State Leakage Current	$V_{DRM} = V_{RRM}$	$T_j = 125^\circ C$	MAX	5	mA
			$T_j = 25^\circ C$	MAX	10	μ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case D.C.	D.C.		0.9	$^\circ C/W$	

PART NUMBER INFORMATION



INSULATED STANDARD SCR

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

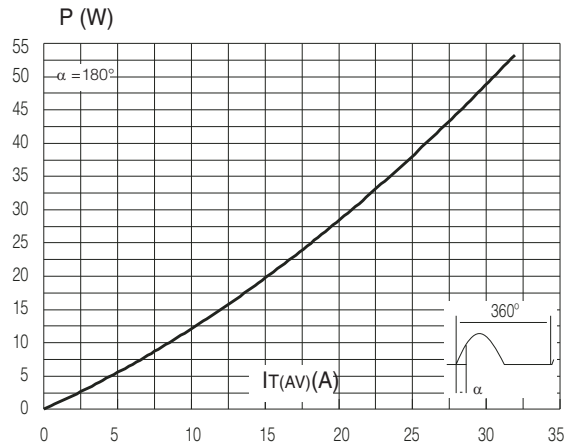


Fig. 3: Relative variation of thermal impedance versus pulse duration

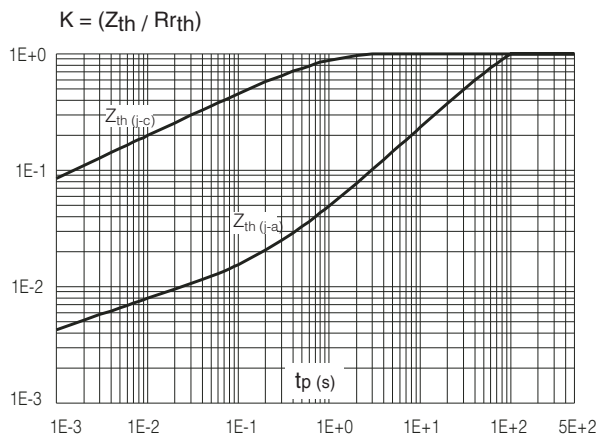


Fig. 5: Surge peak on-state current versus number of cycles

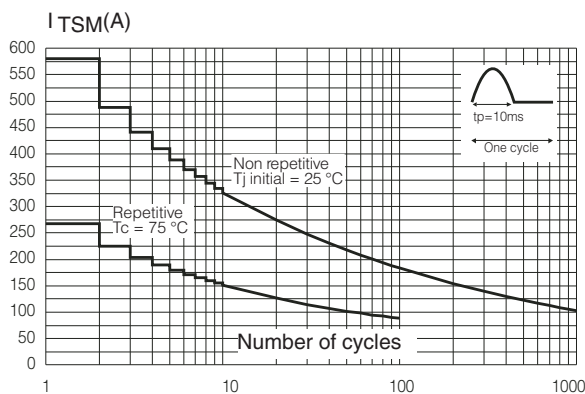


Fig. 2: Average and D.C. on-state current versus case temperature

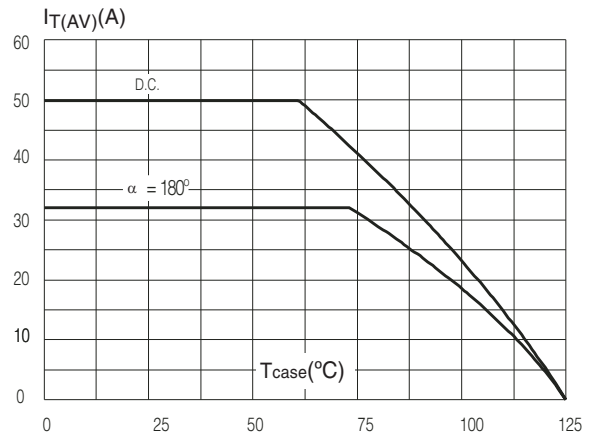


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature

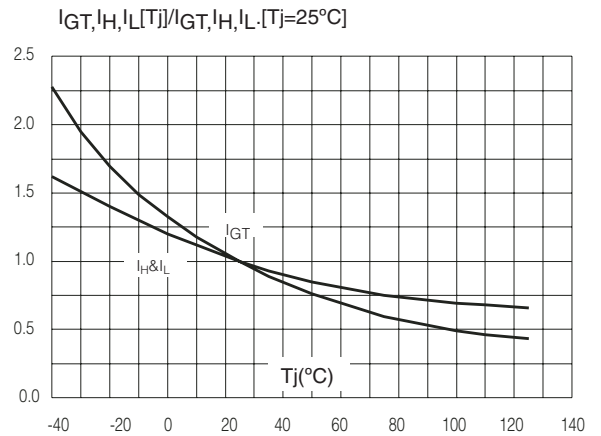
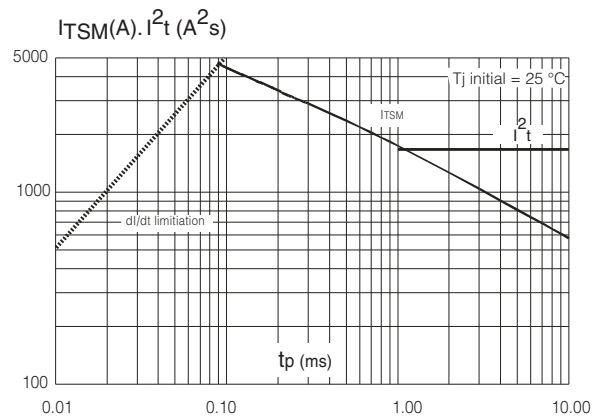
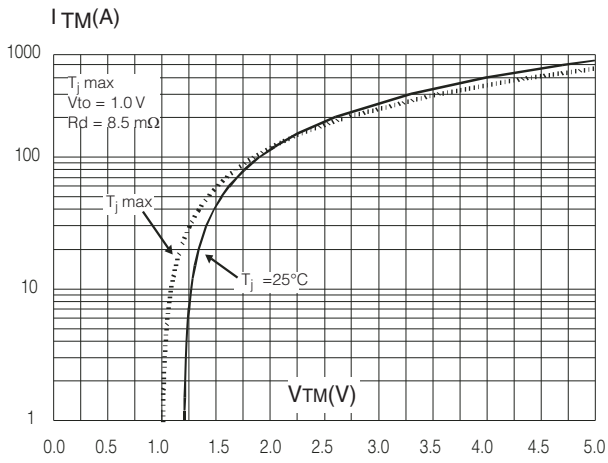


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms, and corresponding values of I^2t



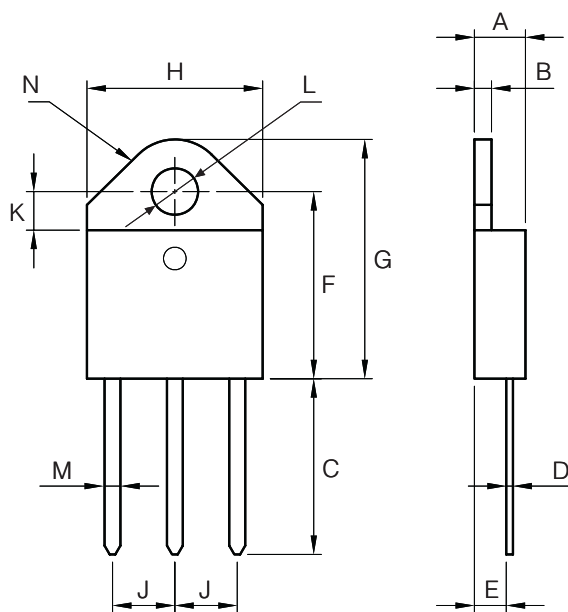
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Fig. 7: On-state characteristics (maximum values)



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PACKAGE MECHANICAL DATA: INSULATED TO3P



DIMENSIONS (mm)

	A	B	C	D	E	F	G	H	J	K	L	M	N
MAX	4.6	1.55	15.6	0.7	2.9	16.5	21.1	15.5	5.65	3.65	4.17	1.40	
TYP													4.60
MIN	4.4	1.45	14.35	0.5	2.7	15.8	20.4	15.1	5.4	3.4	4.08	1.20	

Mounting Torque

1 N.m

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