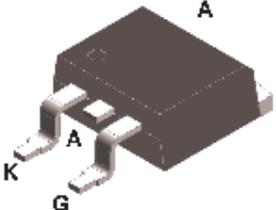
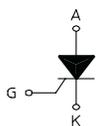


**STANDARD SCR**

<p><b>D<sup>2</sup>PAK</b></p>  	<p><b>On-State Current</b> 16 Amp</p> <p><b>Gate Trigger Current</b> 2 mA to 25 mA</p> <p><b>Off-State Voltage</b> 200 V ÷ 800 V</p>
<p>These series of <b>Silicon Controlled Rectifier</b> use a high performance PNP technology.</p> <p>These parts are intended for general purpose applications where high gate sensitivity is required.</p>	

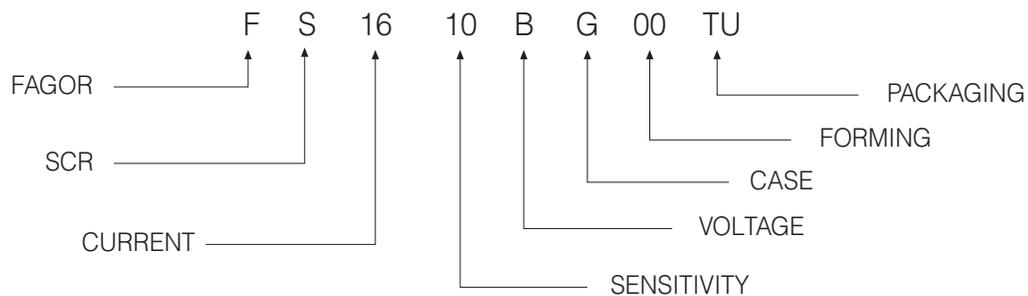
**Absolute Maximum Ratings, according to IEC publication No. 134**

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110\text{ °C}$	16	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180\text{ °}$ , $T_c = 110\text{ °C}$	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	$t_p = 10\text{ms}$ , Half Cycle	180	A <sup>2</sup> s
$I_{GM}$	Peak Gate Current	20 $\mu\text{s}$ max.	4	A
$P_{GM}$	Peak Gate Dissipation	20 $\mu\text{s}$ 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	M	S	N	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	700	800	V

**STANDARD SCR**
**Electrical Characteristics**

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY		Uni
$I_{GT}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$	MIN MAX	10 2 25	m A
$V_{GT}$	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$	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	40	mA
$I_L$	Latching Current	$I_G = 1.2 I_{GT}$	MAX	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	500	V/ $\mu$ 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/ $\mu$ s
$V_{TM}$	On-state Voltage	at $I_T = 32 \text{ Amp}, tp = 380 \mu\text{s}, T_j = 25^\circ C$	MAX	1.6	V
$V_{t(o)}$	Threshold Voltage	$T_j = 125^\circ C$	MAX	0.80	V
$r_d$	Dynamic resistance	$T_j = 125^\circ C$	MAX	25	$m\Omega$
$I_{DRM} / I_{RRM}$	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 $\mu$ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC	for AC 360° conduction angle		1.1	$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Amb for DC	$S = 1 \text{ cm}^2$		45	$^\circ C/W$

**PART NUMBER INFORMATION**


## STANDARD SCR

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

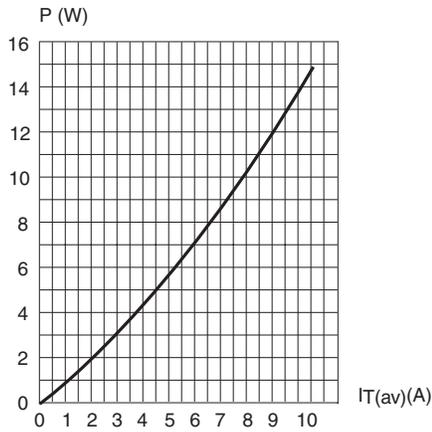


Fig. 2: Average and D.C. on-state current versus case temperature.

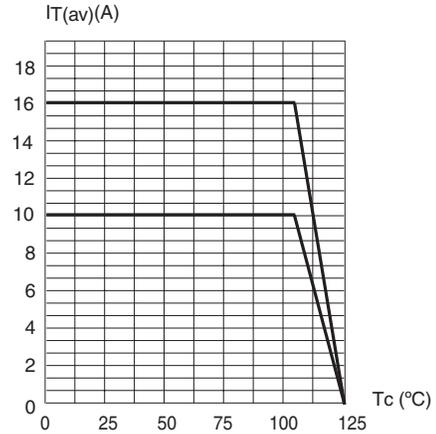


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration.

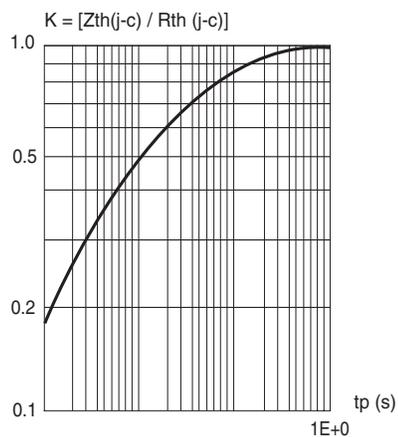


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature.

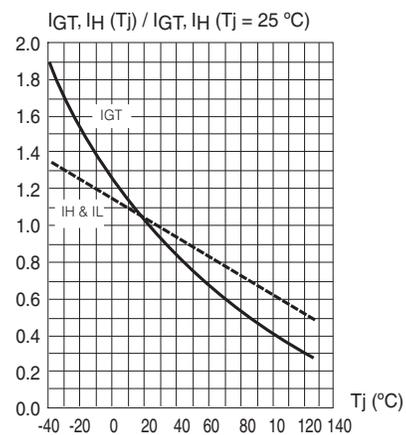


Fig. 5: Non repetitive surge peak on-state current versus number of cycles.

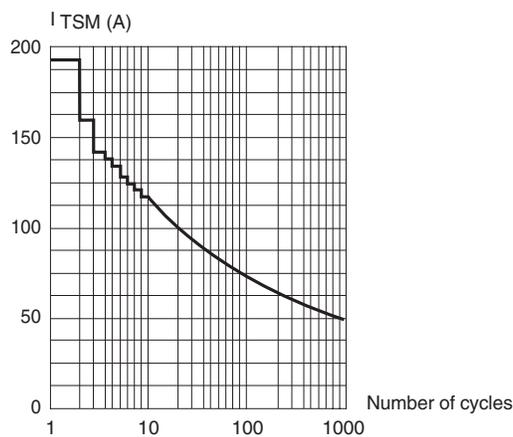
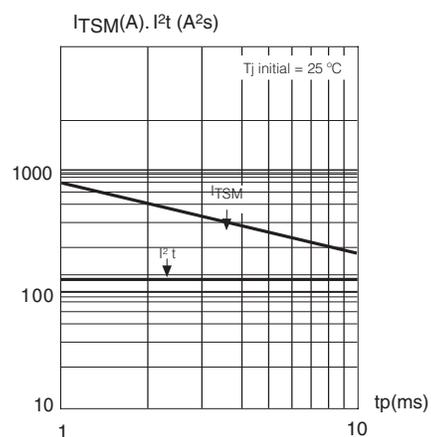


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10$  ms, and corresponding value of  $I^2t$ .



**STANDARD SCR**

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

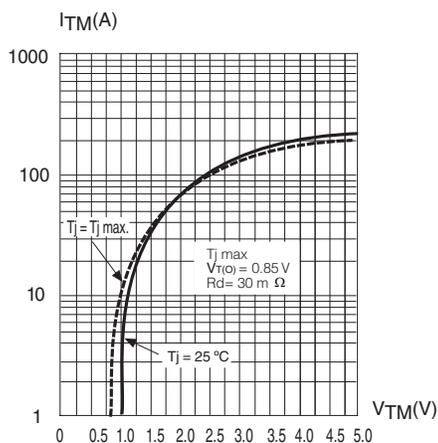


Fig. 8: D<sup>2</sup>PAK RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35 $\mu\text{m}$ ), full cycle.

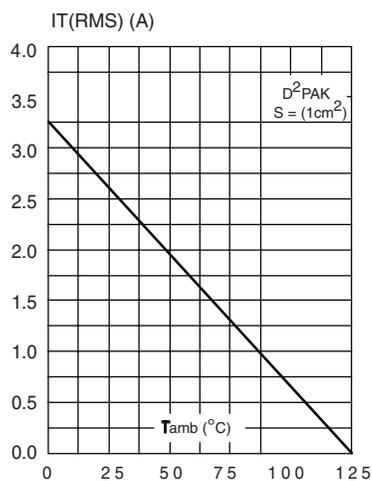
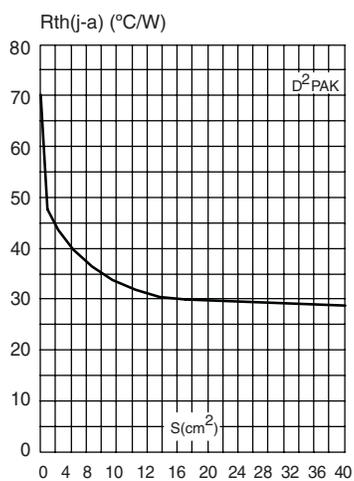
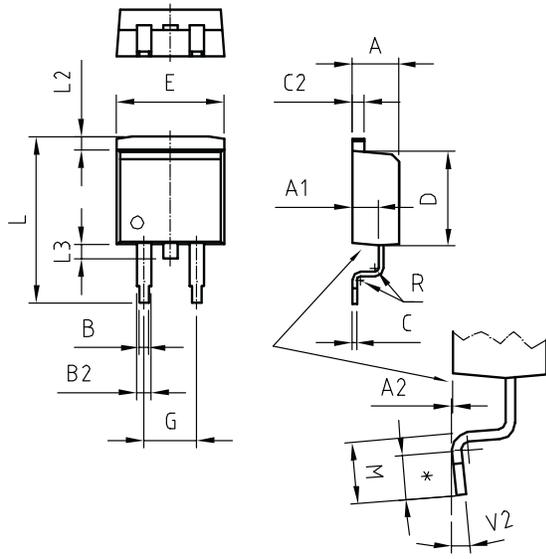


Fig. 9: D<sup>2</sup>PAK Thermal resistance junction to ambient versus copper surface under tab (printed circuit board FRA, copper thickness: 35 $\mu\text{m}$ ).

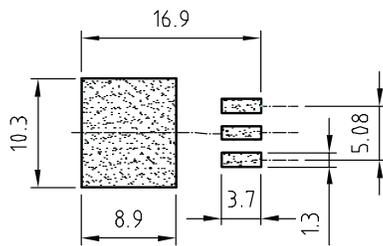


**STANDARD SCR**

**PACKAGE MECHANICAL DATA** **D<sup>2</sup>PAK**



\* FLAT ZONE NO LESS THAN 2mm



REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	4.40	4.45	4.60
A1	2.49	2.50	2.69
A2	0.03	0.10	0.23
B	0.70	0.90	0.93
B2	1.14	1.03	1.70
C	0.45	0.45	0.60
C2	1.23	1.23	1.36
D	8.95	9.00	9.35
E	10.00	10.25	10.40
G	4.88	5.15	5.28
L	15.00	15.40	15.85
L2	1.27	1.27	1.40
L3	1.40	1.55	1.75
M	2.40	3.00	3.20
R	0.40 typ.		
V2	0°		8°

NOTE: LIMITING VALUES AND LIFE SUPPORT APPLICATIONS (SEE WEB PAGE).