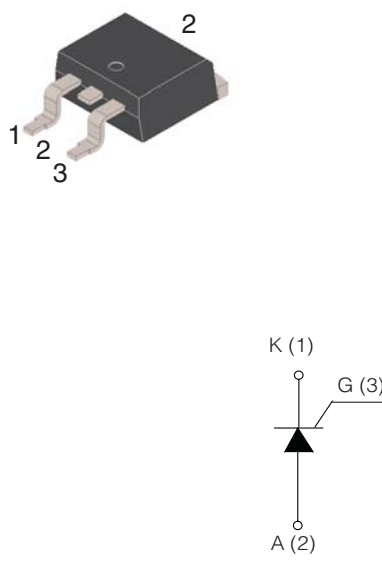



STANDARD SCR

TO-252AA (DPAK) 	On-State Current 8 Amp	Gate Trigger Current 0.5 mA to 15 mA	
	Off-State Voltage 400 V ÷ 800V		
	FEATURES <ul style="list-style-type: none"> • Glass/passivated die junctions • Medium current SCR • Low thermal resistance • High surge current capability • Low forward voltage drop • Solder dip 260°C, 10s • Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC • Meets MSL level 3, per J-STD-020, LF maximum peak of 260° C 		 RoHS COMPLIANT
	MECHANICAL DATA <ul style="list-style-type: none"> • Case: TO-252AA (DPAK). Epoxy meets UL 94V-0 flammability rating. • Polarity: As marked on the body. • Terminals: Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test. 		
TYPICAL APPLICATIONS Thanks to its triggering levels, the FS08xxxD SCR series is suitable to fit all modes of control, found in applications such as overvoltage crowbar protection, motor control circuits in power tools and kitchen aids, inrush current limiting circuits, capacitive discharge ignition and voltage regulation circuits.			

Maximun Ratings and Electrical Characteristics at 25°C

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 110\text{ °C}$	8	A
$I_{T(AV)}$	Average On-state Current	180° Conduction Angle, $T_c = 110\text{ °C}$	5	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	$t_p = 10\text{ms}$, Half Cycle	24.5	A ² s
I_{GM}	Peak Gate Current	20 μs max.	4	A
P_{GM}	Peak Gate Dissipation	20 μs max.	5	W
$P_{G(AV)}$	Gate Dissipation	20 ms 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

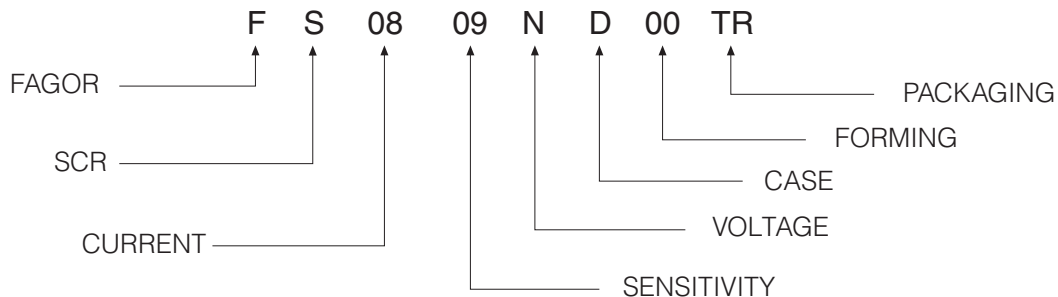
SYMBOL	PARAMETER	VOLTAGE			Unit
		D	M	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	400	600	800	V

STANDARD SCR

Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY		Unit
				08	09	
I _{GT}	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	MIN	0.5	2	mA
			MAX	5	15	
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	MAX	1.3		V
V _{GD}	Gate Non Trigger Voltage	V _D = V _{DRM} , R _L = 3.3kΩ, T _j = 125 °C	MIN	0.2		V
I _H	Holding Current	I _T = 100 mA,	MAX	25	40	mA
I _L	Latching Current	I _G = 1.2 I _{GT}	MAX	30	50	mA
dV/dt	Critical Rate of Voltage Rise	V _D = 0.67 x V _{DRM} , Gate Open, T _j = 125 °C	MIN	50	150	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
V _{TM}	On-state Voltage	at I _T = 16 Amp, tp = 380 μs, T _j = 25 °C	MAX	1.6		V
V _{t(o)}	Threshold Voltage	T _j = 125 °C	MAX	0.85		V
r _d	Dynamic resistance	T _j = 125 °C	MAX	46		mΩ
I _{DRM} /I _{RRM}	Off-State Leakage Current	V _D = V _{DRM} , V _R = V _{RRM} , T _j = 125 °C, T _j = 25 °C	MAX	2		mA
			MAX	5		
R _{th(j-c)}	Thermal Resistance Junction-Amb for DC			1.3		°C/W
R _{th(j-a)}	Thermal Resistance Junction-Amb for DC	S = 0.5 cm ²		70		°C/W

Part Number Information

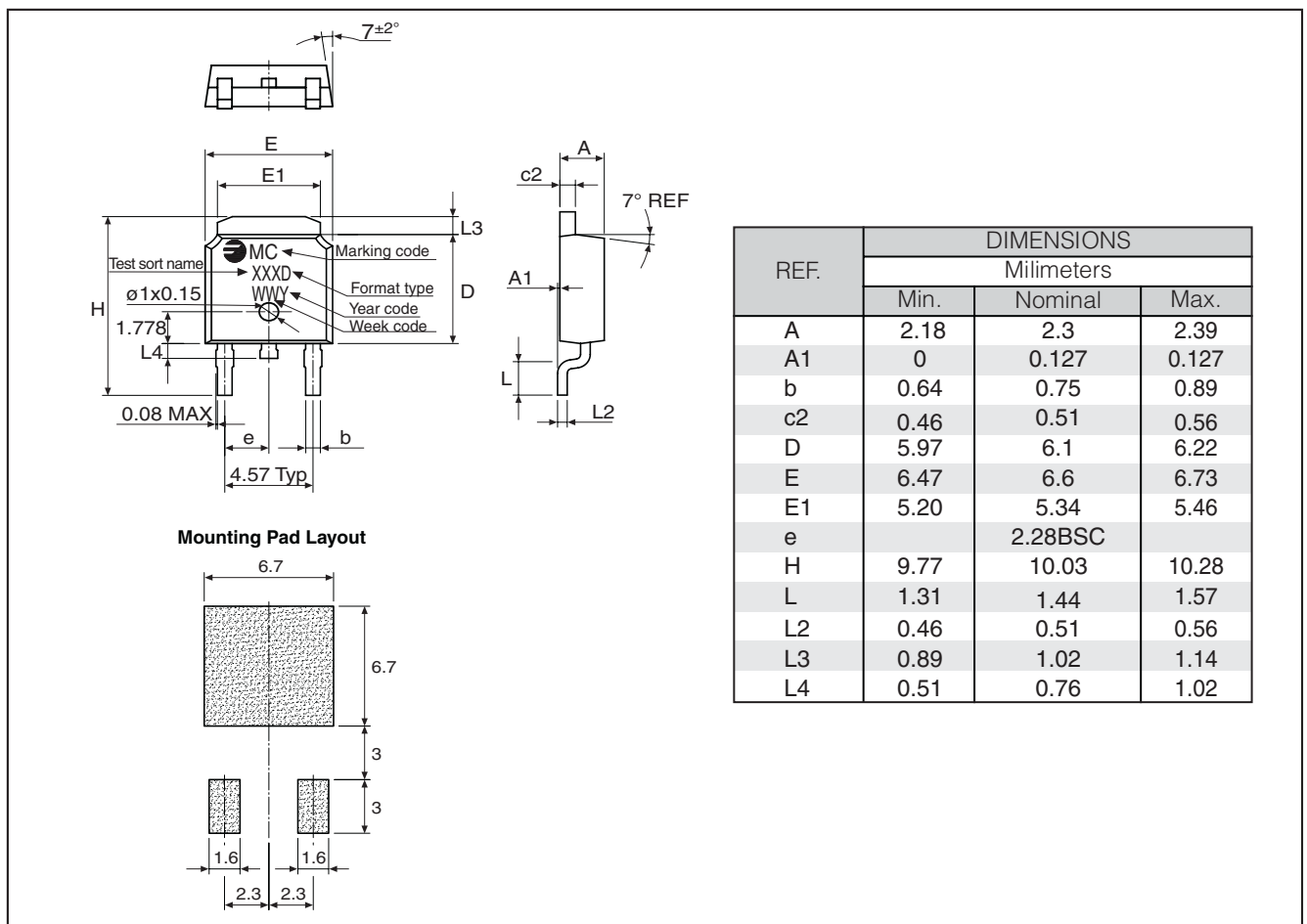


STANDARD SCR

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FS0809ND 00TR	TR	13" diameter tape and reel	2,500	0.30

Package Outline Dimensions: (mm) TO-252AA (DPAK)



STANDARD SCR

Ratings and Characteristics (Ta 25 °C unless otherwise noted)

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

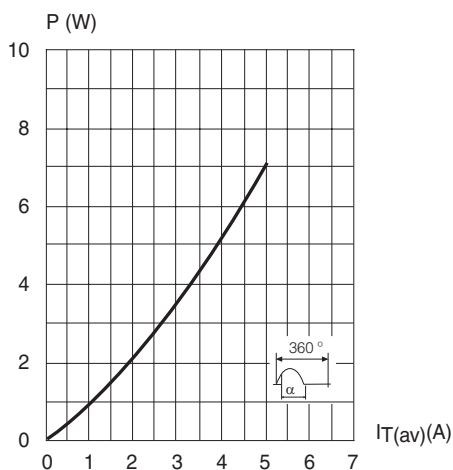


Fig. 2: Average and D.C. on-state current versus case temperature.

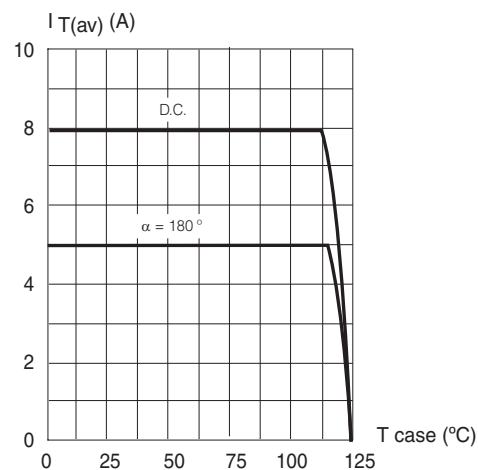


Fig. 3: Average and DC on-state current versus ambient temperature.

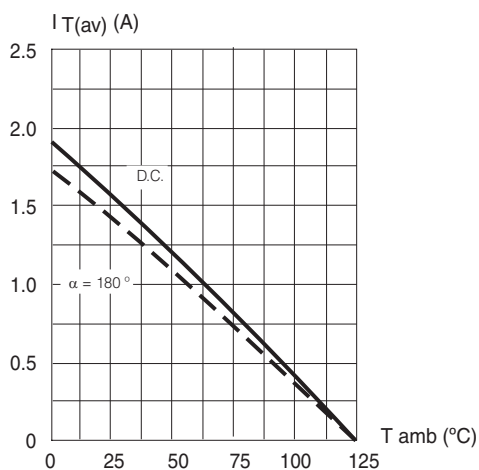
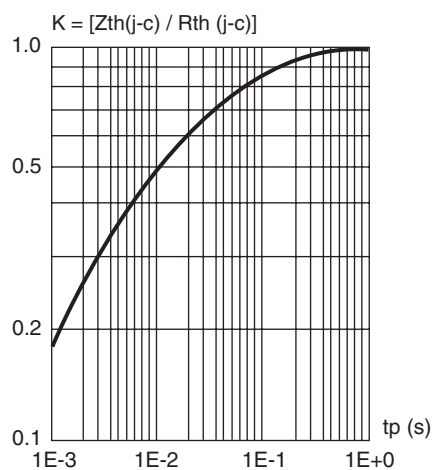


Fig. 4: Relative variation of thermal impedance junction to case versus pulse duration.



STANDARD SCR

Fig. 5: Relative variation of gate trigger current, holding and latching current versus junction temperature.

$I_{GT}, I_H(T_j) / I_{GT}, I_H(T_j = 25\text{ }^\circ\text{C})$

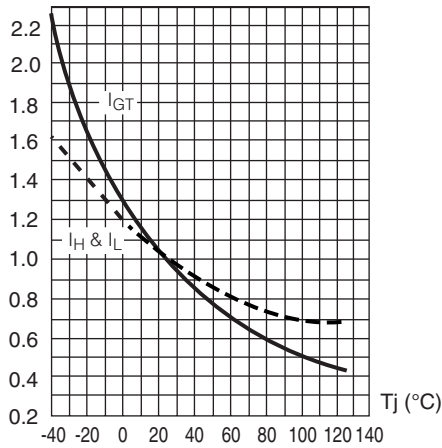


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.

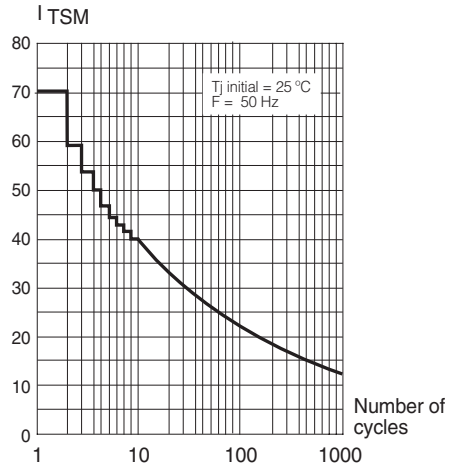


Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10\text{ ms}$, and corresponding value of I^2t .

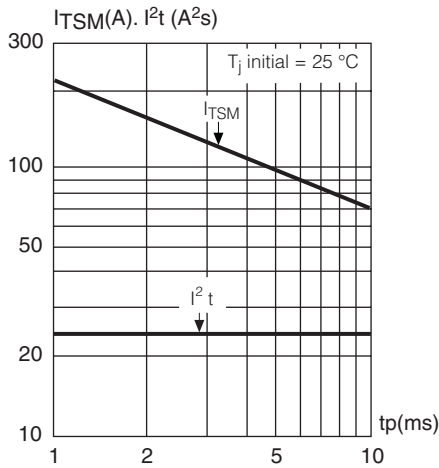
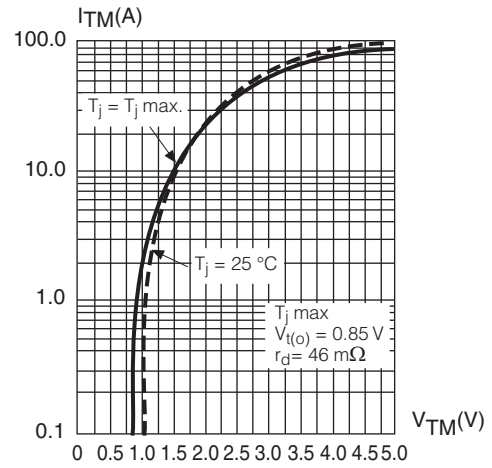


Fig. 8: On-state characteristics (maximum values).



STANDARD SCR

Revision History

Date	Revision	Description of Changes
12-Sep-2009	0	Original Data Sheet
23-May-2013	1	200V and 700V eliminated
2-Apr-2014	2	Fig. 3 Included

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