

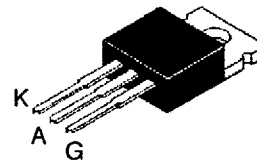
SENSITIVE GATE SCR

FEATURES

- $I_{T(RMS)} = 8A$
- $V_{DRM} = 200V$ to $800V$
- Low $I_{GT} < 200 \mu A$

DESCRIPTION

The S0802xH series of SCRs uses a high performance MESA GLASS PNP technology. These parts are intended for general purpose applications where low gate sensitivity is required.



TO220
non-insulated
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)	$T_c = 95^\circ C$	8	A
$I_{T(AV)}$	Mean on-state current (180° conduction angle)	$T_c = 95^\circ C$	5	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25^\circ C$)	$t_p = 8.3 \text{ ms}$	73	A
		$t_p = 10 \text{ ms}$	70	
I^2_t	I^2_t Value for fusing	$t_p = 10 \text{ ms}$	24	A^2s
di/dt	Critical rate of rise of on-state current $I_G = 10 \text{ mA}$ $di_G/dt = 0.1 \text{ A}/\mu s$		100	$A/\mu s$
T_{stg} T_j	Storage and operating junction temperature range		- 40, + 150 - 40, + 125	$^\circ C$
T_l	Maximum lead temperature for soldering during 10s at 4.5mm from case		260	$^\circ C$

Symbol	Parameter	Voltage				Unit
		B	D	M	N	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage $T_j = 125^\circ C$ $R_{GK} = 1K\Omega$	200	400	600	800	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	60	°C/W
Rth(j-c)	Junction to case for DC	4	°C/W

GATE CHARACTERISTICS (maximum values)

P_{G(AV)} = 0.5 W P_{GM} = 5 W (tp = 20 μs) I_{GM} = 2 A (tp = 20 μs)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Sensitivity	Unit
				02	
I_{GT}	$V_D=12V$ (DC) $R_L=140\Omega$	$T_j=25^\circ C$	MAX	200	μA
V_{GT}	$V_D=12V$ (DC) $R_L=140\Omega$	$T_j=25^\circ C$	MAX	1.5	V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3k\Omega$ $R_{GK}=1K\Omega$	$T_j=125^\circ C$	MIM	0.1	V
V_{RGM}	$I_{RG}=10\mu A$	$T_j=25^\circ C$	MIN	8	V
tgδ	$V_D=V_{DRM}$ $I_{TM}=3 \times I_{T(AV)}$ $di_G/dt=0.1A/\mu s$ $I_G=10mA$	$T_j=25^\circ C$	TYP	0.5	μs
I_H	$I_T=50mA$ $R_{GK}=1K\Omega$	$T_j=25^\circ C$	MAX	10	mA
I_L	$I_G=1mA$ $R_{GK}=1K\Omega$	$T_j=25^\circ C$	MAX	20	mA
V_{TM}	$I_{TM}=16A$ $t_p=380\mu s$	$T_j=25^\circ C$	MAX	1.6	V
I_{DRM} I_{RRM}	$V_D=V_{DRM}$ $R_{GK}=1K\Omega$ $V_R=V_{RRM}$	$T_j=25^\circ C$	MAX	5	μA
		$T_j=110^\circ C$	MAX	500	μA
dV/dt	$V_D=67\%V_{DRM}$ $R_{GK}=1K\Omega$	$T_j=110^\circ C$	TYP	10	V/ μs
tq	$I_{TM}=3 \times I_{T(AV)}$ $V_R=35V$ $di/dt=10A/\mu s$ $t_p=100\mu s$ $dV/dt=2V/\mu s$ $V_D=67\%V_{DRM}$ $R_{GK}=1K\Omega$	$T_j=110^\circ C$	MAX	100	μs

ORDERING INFORMATION

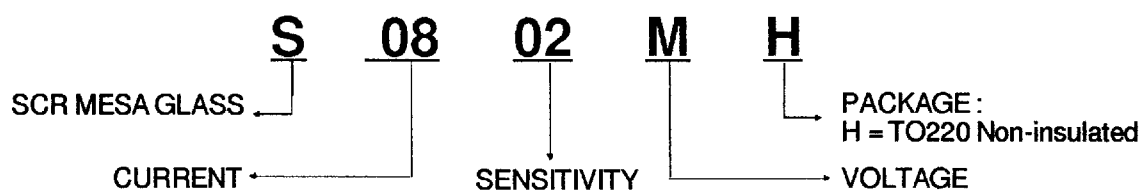


Fig.1 : Maximum average power dissipation versus average on-state current.

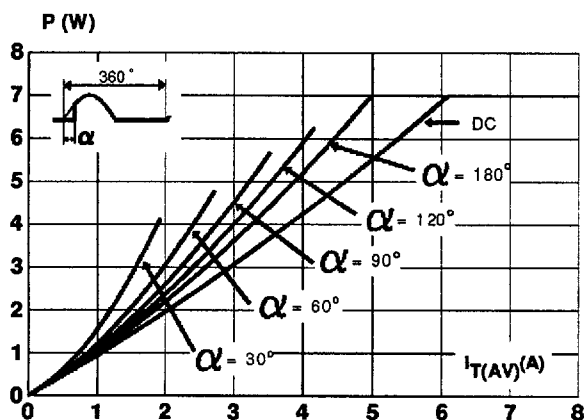


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

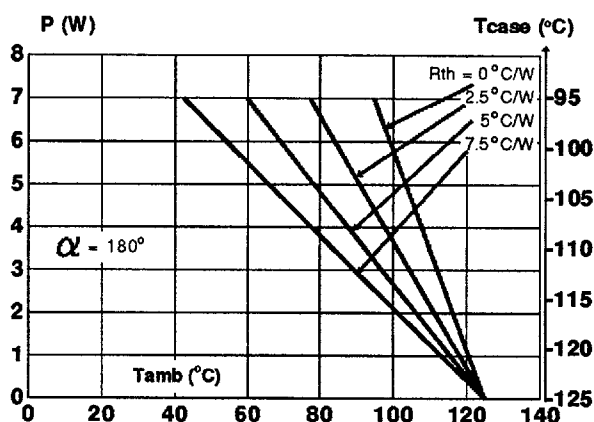


Fig.3 : Average on-state current versus case temperature.

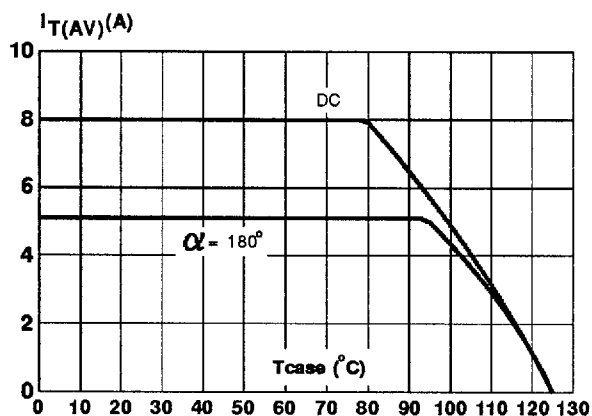


Fig.4 : Relative variation of thermal impedance versus pulse duration.

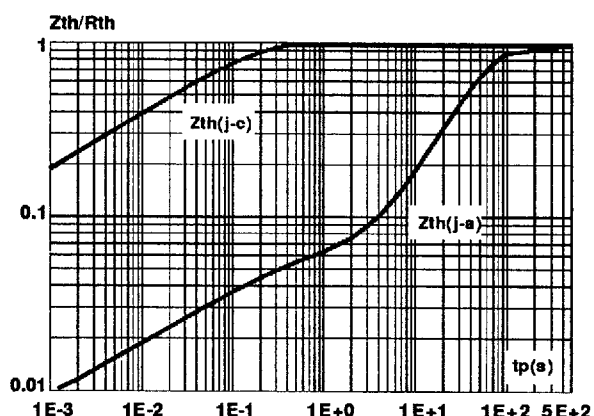


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

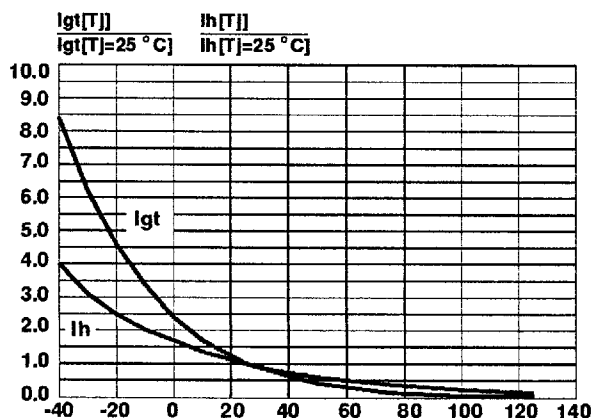


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

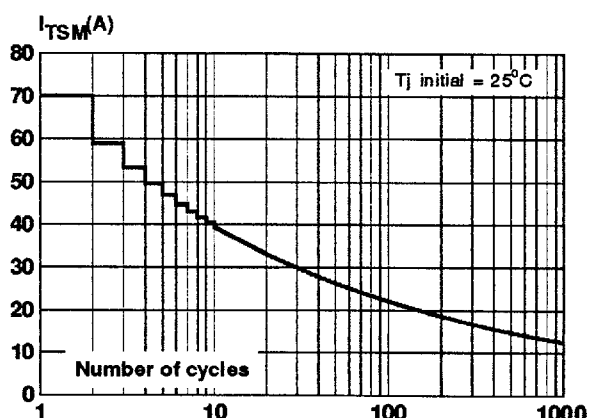


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t_p \leq 10\text{ms}$, and corresponding value of I^2t .

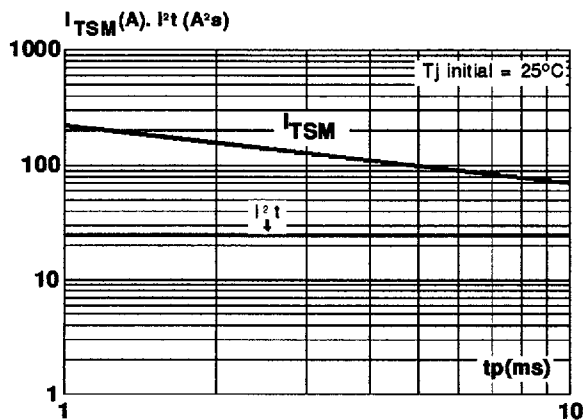
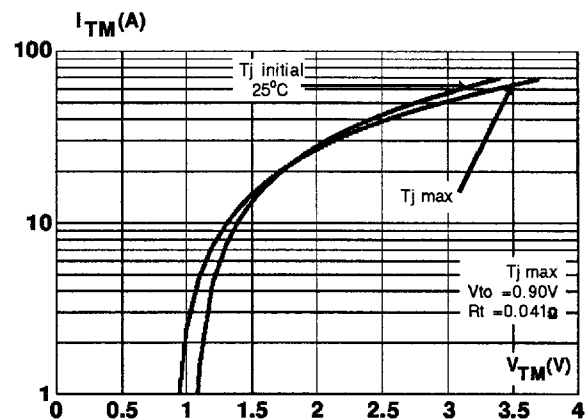


Fig.8 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA
TO220 Non-insulated (Plastic)

REF.	DIMENSIONS					
	Millimetres			Inches		
	Typ.	Min.	Max.	Typ.	Min.	Max.
A			10.3			0.406
B		6.3	6.5	0.248	0.256	
C			9.1			0.358
D		12.7			0.500	
F			4.2			0.165
G			3.0			0.118
H		4.5	4.7		0.177	0.185
I		3.53	3.66		0.139	0.144
J		1.2	1.3		0.047	0.051
L			0.9			0.035
M	2.7			0.106		
N			5.3			0.209
N1	2.54			0.100		
O		1.2	1.4		0.047	0.055
P			1.15			0.045

Marking : Type number
 Weight : 1.8 g

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