

0.8A SCRs

Sensitive Gate / Silicon Controlled Rectifiers

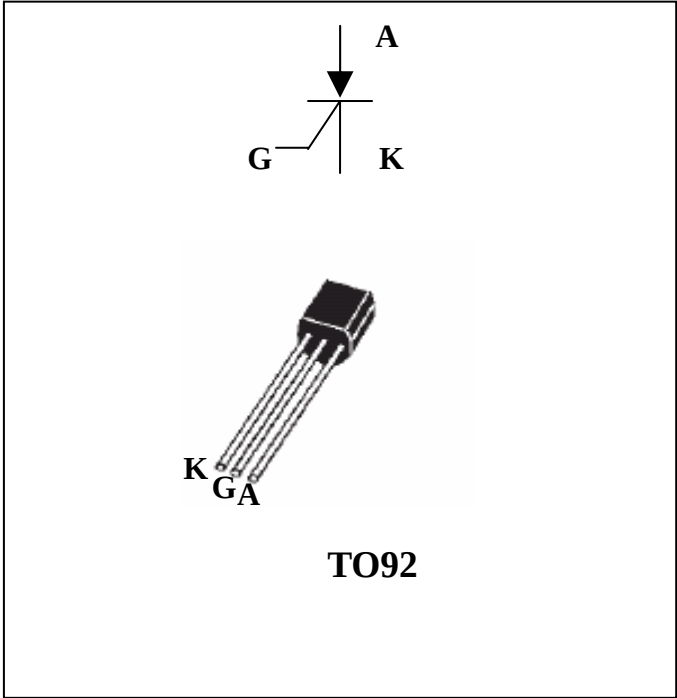
Main features

Symbol	Value	Unit
$I_{T(RMS)}$	0.8A	A
V_{DRM}/V_{RRM}	950	V
$I_{GT(Q1)}$	200	uA

DESCRIPTION

These devices are intened to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

Weight : 0.22 gram



Absolute maximum ratings

Symbol	Parameter			Value	Unit
I _{T(RMS)}	RMS on-state current (180° conduction angle)			0.8	A
I _{TSM}	Non repetitive surge on-state current (1/2 Cycle,Sine Wave , Tj initial=25℃)	F = 50Hz	t = 10ms	8	A
		F = 60Hz	t = 8.3ms	9	
I ² t	I ² t Value for fusing	t _p = 10ms		0.24	A ² s
dl/dt	Critical rate of rise of on-state current I _G = 10mA di _G = 0.1A/us			30	A/us
I _{GM}	Peak gate current			1	A
P _{G(AV)}	Average gate power dissipation			0.1	W
T _{stg} T _j	Storage junction temperature range Operating junction temperature range			-40 to +150 -40 to +110	℃

Electrical characteristics ($T_j = 25^\circ\text{C}$, unless otherwise specified)

Symbol	Test conditions		MCR100-8A	Unit
$V_{\text{DRM}}, V_{\text{RRM}}$			950	V
$I_{\text{GT}}(1)$	$V_D = 7\text{V}$ $R_L = 100\Omega$	MAX.	200	μA
V_{GT}		MAX.	0.8	V
$I_H(2)$	$V_D = 7\text{V}$, $I_{\text{GT}} = 0.5\text{mA}$ $R_{\text{GK}} = 1\text{k}\Omega$	MAX.	5	mA
I_L	$V_D = 7\text{V}$, $I_{\text{GT}} = 0.5\text{mA}$ $R_{\text{GK}} = 1\text{k}\Omega$	MAX.	6	mA
$dV/dt(2)$	$V_D = 67\%$ V_{DRM} $R_{\text{GK}} = 1\text{k}\Omega$ $T_j = 110^\circ\text{C}$	MIN.	50	V/us

Static characteristics

Symbol	Test conditions				Value	Unit
V _T (2)	I _{TM} = 1.2A	tp = 380 us	Tj = 25°C	MAX.	1.55	V
I _{DRM} I _{RRM}	V _{DRM} =V _{RRM}		Tj = 25°C	MAX.	10	uA
			Tj = 110°C		0.2	mA

Thermal resistance

Symbol	Parameter	Value	Unit
$R_{\text{th(j-l)}}$	Junction to lead for DC	80	$^\circ\text{C}/\text{W}$
$R_{\text{th(j-a)}}$	Junction to ambient	150	$^\circ\text{C}/\text{W}$



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

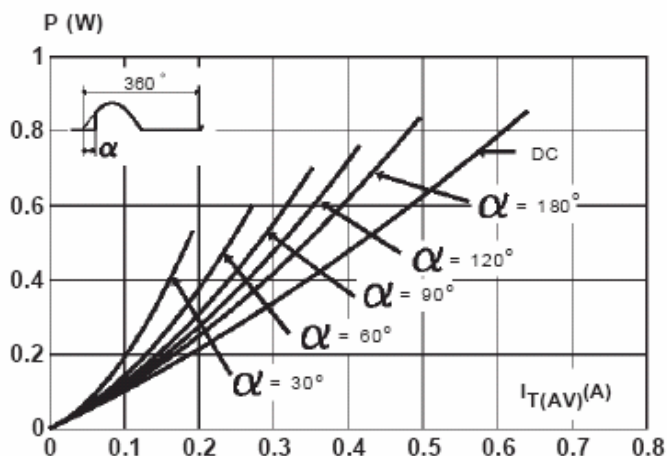


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{tab}).

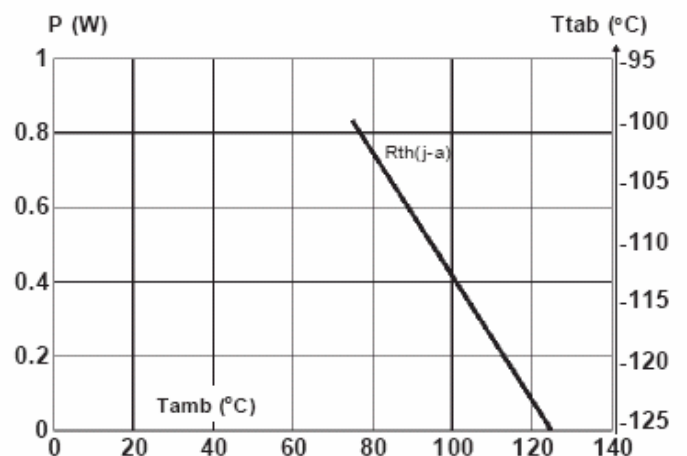


Fig.3 : Average on-state current versus tab temperature.

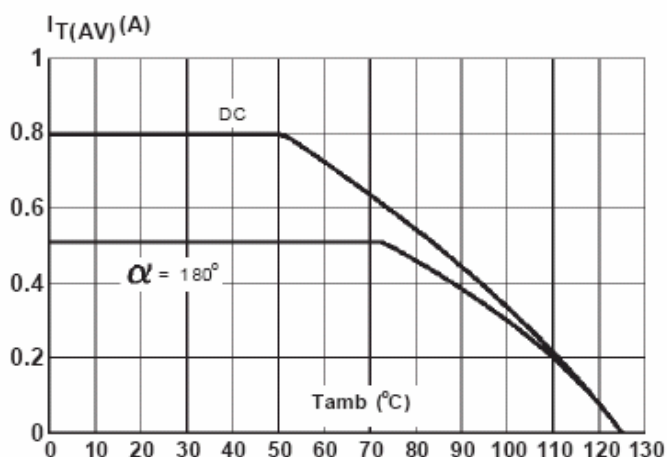


Fig.4 : Relative variation of thermal impedance junction to ambient versus pulse duration.

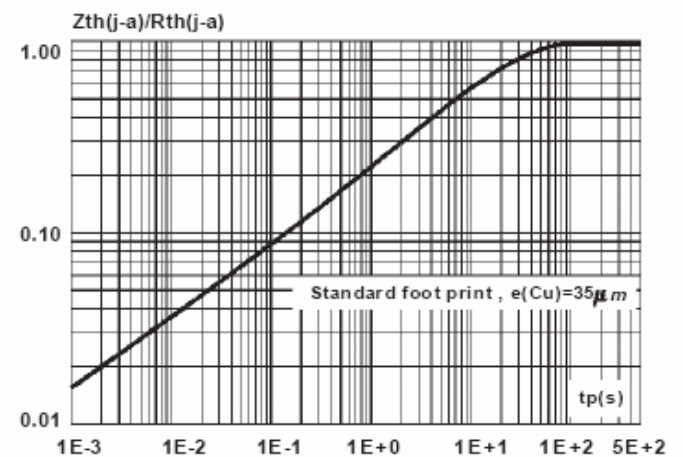


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

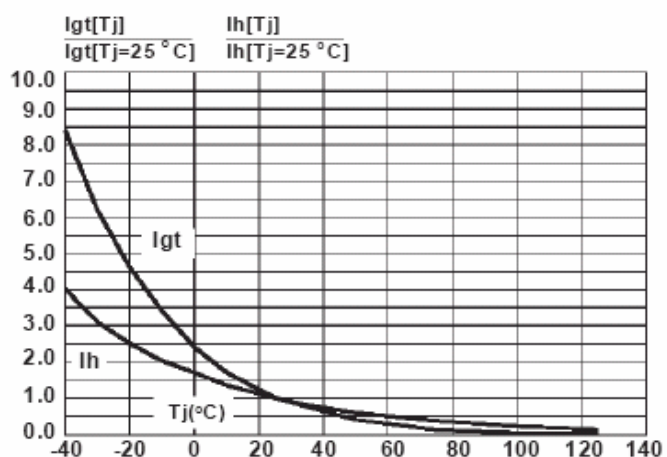


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

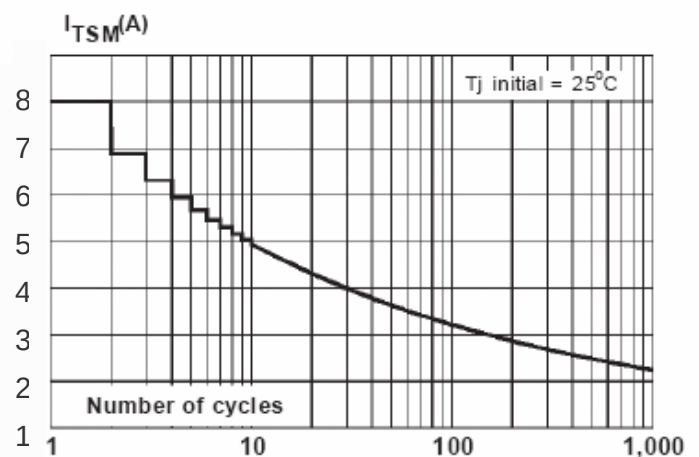


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : t_p @ 10ms, and corresponding value of I^2t .

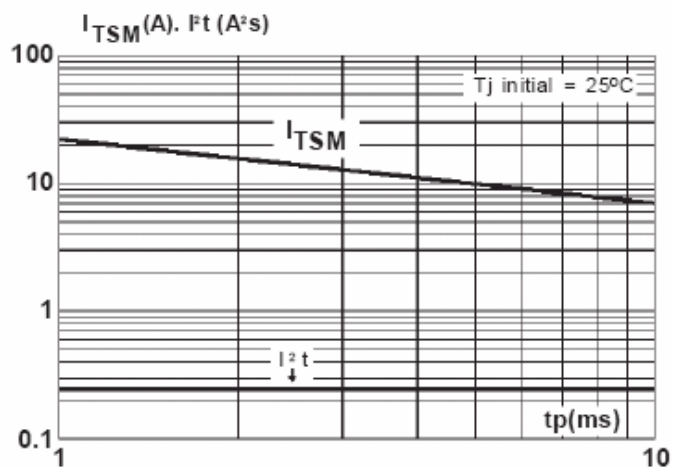


Fig.8 : On-state characteristics (maximum values).

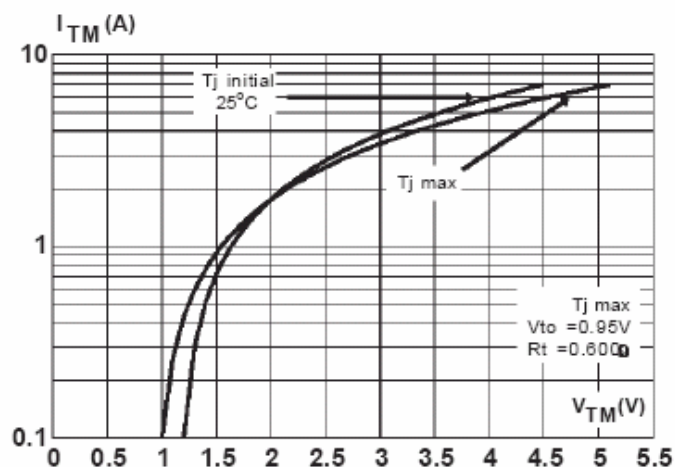


Fig.9 : Relative variation of holding current versus gate-cathode resistance (typical values).

