

**MCR100-8 1A Sensitive SCR**

Rev.A.2.1

The MCR100-8 SCR provides high dV/dt rate with strong resistance to electromagnetic interface. It is especially recommended for use on residual current circuit breaker, straight hair, igniter etc. Package TO-92 is RoHS compliant.

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM} / V_{RRM}	800	V
I_{GT}	≤ 200	μA

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-125	
Repetitive peak off-state voltage ($T_j=25^\circ C$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ C$)	V_{RRM}	800	V
Average on-state current ($T_c \leq 54^\circ C$)	$I_{T(AV)}$	0.6	A
RMS on-state current ($T_c \leq 54^\circ C$)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current ($t_p=10ms$, $T_j=25^\circ C$)	I_{TSM}	12	A
Non repetitive surge peak on-state current ($t_p=8.3ms$, $T_j=25^\circ C$)		13	
I^2t value for fusing ($t_p=10ms$, $T_j=25^\circ C$)	I^2t	0.72	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)			

Peak gate power	P_{GM}	2	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	1	kV

NOTE 1: Operating junction temperature T_j is up to 125°C when a resistor $\leq 1\text{k}\Omega$ is connected between Gate and Cathode. Without this resistor, the T_j is up to 110°C only.

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	-	40	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ\text{C}$	0.2	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	5	mA
I_H	$I_T=0.05\text{A}$	-	-	4	mA
dV/dt	$V_D=600\text{V}$ $T_j=125^\circ\text{C}$ $R_{GK}=1\text{k}\Omega$	200	-	-	$\text{V}/\mu\text{s}$
	$V_D=600\text{V}$ $T_j=125^\circ\text{C}$ $R_{GK}=220\Omega$	500	-	-	
t_{on}	$I_G=10\text{mA}$ $I_A=20\text{mA}$ $I_R=2\text{mA}$	-	2	-	μs
t_{off}	$T_j=25^\circ\text{C}$	-	50	-	μs

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_T=2\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.4	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.8	V
R_D	Dynamic Resistance	$T_j=125^\circ\text{C}$	0.1	Ω
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	0.2	mA

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	61	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (DC)	130	$^{\circ}\text{C}/\text{W}$

MCR100-8

FIG.1: Maximum power dissipation versus RMS on-state current

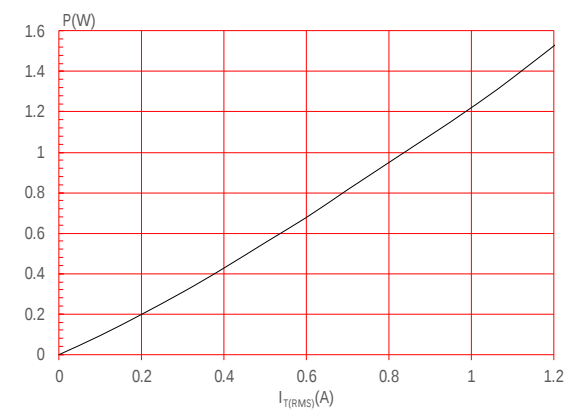


FIG.3: Surge peak on-state current versus number of cycles

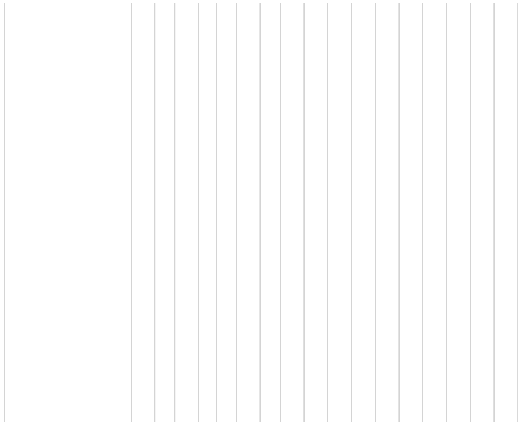


FIG.2: RMS on-state current versus case temperature

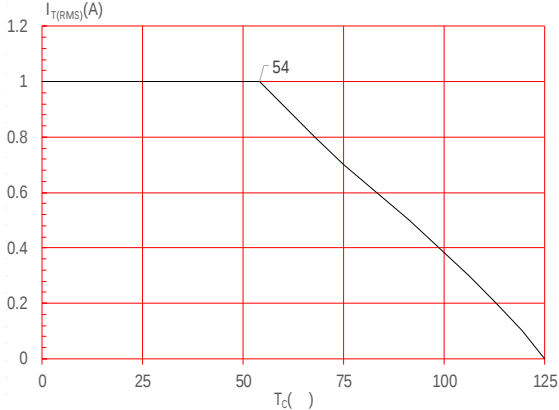
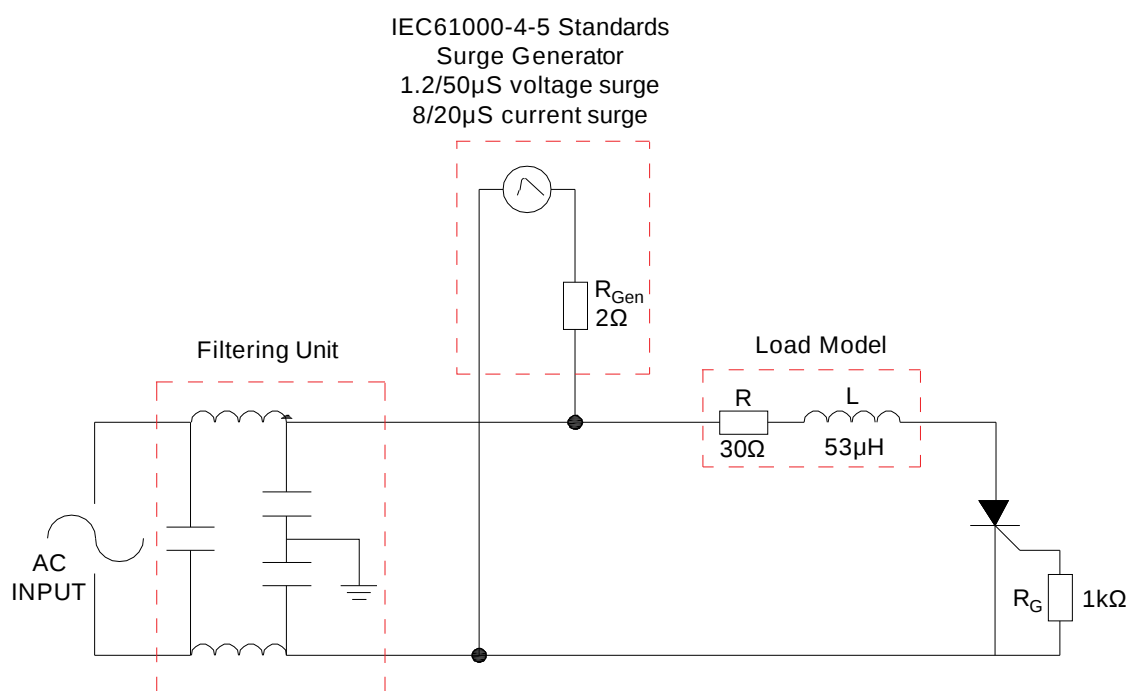


FIG.4: On-state characteristics

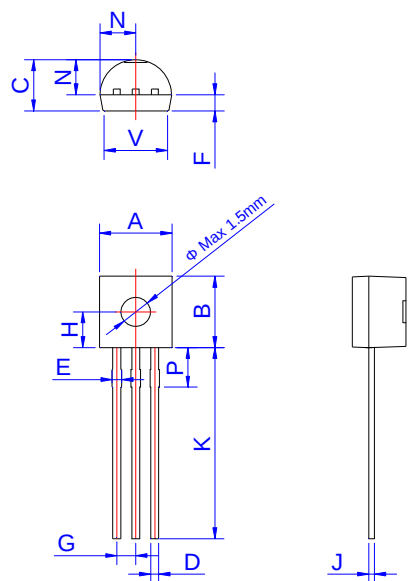
FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(> A)	Package	Base qty. (pcs)	Delivery mode
MCR100-8	800	0.200	TO-92	1,000	Bulk Pack
MCR100-8-TR				2,000	Tape & Reel

Document Revision History

Date	Revision	Changes
May.23, 2023	A.1.0	Last update
Mar.28, 2025	A.2.0	Renew PACKAGE MECHANICAL DATA
Sept.28, 2025	A.2.1	Revise PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		
B	4.32		5.33	0.170	318	
C	3.18		4.19	0.0.173		
D	0.407		0.533			
E						
F						
G						
H						
J						
K						
N						
P						
V						

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92	Bulk Pack	1,000	10,000	50,000

Ref.	Dimensions							
	Millimeters			Inches				
	Min.	Typ.	Max.	Min.	Typ.	Max.		
P	12.40	12.70	13.00	0.488	0.500	0.512	Ø	Ø
P0	12.40	12.70	13.00	0.488	0.500	0.512		
P1	3.55	3.85	4.15	0.140	0.152	0.163		
P2	5.95	6.35	6.75	0.233	0.250	0.265		
P	-1.00	0	1.00	-0.039	0	0.039		
F1 F2	2.30	2.50	2.70	0.090	0.098	0.106		
F1-F2	-0.10	0	0.10	-0.004	0	0.004		
W	17.50	18.00	19.00	0.689	0.709	0.748		
W0	5.50	6.00	6.50	0.217	0.236	0.256		
W1	8.50	9.00	9.50	0.335	0.354	0.374		
W2			1.00			0.039		
D0	3.80	4.00	4.20	0.150	0.157	0.165		
H	-1.00	0	1.00	-0.039	0	0.039		
L1	2.50			0.098				
H	18.00	19.00	20.00	0.709	0.748	0.787		

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.