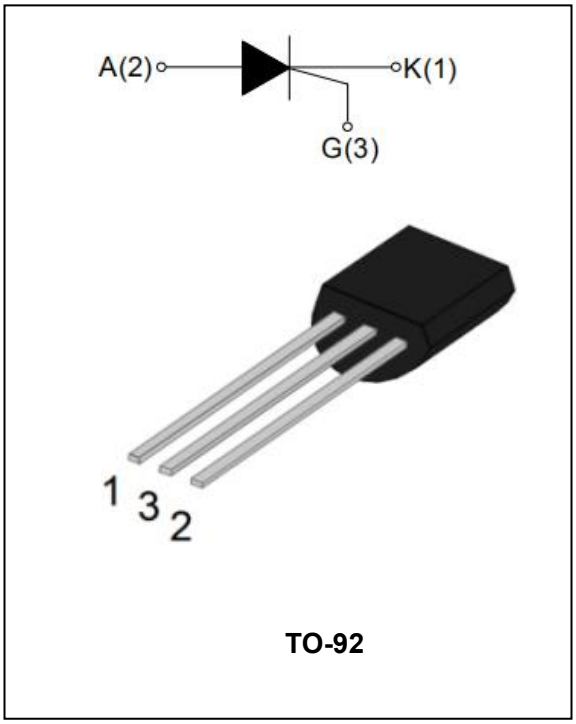
MCR100-8 Series 1A Sensitive SCRs

DESCRIPTION:

The MCR100-8 SCR series provide high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc.



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MAIN FEATURES:

symbol	value	unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	800	V
V_{TM}	≤1.5	V

ABSOLUTE MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40~150	℃
Operating junction temperature range	T_j	-40~110	℃
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	800	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	800	V
RMS on-state current (T_C=80℃)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	10	A
I^2t value for fusing (t_p=10ms)	I^2t	0.5	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT})	dI/dt	50	A/μs
Peak gate current	I_{GM}	0.2	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	0.5	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN	TYPE	MAX	
I_{GT}	V_D=12V, R_L=33Ω	-	20	200	μA
V_{GT}		-	0.5	1.0	V
V_{GD}	V_D=V_{DRM} T_j=110℃ R_L=3.3kΩ	0.2	-	-	V
I_H	I_T=50mA	-	-	2	mA
I_L	I_G=1.2I_{GT}	-	-	3	mA
dV/dt	V_D=0.66×V_{DRM} T_j=110℃ G 极开路 R_{GK}=1KΩ	20	-	-	V/μs

STATIC CHARACTERISTICS

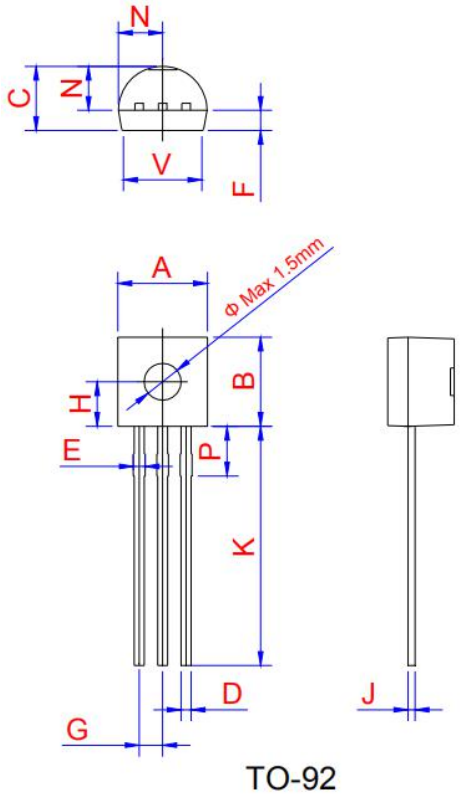
Symbol	Test Condition			Value	Unit
V_{TM}	I_{TM}=2A t_p=380μs	T_j=25℃	MAX	1.5	V
I_{DRM} I_{RRM}	V_{DRM}= V_{RRM} R_{GK}=1KΩ	T_j=25℃	MAX	5	μA
		T_j=110℃		100	μA

THERMAL RESISTANCES

Symbol	Test Condition		Value	Unit
$R_{th(j-c)}$	结到外壳(AC)	TO-92	50	℃/W

ORDERING INFORMATION

MCR	100	– 8
SCR	$I_{T(RMS)}$:1A	V_{DRM}、V_{RRM}: 800V



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Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45	4.6	5.2	0.175	0.181	0.205
B	4.32	4.6	5.33	0.17	0.181	0.21
C	3.18	3.55	4.19	0.125	0.14	0.165
D	0.407		0.533	0.016		0.021
E	0.6		0.8	0.024	0	0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.05	-
H	-	2.3	-	-	0.091	-
J	0.36	0.38	0.5	0.014	0.015	0.02
K	12.7		15	0.5		0.591
N	2.04	2.3	2.66	0.08	0.091	0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169

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

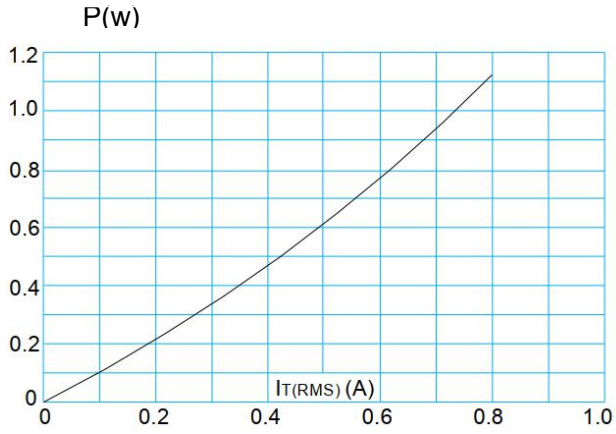

FIG.2: RMS on-state current versus case temperature

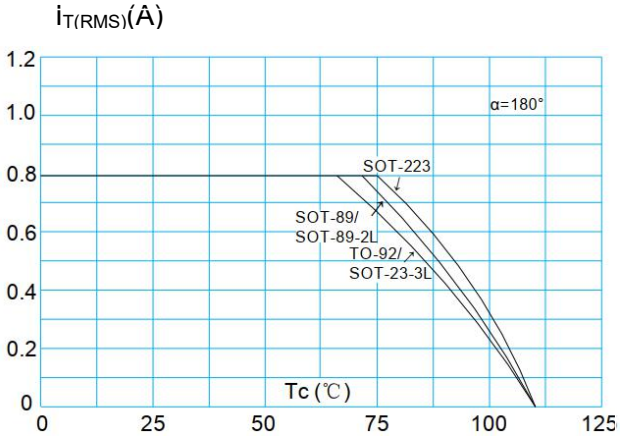

FIG.3: Surge peak on-state current versus number of cycles

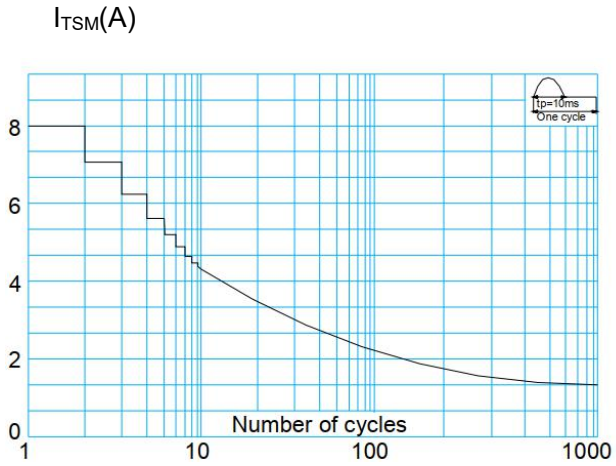

FIG.4: On-state characteristics (maximum values)

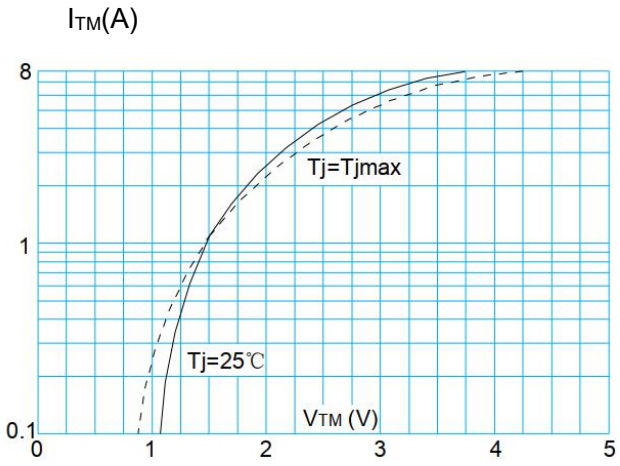

FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 50A/μs)

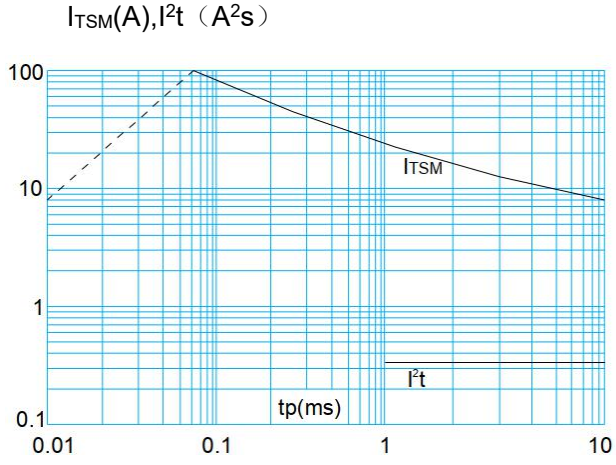

FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature