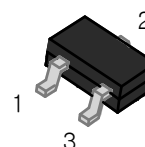


Silicon Planar PNP Thyristor (0.8A SCR)

DESCRIPTION

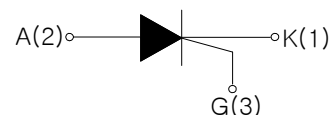
The MCRP8PA-6V SCR provide high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc.



SOT-23

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
I_{GT}	30~80	μA
V_{DRM} / V_{RRM}	600	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-110	$^{\circ}C$
Repetitive peak off-state voltage	V_{DRM}	600	V
Repetitive peak reverse voltage	V_{RRM}	600	V
RMS on-state current ($T_c=65^{\circ}C$)	$I_{T(RMS)}$	0.8	A
Non repetitive surge peak on-state current ($t_p=10ms$)	I_{TSM}	8	A
I^2t value for fusing ($t_p=10ms$)	I^2t	0.32	A^2s
Critical rate of rise of on-state current	di/dt	50	$A/\mu s$
Peak gate current ($t_p=20\mu s, T_j=110^{\circ}C$)	I_{GM}	0.2	A
Peak gate power ($t_p=20\mu s, T_j=110^{\circ}C$)	P_{GM}	0.5	W
Average gate power dissipation($T_j=110^{\circ}C$)	$P_{G(AV)}$	0.1	W



MCRP8PA-6V

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	30	-	80	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	$V_D=V_{DRM} T_j=110^\circ\text{C}$	0.2	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	6	mA
I_H	$I_T=0.05\text{A}$	-	-	5	mA
dV/dt	$V_D=2/3V_{DRM} T_j=110^\circ\text{C} R_{GK}=1\text{K}\Omega$	100	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_T=1.1\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=110^\circ\text{C}$	100	μA

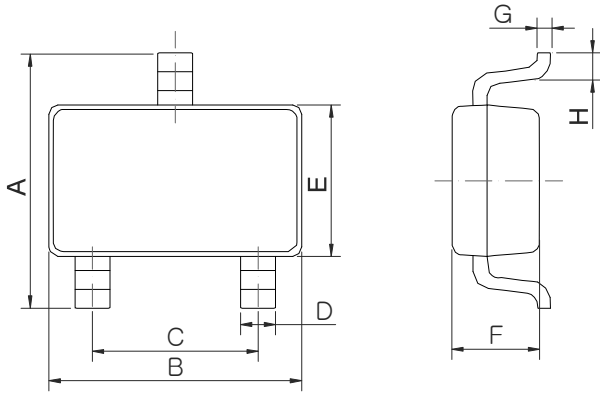
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case	75	$^\circ\text{C/W}$

ORDERING INFORMATION

<p>MCR P8 PA — 6 V</p> <p>SCR $I_{T(RMS)}: 0.8\text{A}$</p> <p>$I_{GT}: 30\sim 80\mu\text{A}$</p> <p>V: SOT-23 6 = $V_{DRM}: 600\text{V}$</p>

PACKAGE MECHANICAL DATA



SOT-23

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.25	2.40	2.55	0.089	0.094	0.100
B	2.82	2.92	3.02	0.111	0.115	0.119
C	1.80	1.90	2.00	0.071	0.075	0.079
D	0.30	0.40	0.50	0.012	0.016	0.020
E	1.20	1.33	1.40	0.047	0.052	0.055
F	0.90	0.96	1.05	0.035	0.038	0.041
G	0.08	0.13	0.15	0.003	0.005	0.006
H	0.30	0.42	0.55	0.012	0.017	0.022

Typical Characteristics

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

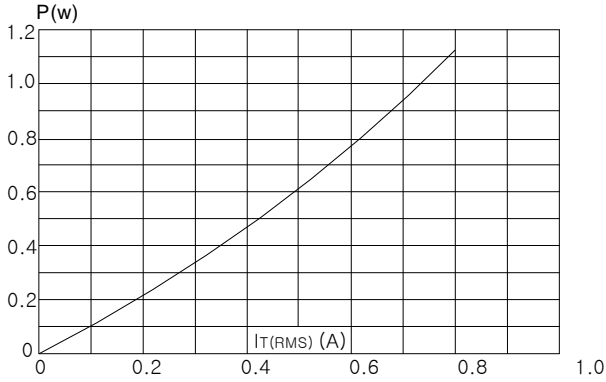


FIG.2: RMS on-state current versus case temperature

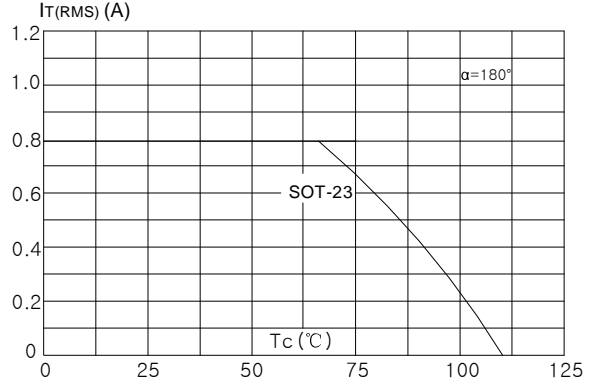


FIG.3: Surge peak on-state current versus number of cycles

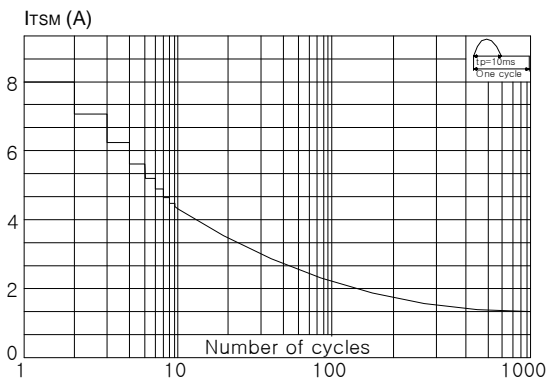


FIG.4: On-state characteristics (maximum values)

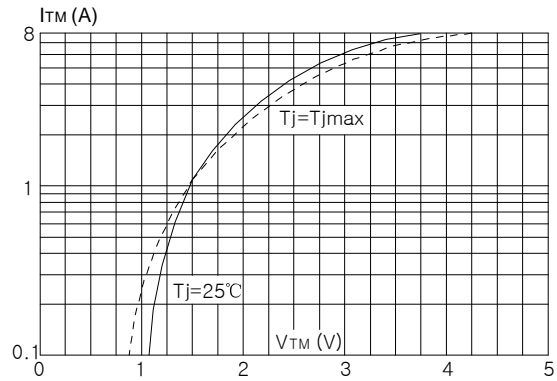


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I_t ($di/dt < 50\text{A/us}$)

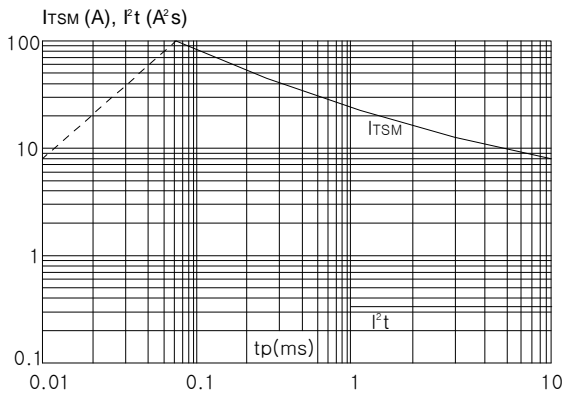


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

