

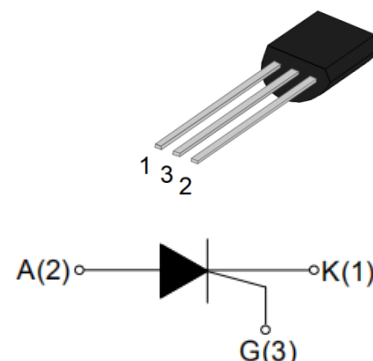


MCR100-6AL

Silicon Controlled Rectifier

Features

- Sensitive Gate Trigger Current
- Blocking Voltage to 400 V
- Glass Passivated Surface for Reliability and Uniformity
- RoHS Compliant & HF
- $I_{T(RMS)}$ to 0.8A of SCR



Mechanical Data

- Case: TO-92

Absolute Maximum Ratings (Tc=25°C Unless otherwise specified)

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40~150	°C
Operating junction temperature range	T_j	-40~125	°C
Repetitive peak off-state voltage (Tj=25°C)	V_{DRM}	400	V
Repetitive peak reverse voltage (Tj=25°C)	V_{RRM}	400	V
RMS on-state current	$I_{T(RMS)}$	0.8	A
Average on-state current (180° conduction angle)	$I_{T(AV)}$	0.5	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	9	A
I^2t value for fusing (tp=10ms)	I^2t	0.41	A ² s
Critical rate of rise of on-state current (IG=2×IGT)	dI/dt	50	A/μs
Peak gate current	I_{GM}	0.5	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Thermal Resistance(between Junction and Case)	$R_{\theta(J-C)}$	60 (Typ.)	°C/W

Electronics Characteristics (Tc=25°C Unless otherwise specified)

Parameter	Symbol	Min	Typ.	Max.	Unit
Gate Trigger Current (Continuous dc)@VD=12V	I _{GT}	10	40	200	μA
Gate Trigger Voltage (Continuous dc) @VD=12V	V _{GT}	-	-	1.0	V
Gate non-trigger voltage@VD=V _{DRM} ,Tj=125°C,R _{GK} =1kΩ	V _{GD}	0.2	-	-	V
Holding Current@IT=50mA	I _H	-	-	5	mA
Latching Current@IG=1.2IGT	I _L	-	-	6	mA
Critical Rate-of-Rise of Off State Voltage@VD=0.66×V _{DRM} , Tj=125°C, Gate Open Circuit,RGK=1KΩ	dV/dt	50	-	-	V/μs
Peak Forward On-State Voltage@ITM=1A,tp=380μs, Tj=25°C	V _{TM}	-	-	1.5	V
Peak Repetitive Forward@V _{DRM} =V _{RRM} ,RGK=1KΩ,Tj=25°C	I _{DRM}	-	-	5	μA
Reverse Blocking Current@V _{DRM} =V _{RRM} ,RGK=1KΩ,Tj=125°C	I _{RRM}	-	-	0.5	mA

Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

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

P(w)

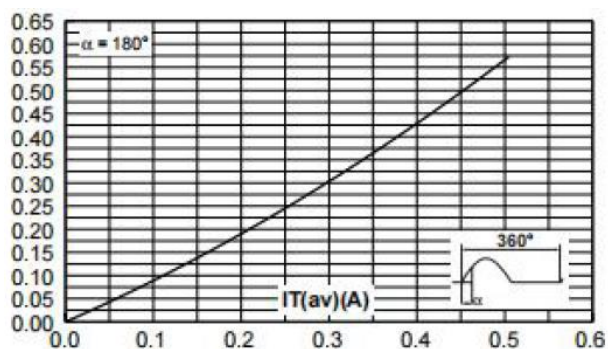


FIG.2: Average and DC on-state current versus case temperature

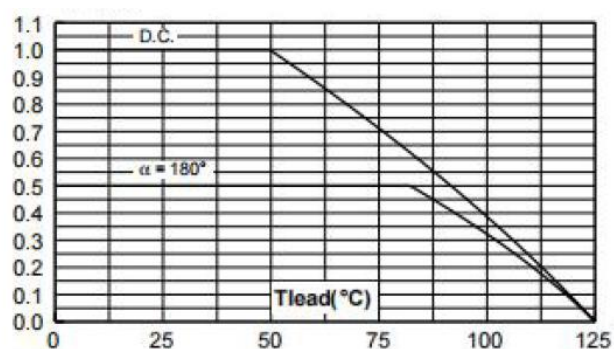
 $I_T(av)(A)$ 

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

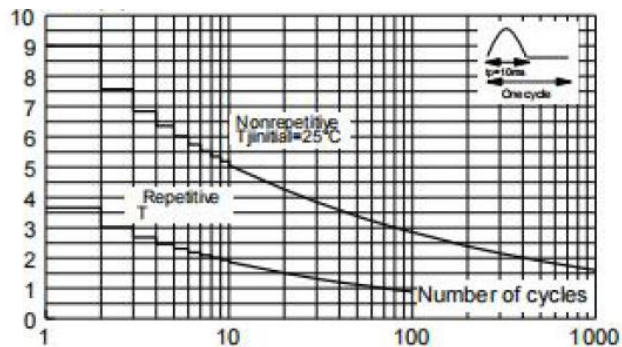
 $I_{TSM}(A)$ 

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

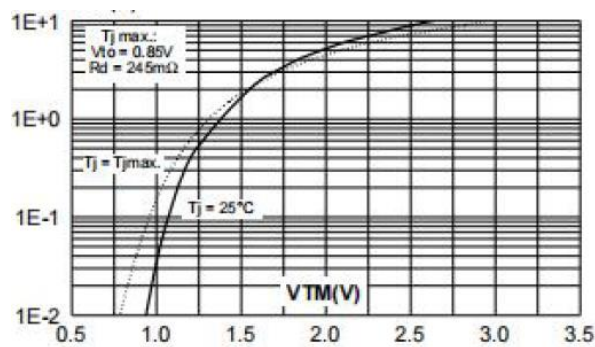
 $I_{TM}(A)$ 

FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of $I^2 t$ ($di/dt < 50A/\mu s$)

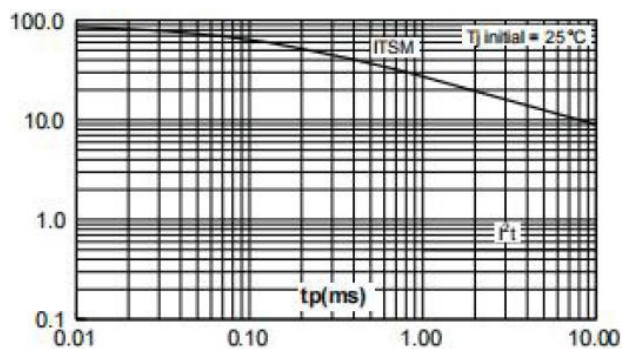
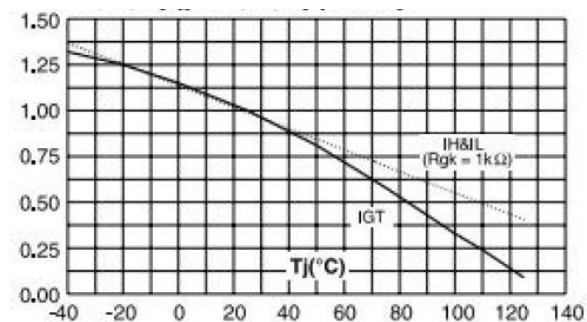
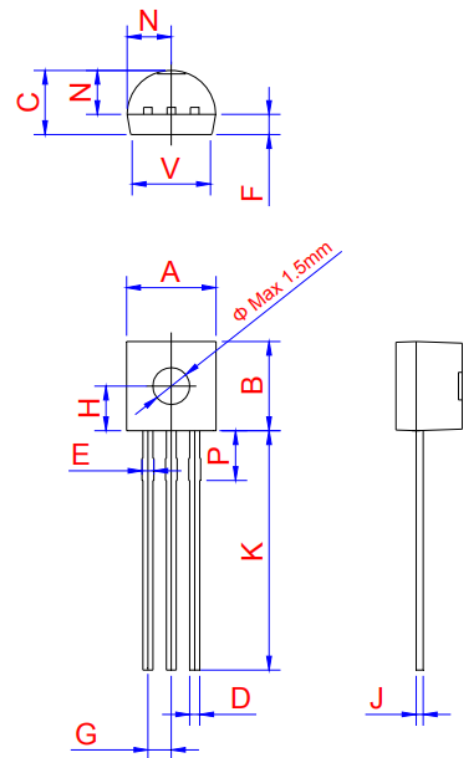
 $I_{TSM}(A), I^2 t (A^2 s)$ 

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

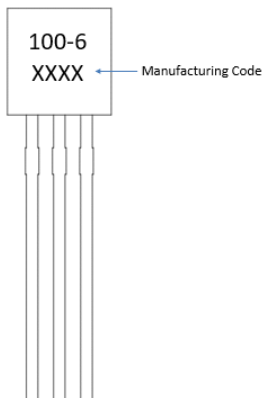
 $I_{GT}, I_H, I_L(T_j)/I_{GT}, I_H, I_L(T_j = 25^{\circ}C)$ 

Outline Drawing

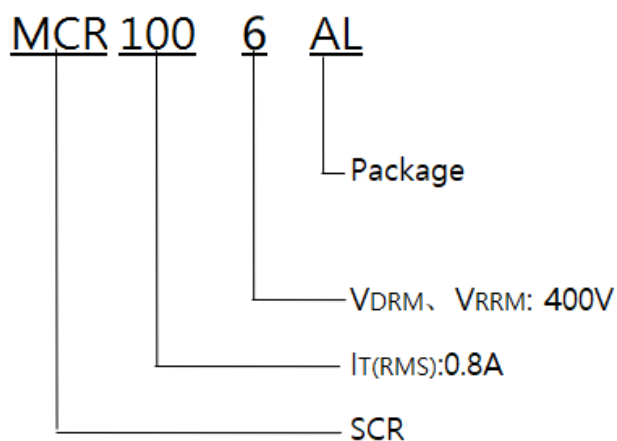
SYMBOL	MM		
	MIN	NOM	MAX
A	4.45	4.60	5.20
B	4.32	4.60	5.33
C	3.18	3.55	4.19
D	0.254	-	0.533
E	0.30	-	0.80
F	-	1.30	-
G	-	1.27	-
H	-	2.30	-
J	0.30	0.38	0.50
K	12.70	-	15.00
N	2.04	2.30	2.66
P	1.80	-	2.30
V	-	-	4.50



Marking Code



Part Number System



Package Information

Package	Base qty.	Delivery mode
TO-92	1000	Bulk Pack

Contact Information

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