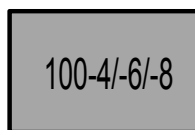
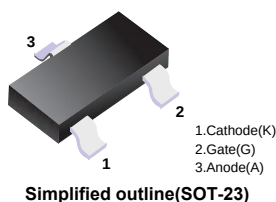


Features

Sensitive gate silicon controlled rectifiers
reverse blocking thyristors



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter		Symbols	Value	Units
Peak Repetitive Off-State Voltage ^{Note4} ($T_J = -40^\circ\text{C}$ to 110°C , Sine Wave, 50 to 60 Hz, Gate Open)	MCR100-4 MCR100-6 MCR100-8	$V_{\text{DRM}}, V_{\text{RRM}}$	200 400 600	V
On-State RMS Current		$I_{\text{T(RMS)}}$	0.5	A
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, $T_J = 25^\circ\text{C}$)		I_{TSM}	8	A
Circuit Fusing Considerations ($t = 8.3\text{ms}$)		I^2t	0.104	A^2s
Forward Peak Gate Power (Pulse Width $\leq 1\mu\text{s}$)		P_{GM}	0.1	W
Forward Average Gate Power ($t = 8.3\text{ms}$)		$P_{\text{G(AV)}}$	0.1	W
Peak Gate Current – Forward (Pulse Width $\leq 1\mu\text{s}$)		I_{GM}	1	A
Peak Gate Voltage – Reverse (Pulse Width $\leq 1\mu\text{s}$)		V_{GRM}	5	V
Operating Junction Temperature Range		T_J	-40 to +110	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-40 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbols	Max	Units
Peak Forward or Reverse Blocking Current ^{Note2} at $V_D = \text{Rated } V_{DRM} \text{ and } V_{RRM}, R_{GK} = 1\text{K}\Omega$	I_{DRM}, I_{RRM}	10	μA
Peak Forward On-State Voltage ^{Note1} at $I_{TM} = 0.8 \text{ A}$	V_{TM}	1.7	V
Gate Trigger Current ^{Note3} at $V_{AK} = 7 \text{ V}, R_L = 100 \Omega$	I_{GT}	200	μA
Holding Current ^{Note2} at $V_{AK} = 7 \text{ V}, \text{Initiating Current} = 20 \text{ mA}$	I_H	5 10	mA
Latch Current at $V_{AK} = 7 \text{ V}, I_g = 1 \text{ mA}$	I_L	10 15	mA
Gate Trigger Voltage ^{Note3} at $V_{AK} = 7 \text{ V}, R_L = 100 \Omega$	V_{GT}	0.8 1.2	V

Note:

1. Indicates pulse test width $\leq 1 \text{ ms}$, duty cycle $\leq 1\%$
2. $R_{GK} = 1 \text{ K}\Omega$ included in measurement
3. Does not include R_{GK} in measurement
4. V_{DRM} and V_{RRM} for all types can be applied on continuous basis. Ratings apply for zero negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

RATING AND CHARACTERISTIC CURVES

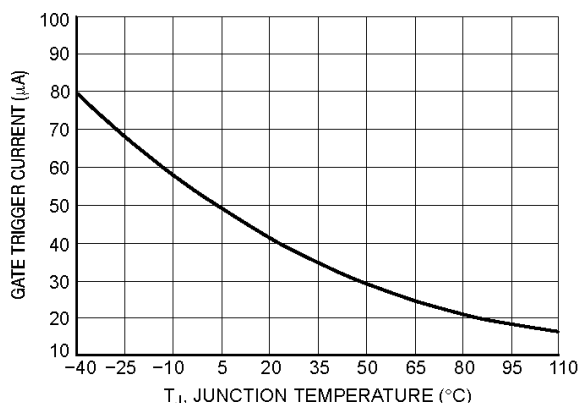


Figure 1. Typical Gate Trigger Current versus Junction Temperature

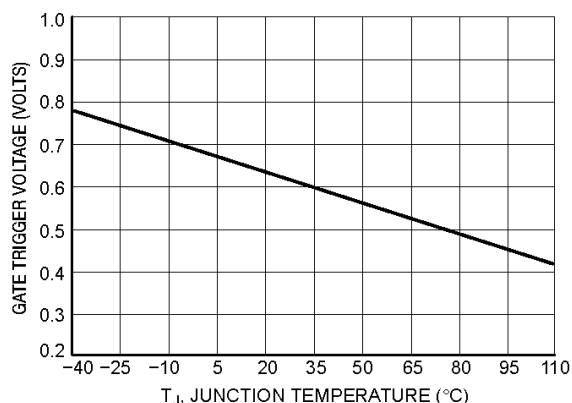


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

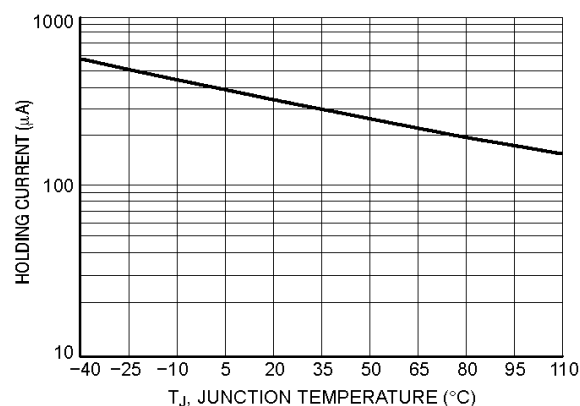


Figure 3. Typical Holding Current versus Junction Temperature

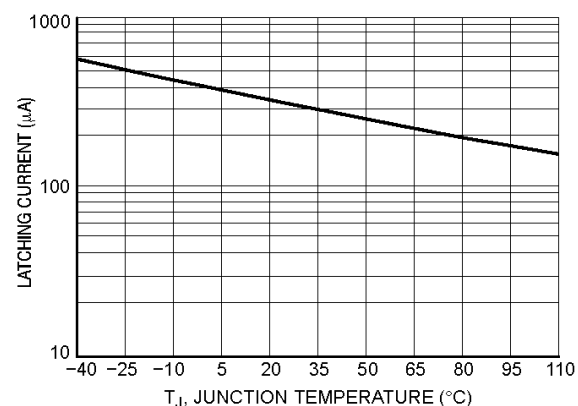


Figure 4. Typical Latching Current versus Junction Temperature

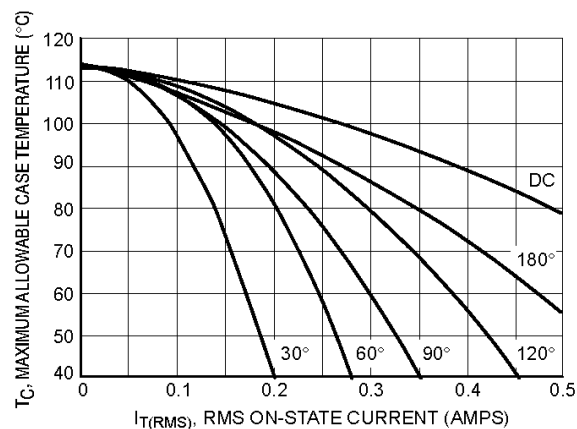


Figure 5. Typical RMS Current Derating

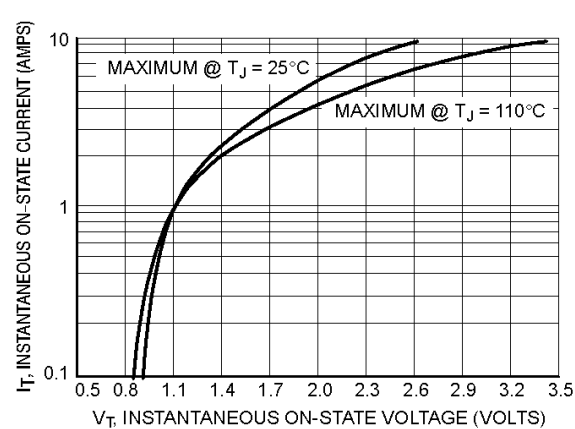
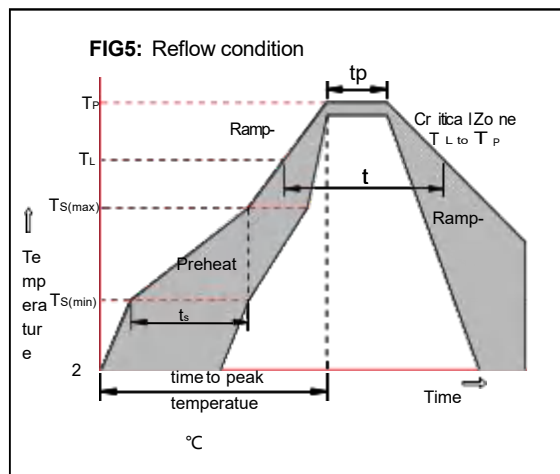


Figure 6. Typical On-State Characteristics

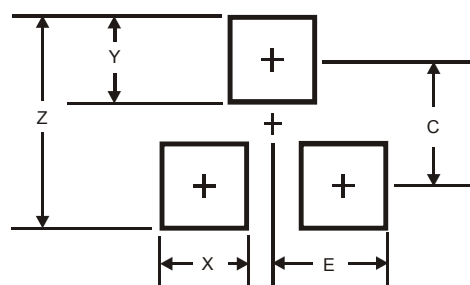
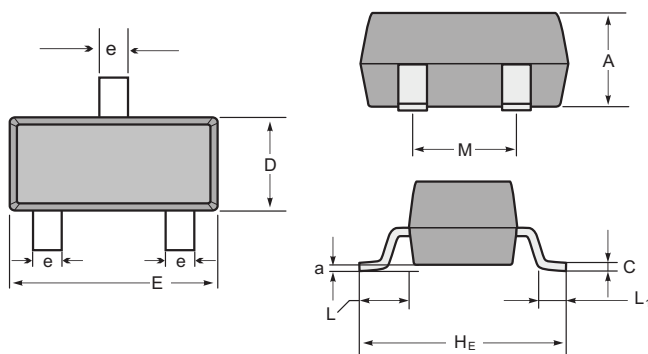
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max ($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L) (Liquid us)	+217°C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

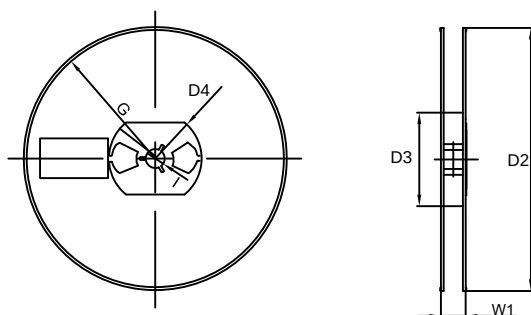
SOT23



SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape

Symbol	Dimension (mm)
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	1.55±0.10
D1	1.05±0.10
E	1.55±0.10
F	3.60±0.10
W	8.00±0.10
A0	3.80±0.20
B0	3.25±0.20
K0	1.45±0.10
T	0.25±0.05
D2	178.0±3.0
D3	55Min.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0

Quantity: 3000PCS