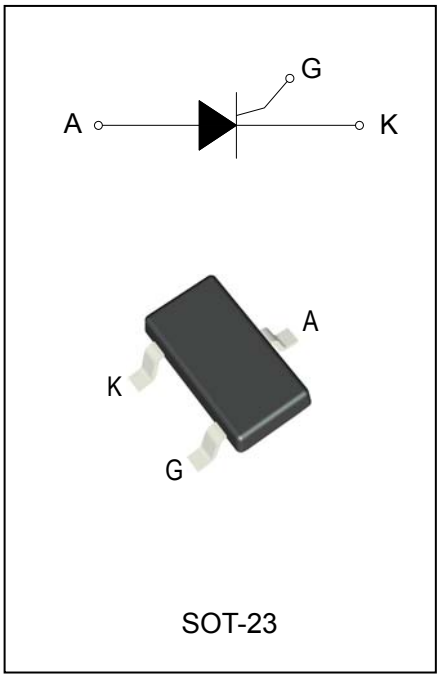
## *SCRs*




### General Description

Sensitive triggering SCR is suitable for the application where gate current limited such as small motor control， Earth leakage circuit breakers or Ground Fault Circuit Interrupters (GFCI) ， Solid state relays，General purpose switching，Small engine ignition。

### Features

- Repetitive Peak Off-State Voltage : 400V and 600V
- R.M.S On-State Current ( $I_{T(RMS)}$= 0.8 A )
- These are Pb-Free Devices

### Absolute Maximum Ratings

| Symbol | Items | Conditions | | Ratings | Unit |
|---|---|---|---|---|---|
| $V_{DRM}$ | Repetitive Peak Off-State Voltage | Tj=25°C | ADS08A40N | 400 | V |
| $V_{RRM}$ | Repetitive peak reverse voltage | | ADS08A60N | 600 | V |
| $I_{T(AV)}$ | Average On-State Current | Half Sine Wave , Tc = 60°C | | 0.5 | A |
| $I_{T(RMS)}$ | R.M.S On-State Current | Half Sine Wave , Tc = 60°C | | 0.8 | A |
| $I_{TSM}$ | Surge On-State Current | 1/2 Cycle, Sine Wave Non-Repetitive, tp=10ms(50Hz) | | 8 | A |
| dI/dt | Critical rate of rise of on-state current | Tj =110°C, tr≤ 100ns | | 50 | A/μs |
| $I^2t$ | $I^2t$ for Fusing | Tj =25°C,tp =10ms | | 0.415 | $A^2S$ |
| $P_{GM}$ | Forward Peak Gate Power Dissipation | Tj =110°C, Pulse Width ≤ 1.0μs | | 0.2 | W |
| $P_{G(AV)}$ | Forward Average Gate Power Dissipation | Tj =25°C, tp =10ms | | 0.1 | W |
| $I_{GM}$ | Peak Gate Current | Tj =110°C, Pulse Width ≤ 1.0μs | | 1 | A |
| Tj | Operating Junction Temperature | | | - 40 ~ 110 | °C |
| $T_{STG}$ | Storage Temperature | | | - 40 ~ 150 | °C |

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## Electrical Characteristics ( $T_j$ = 25°C unless otherwise specified )

| Symbol | Items | Conditions | | ADS08A40N/60N | Unit |
|---|---|---|---|---|---|
| $I_{DRM}$ $I_{RRM}$ | Peak Forward Reverse Blocking Current | $V_{DRM} = V_{RRM}$, $R_{GK}$ = 1KΩ Tj = 25°C | Max. | 5 | uA |
| | | $V_{DRM} = V_{RRM}$, $R_{GK}$ = 1KΩ Tj = 110°C | | 0.1 | mA |
| $V_{TM}$ | Peak On-State Voltage | $I_{TM}$ = 1A, tp = 380 μs | Max. | 1.7 | V |
| $V_{GD}$ | Non-Trigger Gate Voltage | $V_D = V_{DRM}$ $R_L$ = 3.3 kΩ $R_{GK}$ = 1KΩ Tj = 110°C | Min. | 0.2 | V |
| $V_{GT}$ | Gate Trigger Voltage | $V_D$ = 6V ， $R_L$ = 100Ω | Max. | 0.8 | V |
| $I_{GT}$ | Gate Trigger Current | | Max. | 200 | uA |
| $I_H$ | Holding Current | $I_T$ = 0.05A $R_{GK}$ = 1KΩ | Max. | 5 | mA |
| $I_L$ | Latching Current | $I_G$ = 1mA $R_{GK}$ = 1KΩ | Max. | 6 | mA |
| dV/dt | Critical Rate of Rise of Off-State Voltage | $V_D = 2/3V_{DRM}$ gate open $R_{GK}$ = 1KΩ Tj = 110°C | Min. | 20 | V/μs |
| $R_{th(j-c)}$ | Junction to case | | Max. | 75 | °C/W |
| $R_{th(j-a)}$ | Junction to ambient | | Max. | 400 | °C/W |

**FIG.1: Maximum average power dissipation (Single phase half wave)**

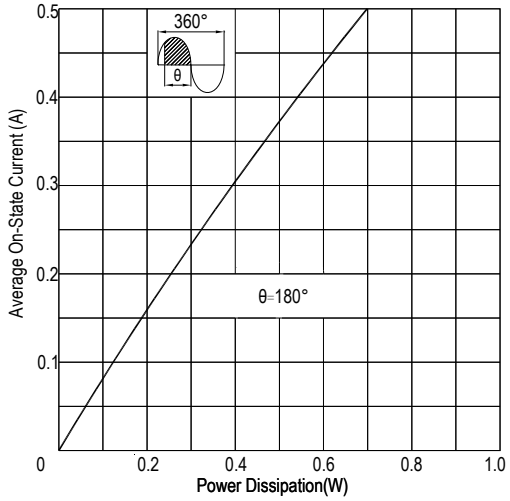



**FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)**

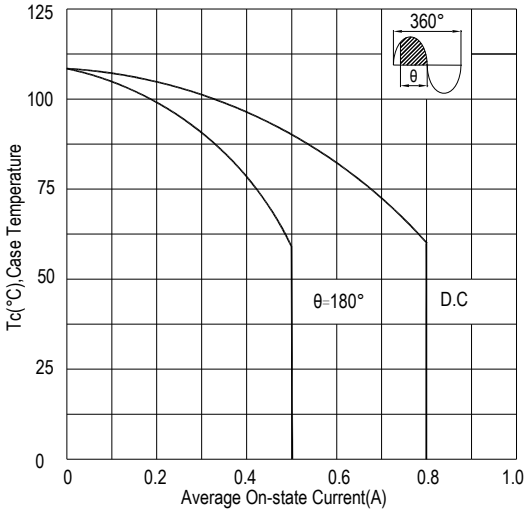



**FIG.3: Gate trigger current VS Junction temperature**

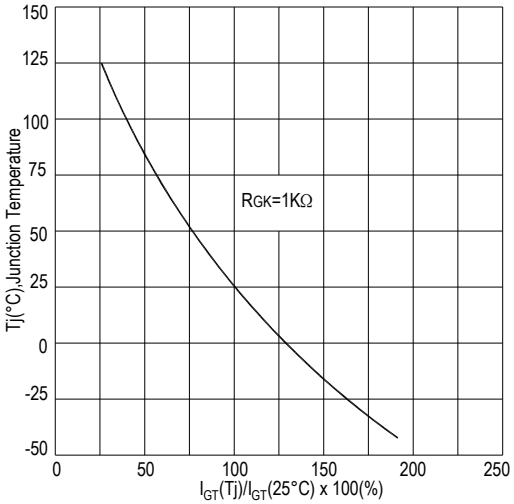



**FIG.4: Rated surge on-state current ( Non-Repetitive)**

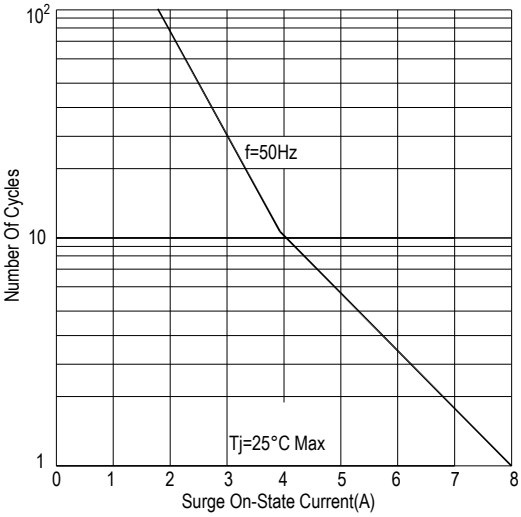



**FIG.5: On-state characteristics(Max)**

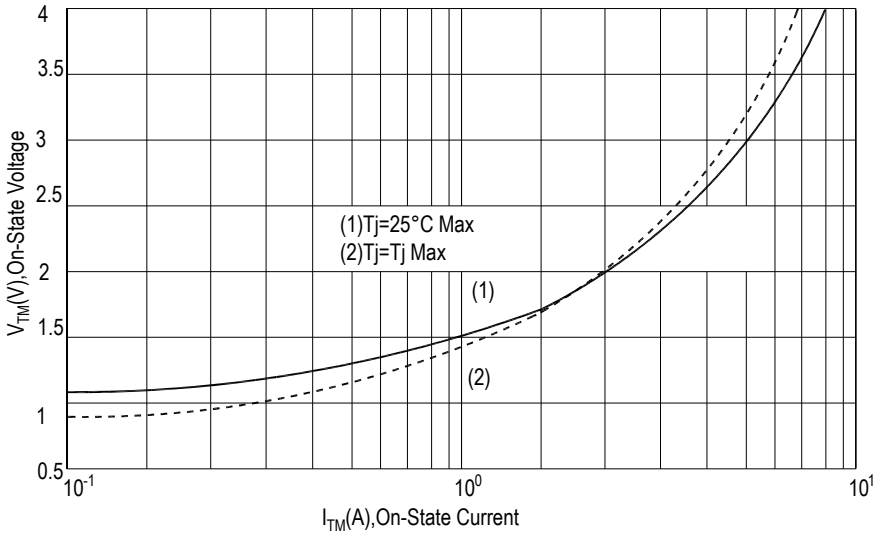


**FIG.6:Holding current and Latching current VS Junction temperature**

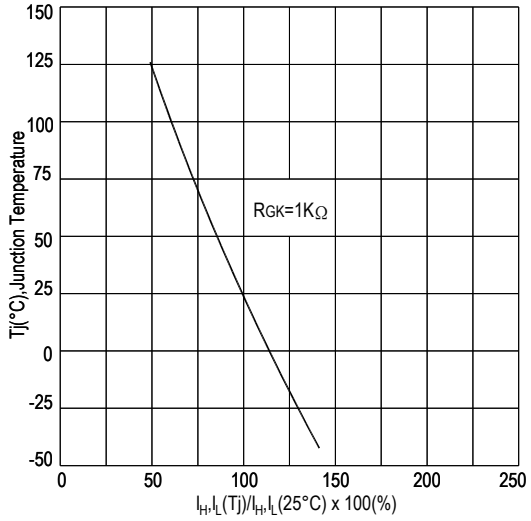
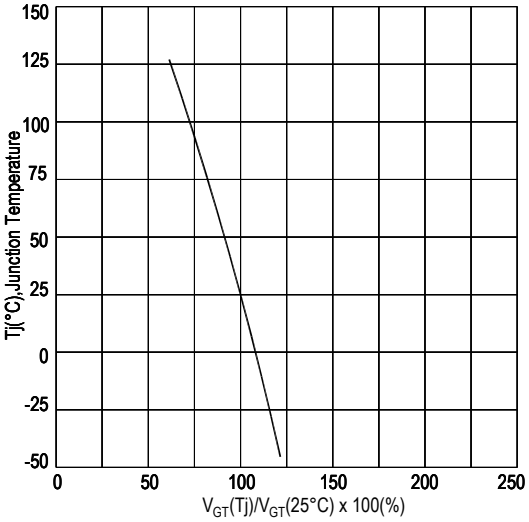
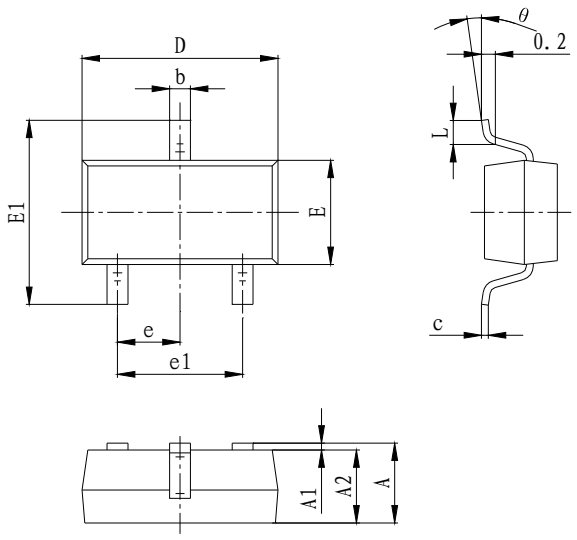



**FIG.7: Gate trigger voltage VS Junction temperature**



**PACKAGE MECHANICAL DATA**

**SOT-23 Package Dimension**




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

**Making Diagram**


8A6:Part number
(ADS08A60N)

AD S 08 A 60 N

ADVANCED
Internal control code
Current:08=0.8A
SCR series
Voltage:60=600V 40=400V
Package explain:N=SOT-23-3L

**Ordering information**

| Part number | Package | Marking | Packing | Quantity |
|---|---|---|---|---|
| ADS08A40N | SOT-23 | 8A4 | Tape&reel | 3000pcs |
| ADS08A60N | SOT-23 | 8A6 | Tape&reel | 3000pcs |

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