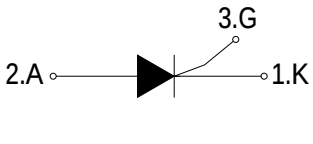
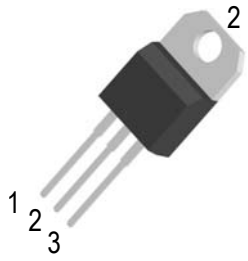
## *SCRs*

### General Description

The 25A SCR series of silicon controlled rectifiers,with high ability to withstand the shock loading of large current,provide high dv/dt rate with strong resistance to electromagnetic interference.They are especially recommended for use on solid state relay,motorcycle, power charger,T-tools etc.




**TO-220**

### Features

- Repetitive Peak Off-State Voltage : 1000V and 1200V
- R.M.S On-State Current ( $I_{T(RMS)}$= 25 A )
- These are Pb-Free Devices

### Absolute Maximum Ratings

| Symbol | Items | Conditions | | Ratings | Unit |
|---|---|---|---|---|---|
| $V_{DRM}$ | Repetitive Peak Off-State Voltage | Tj=25°C | ADS25A100 | 1000 | V |
| $V_{RRM}$ | Repetitive peak reverse voltage | | ADS25A120 | 1200 | V |
| $I_{T(AV)}$ | Average On-State Current | Half Sine Wave , Tc = 100°C | | 16 | A |
| $I_{T(RMS)}$ | R.M.S On-State Current | Half Sine Wave , Tc = 100°C | | 25 | A |
| $I_{TSM}$ | Surge On-State Current | 1/2 Cycle, Sine Wave Non-Repetitive, tp=10ms(50Hz)Tj =25°C | | 300 | A |
| $I^2t$ | $I^2t$ for Fusing | Tj =25°C,tp =10ms | | 450 | $A^2S$ |
| $P_{GM}$ | Forward Peak Gate Power Dissipation | Tj =125°C, Pulse Width ≤ 20μs | | 5 | W |
| $P_{G(AV)}$ | Forward Average Gate Power Dissipation | Tj =25°C, tp =10ms | | 1 | W |
| $I_{GM}$ | Peak Gate Current | Tj =125°C, Pulse Width ≤ 20μs | | 4 | A |
| Tj | Operating Junction Temperature | | | - 40 ~ 125 | °C |
| $T_{STG}$ | Storage Temperature | | | - 40 ~ 150 | °C |

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

| Symbol | Items | Conditions | | ADS25A100/120 | | Unit |
|---|---|---|---|---|---|---|
| | | | | S | Blank | |
| $I_{DRM}$ $I_{RRM}$ | Peak Forward Reverse Blocking Current | $V_{DRM} = V_{RRM}$ Tj = 25°C | Max. | 10 | | uA |
| | | $V_{DRM} = V_{RRM}$ Tj = 125°C | | 4 | | mA |
| $V_{TM}$ | Peak On-State Voltage | $I_{TM}$ = 50A, $t_p$ = 380 μs | Max. | 1.6 | | V |
| $V_{GD}$ | Non-Trigger Gate Voltage | $V_D = V_{DRM}$ $R_L$ = 3.3 kΩ Tj = 125°C | Min. | 0.2 | | V |
| $V_{GT}$ | Gate Trigger Voltage | $V_D$ = 12V ， $R_L$ = 33Ω | Max. | 1.3 | | V |
| $I_{GT}$ | Gate Trigger Current | | Max. | 15 | 30 | mA |
| $I_H$ | Holding Current | $I_T$ = 0.5A | Max. | 30 | 40 | mA |
| $I_L$ | Latching Current | $I_G$ = 1.2 $I_{GT}$ | Max. | 50 | 50 | mA |
| dV/dt | Critical Rate of Rise of Off-State Voltage | $V_D$ = 2/3$V_{DRM}$ gate open Tj = 125°C | Min. | 1000 | 1500 | V/μs |
| $R_{th(j-c)}$ | Junction to case (AC) | | Max. | 1.0 | | °C/W |
| $R_{th(j-a)}$ | Junction to ambient | | Max. | 60 | | °C/W |

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

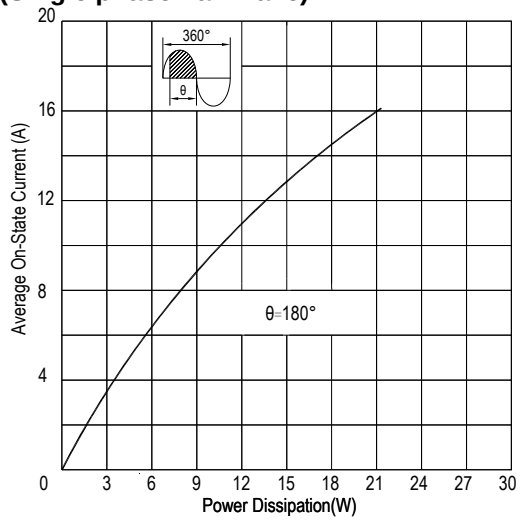



**FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)**

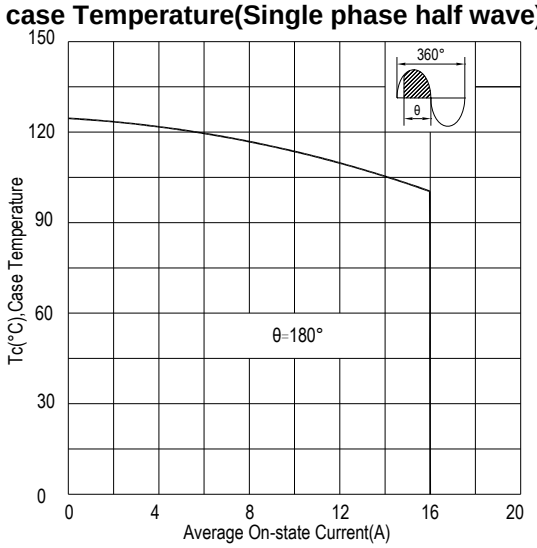



**FIG.3: Gate trigger current VS Junction temperature**

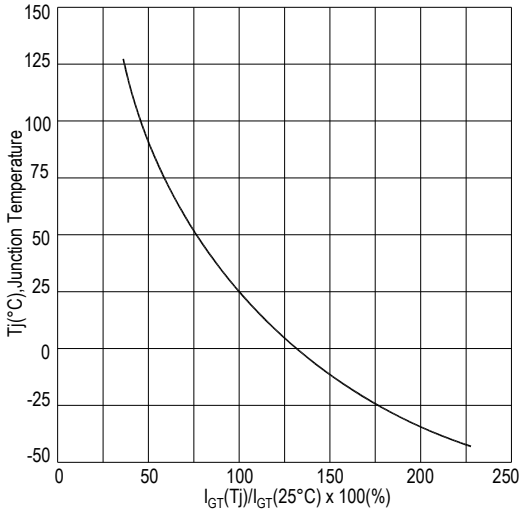



**FIG.4: Rated surge on-state current ( Non-Repetitive)**

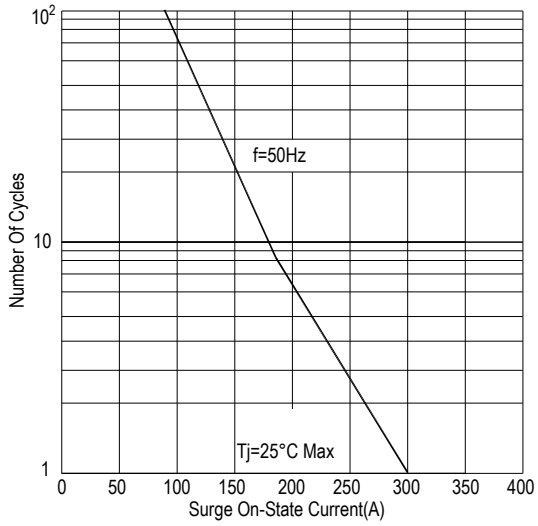



**FIG.5: On-state characteristics(Max)**

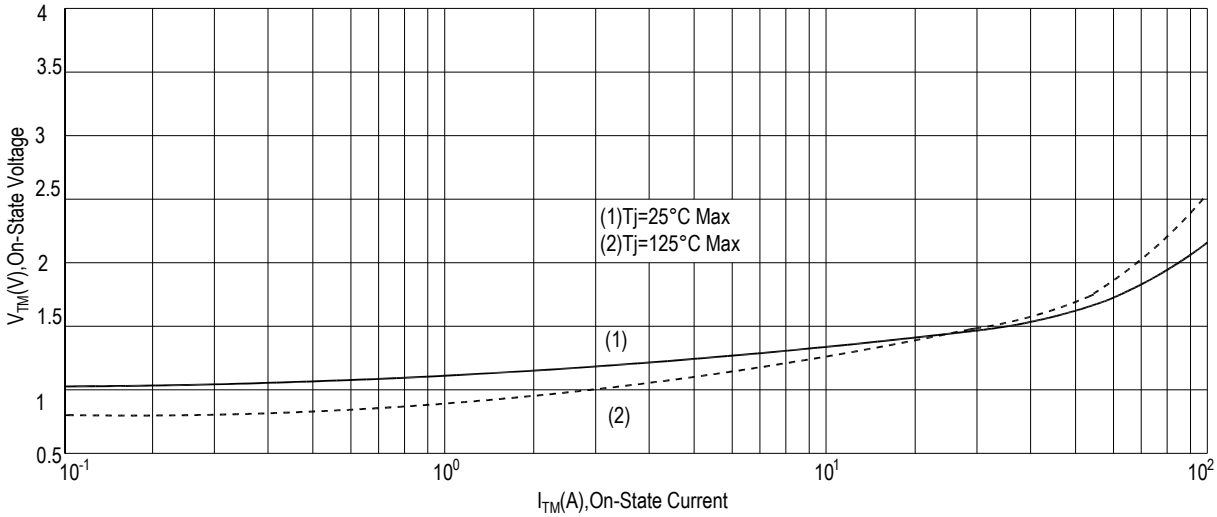


**FIG.6:Holding current and Latching current VS Junction temperature**

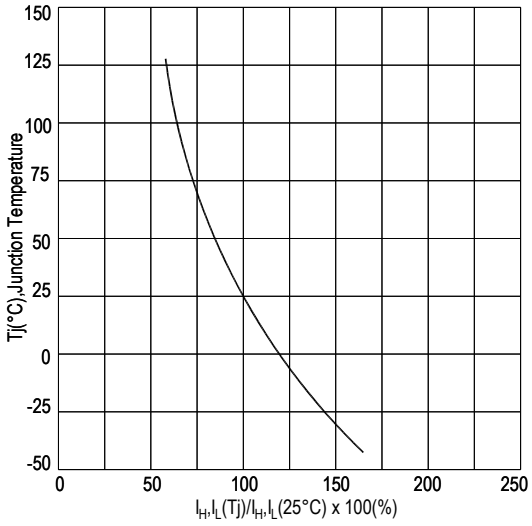
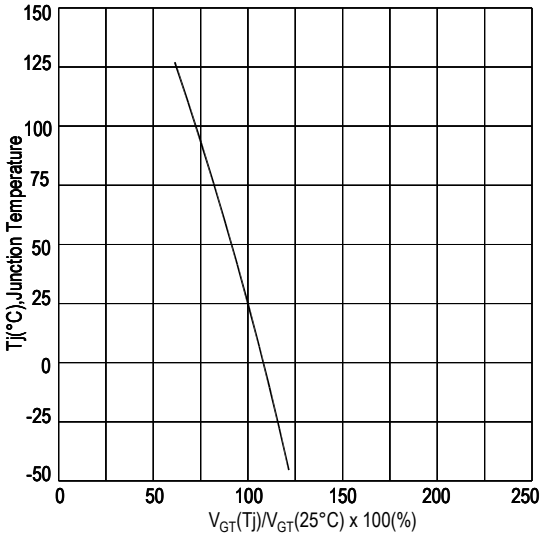
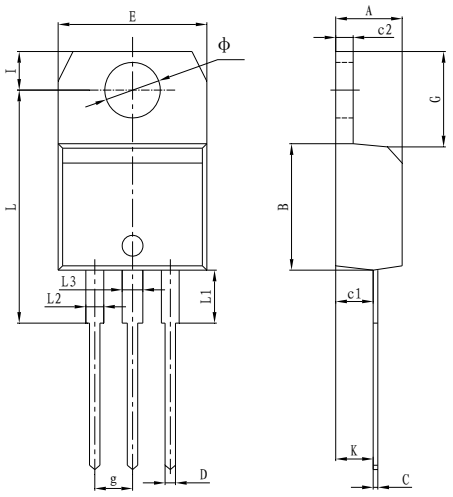



**FIG.7: Gate trigger voltage VS Junction temperature**



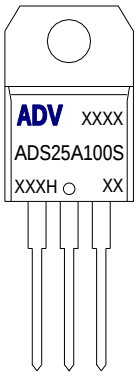
## PACKAGE MECHANICAL DATA

### TO-220 Package Dimension




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 4.40 | 4.60 | 0.173 | 0.181 |
| B | 9.00 | 9.30 | 0.354 | 0.366 |
| C | 0.40 | 0.60 | 0.015 | 0.023 |
| c1 | 2.00 | 2.60 | 0.078 | 0.102 |
| c2 | 1.23 | 1.32 | 0.048 | 0.051 |
| D | 0.70 | 1.00 | 0.027 | 0.039 |
| E | 10.00 | 10.40 | 0.393 | 0.409 |
| g | 2.40 | 2.70 | 0.094 | 0.106 |
| G | 6.20 | 6.80 | 0.244 | 0.267 |
| I | 2.65 | 2.95 | 0.104 | 0.116 |
| L | 15.80 | 16.80 | 0.622 | 0.661 |
| L1 | 3.75 | | 0.147 | |
| L2 | 1.14 | 1.70 | 0.044 | 0.066 |
| L3 | 1.14 | 1.70 | 0.044 | 0.066 |
| Φ | 3.60 | 3.90 | 0.141 | 0.153 |
| K | 2.60TYP | | 0.102TYP | |

### Making Diagram




ADV:Logo
ADS25A100S:Part number
X:Internal control code
H:Halogen Free

AD S 25 A 100 # T(S)(W)

ADVANCED
Internal control code
Current:25=25A
SCR Series
Voltage:100=1000V 120=1200V
Sensitivity and type:
T=0.2mA
S=15mA
Blank=30mA
W=80mA
Package explain:Blank=TO-220

### Ordering information

| Part number | Package | Marking | Packing | Quantity |
|---|---|---|---|---|
| ADS25A100# | TO-220 | ADS25A100# | Tube | 50pcs |
| ADS25A120# | TO-220 | ADS25A120# | Tube | 50pcs |
| Note:# = Gate Trigger Current Sensitivity and type | | | | |

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