

High Current Button Rectifiers

FEATURES

- Diffused junction
- Low leakage
- High surge capability
- Low cost construction utilizing void-free molded plastic technique
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition


ARS


MECHANICAL DATA

Case: ARS

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

Weight: 1.68 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | | | | | | | |
|--|--------------------|--------------|---------|---------|---------|---------|---------|---------|------|
| PARAMETER | SYMBOL | ARS 50A | ARS 50B | ARS 50D | ARS 50G | ARS 50J | ARS 50K | ARS 50M | UNIT |
| Maximum repetitive peak reverse voltage | V _{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current | I _{F(AV)} | 50 | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 600 | | | | | | | A |
| Maximum instantaneous forward voltage (Note 1) @ 50 A | V _F | 1.1 | | | | | | | V |
| Maximum reverse current @ Rated VR T _J =25 °C T _J =125 °C | I _R | 5 250 | | | | | | | μA |
| Typical reverse recovery time (Note 2) | trr | 3 | | | | | | | μs |
| Typical junction capacitance (Note 3) | C _j | 300 | | | | | | | pF |
| Typical Thermal Resistance | R _{θJC} | 1 | | | | | | | °C/W |
| Operating junction temperature range | T _J | - 50 to +175 | | | | | | | °C |
| Storage temperature range | T _{STG} | - 50 to +175 | | | | | | | °C |

Note 1: Pulse test with PW=300μs, 1% duty cycle

 Note 2: Reverse Recovery Time Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

ORDERING INFORMATION

| PART NO. | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING |
|--------------------|--------------|---------------------|---------|----------------------|
| ARS50x (Note 1) | B0 | G | ARS | 1,000 / Bulk packing |

Note 1: "x" defines voltage from 50V (ARS50A) to 1000V (ARS50M)

EXAMPLE

| PREFERRED P/N | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
|---------------|----------|--------------|---------------------|----------------|
| ARS50M B0 | ARS50M | B0 | | |
| ARS50M B0G | ARS50M | B0 | G | Green compound |

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

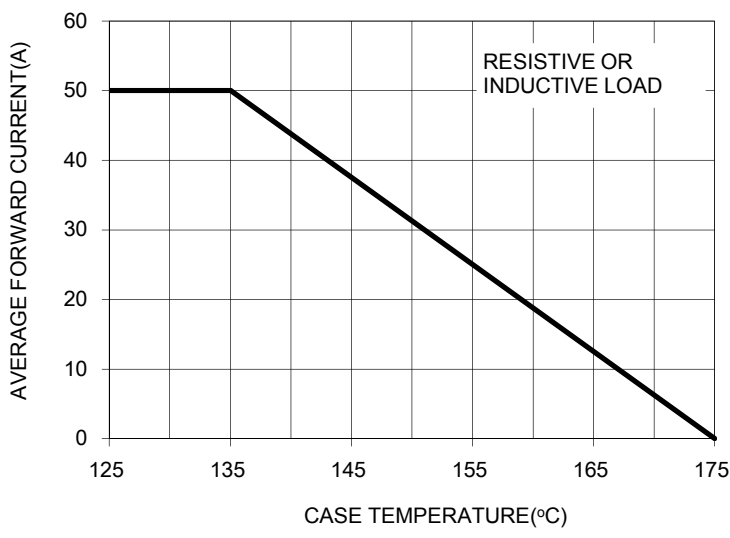


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

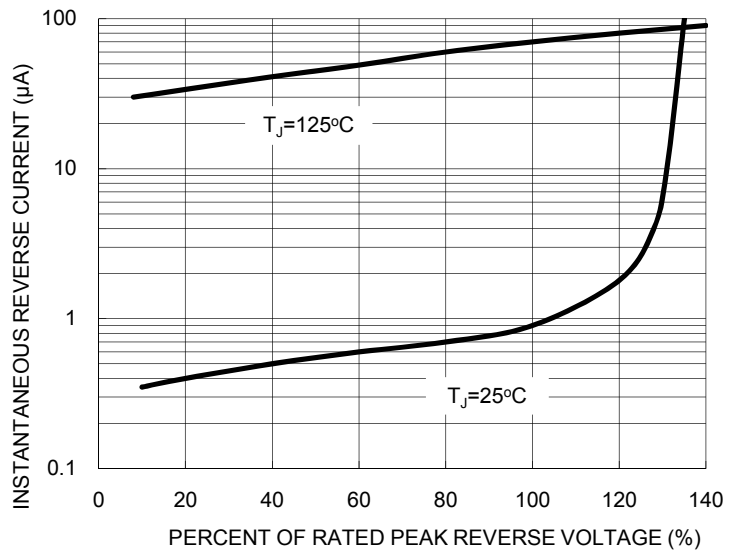


FIG. 3 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

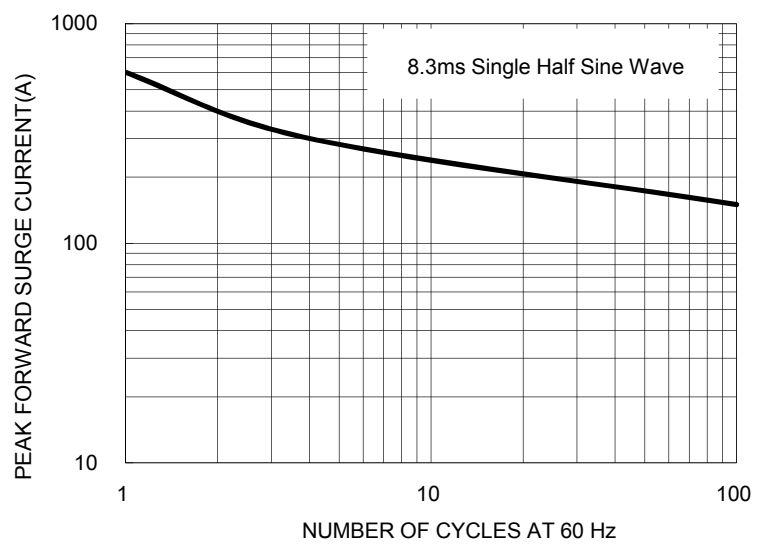


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

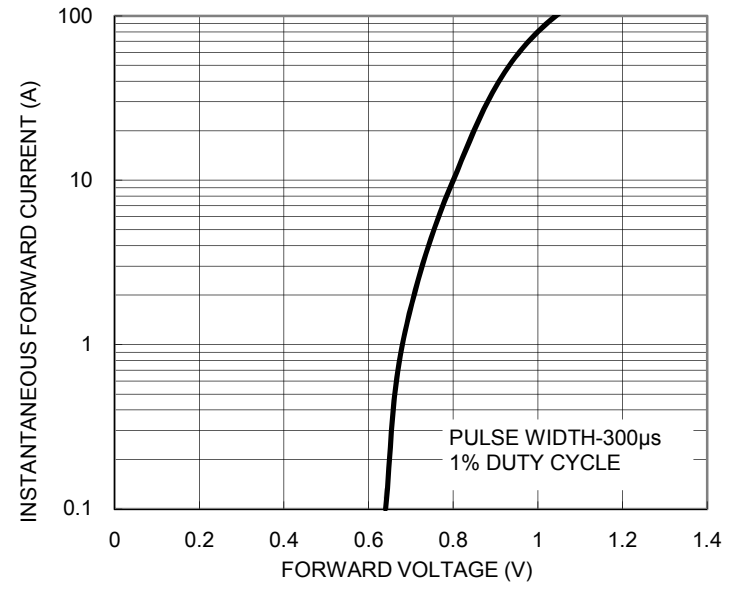


FIG. 5 TYPICAL JUNCTION CAPACITANCE

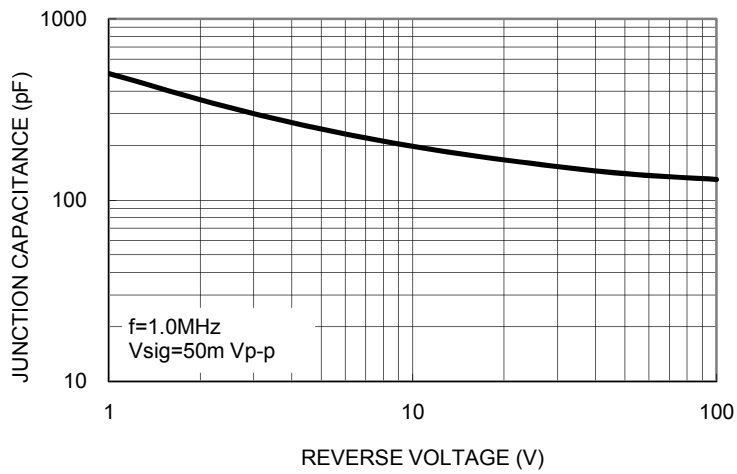
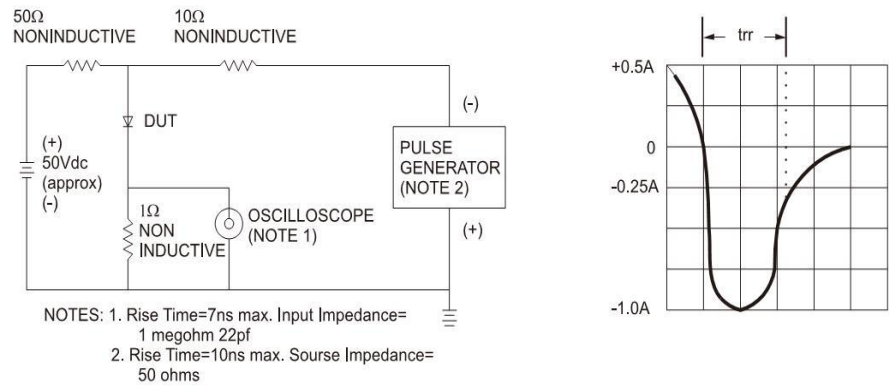


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

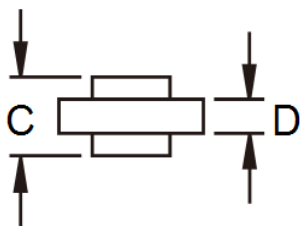


PACKAGE OUTLINE DIMENSIONS

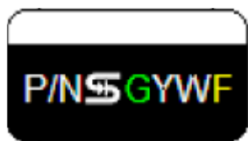
ARS



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 5.50 | 5.70 | 0.217 | 0.224 |
| B | 8.30 | 8.90 | 0.327 | 0.350 |
| C | 6.00 | 6.40 | 0.236 | 0.252 |
| D | 4.20 | 4.70 | 0.165 | 0.185 |



MARKING DIAGRAM



- P/N = Specific Device Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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