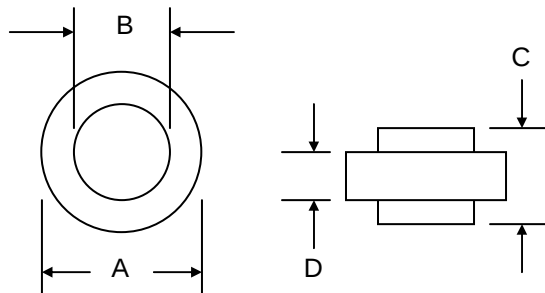


### Features

- Diffused Junction
- Low Leakage
- Low Cost
- High Surge Current Capability
- Low Cost Construction Utilizing Void-Free Molded Plastic Technique



### Mechanical Data

- Case: AR or ARS, Molded Plastic
- Terminals: Plated Terminals Solderable per MIL-STD-202, Method 208
- Polarity: Color Ring Denotes Cathode End
- Weight: 1.8 grams (approx.)
- Mounting Position: Any
- Marking: Color Ring Only
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 3**

| Dim                  | AR   |       | ARS  |      |
|----------------------|------|-------|------|------|
|                      | Min  | Max   | Min  | Max  |
| A                    | 9.70 | 10.40 | 8.30 | 8.90 |
| B                    | 5.50 | 5.70  | 5.50 | 5.70 |
| C                    | 6.0  | 6.40  | 6.0  | 6.40 |
| D                    | 4.2  | 4.7   | 4.2  | 4.7  |
| All Dimensions in mm |      |       |      |      |

### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

Single Phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic                                                                                                                                  | Symbol                                                  | AR/S<br>50A | AR/S<br>50B | AR/S<br>50D | AR/S<br>50G | AR/S<br>50J | Unit |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                                          | V <sub>RRM</sub><br>V <sub>VRWM</sub><br>V <sub>R</sub> | 50          | 100         | 200         | 400         | 600         | V    |
| RMS Reverse Voltage                                                                                                                             | V <sub>R(RMS)</sub>                                     | 35          | 70          | 140         | 280         | 420         | V    |
| Average Rectified Output Current @T <sub>C</sub> = 150°C                                                                                        | I <sub>O</sub>                                          | 50          |             |             |             |             | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on<br>rated load (JEDEC Method) at T <sub>J</sub> = 150°C | I <sub>FSM</sub>                                        | 500         |             |             |             |             | A    |
| Forward Voltage @I <sub>F</sub> = 50A                                                                                                           | V <sub>FM</sub>                                         | 1.1         |             |             |             |             | V    |
| Peak Reverse Current @T <sub>A</sub> = 25°C<br>At Rated DC Blocking Voltage @T <sub>A</sub> = 100°C                                             | I <sub>RM</sub>                                         | 5.0<br>500  |             |             |             |             | μA   |
| Reverse Recovery Time (Note 1)                                                                                                                  | t <sub>rr</sub>                                         | 3.0         |             |             |             |             | μS   |
| Typical Junction Capacitance (Note 2)                                                                                                           | C <sub>j</sub>                                          | 400         |             |             |             |             | pF   |
| Typical Thermal Resistance (Note 3)                                                                                                             | R <sub>θJC</sub>                                        | 1.0         |             |             |             |             | °C/W |
| Operating and Storage Temperature Range                                                                                                         | T <sub>J</sub> , T <sub>STG</sub>                       | -50 to +175 |             |             |             |             | °C   |
| Polarity and Voltage Denotation Color Ring                                                                                                      |                                                         | Green       | Yellow      | Silver      | Orange      | Red         |      |

Note: 1. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A  
 2. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.  
 3. Thermal Resistance: Junction to case, single side cooled.

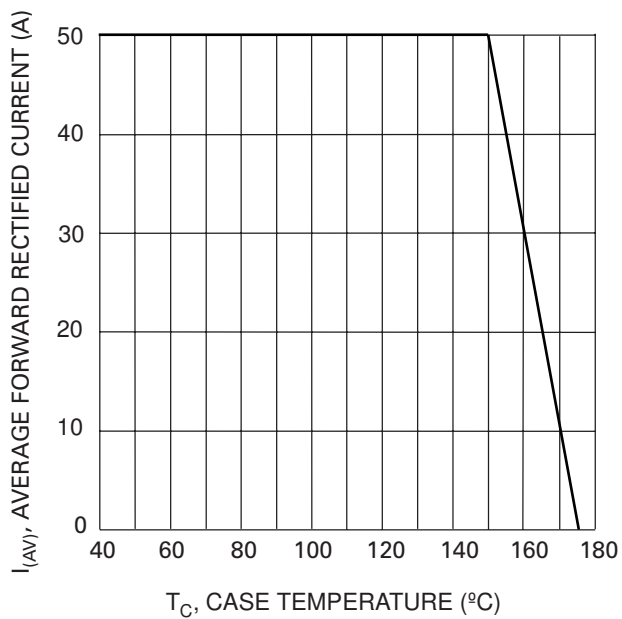


Fig. 1 Forward Current Derating Curve

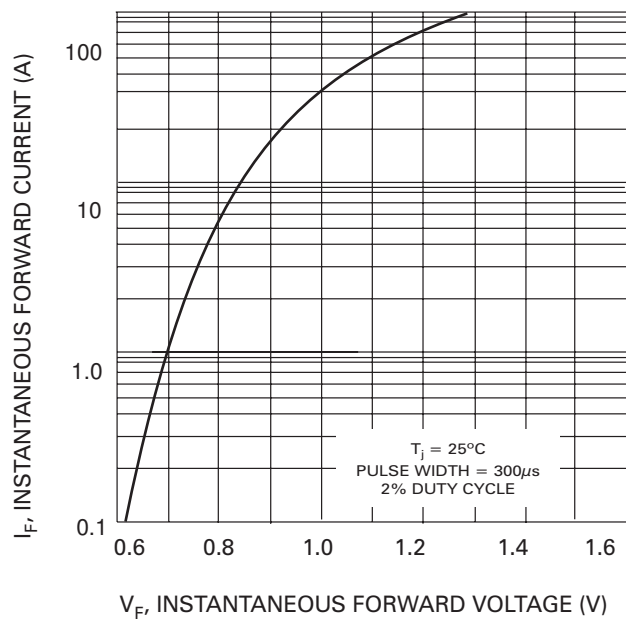


Fig. 2 Typical Forward Characteristics

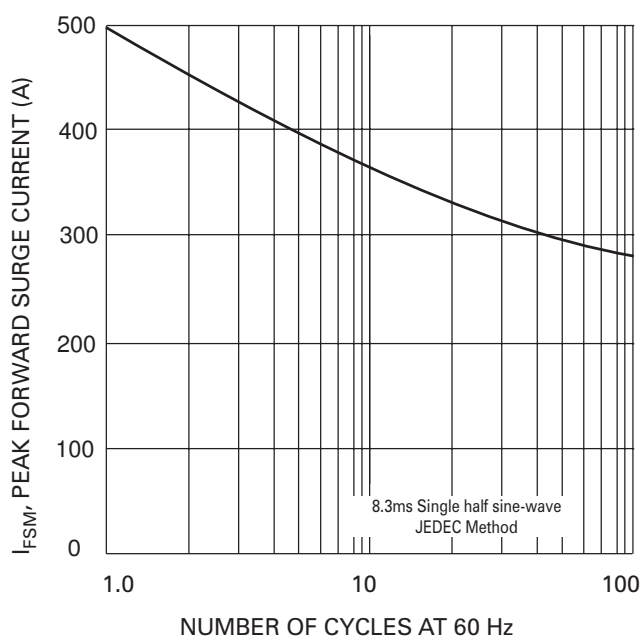


Fig. 3 Max Non-Repetitive Peak Fwd Surge Current

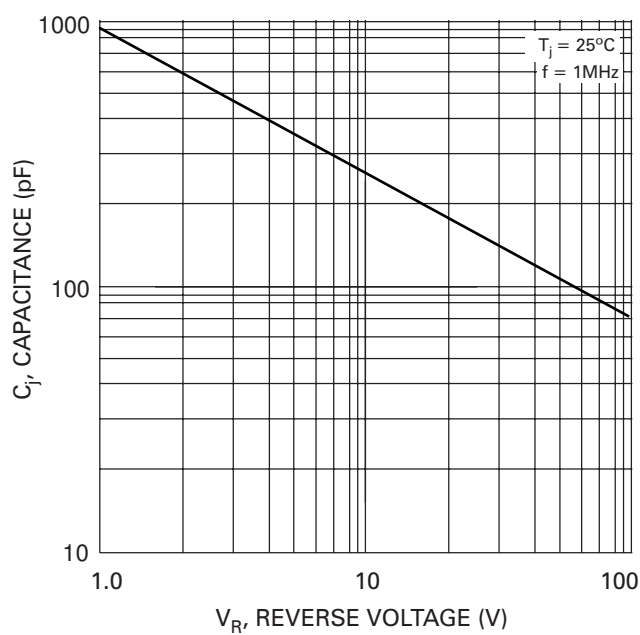


Fig. 4 Typical Junction Capacitance

## ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|-------------|--------------|-------------------|
| AR50A       | 10mm Button  | 1000 Units/Box    |
| ARS50A      | 8.6mm Button | 1000 Units/Box    |
| AR50B       | 10mm Button  | 1000 Units/Box    |
| ARS50B      | 8.6mm Button | 1000 Units/Box    |
| AR50D       | 10mm Button  | 1000 Units/Box    |
| ARS50D      | 8.6mm Button | 1000 Units/Box    |
| AR50G       | 10mm Button  | 1000 Units/Box    |
| ARS50G      | 8.6mm Button | 1000 Units/Box    |
| AR50J       | 10mm Button  | 1000 Units/Box    |
| ARS50J      | 8.6mm Button | 1000 Units/Box    |

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, AR50A-LF.**

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