



# ARS50 / AR50

## 50.0 AMPS. High Current Plastic Silicon Rectifiers



Voltage Range  
50 to 1000 Volts  
Current  
50.0 Amperes

### Features

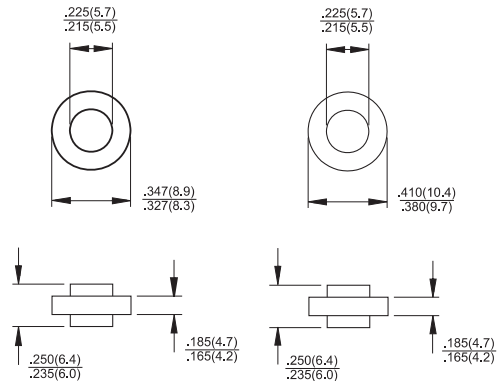
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✧ Low cost construction utilizing void-free molded plastic technique
- ✧ Low cost
- ✧ Diffused junction
- ✧ Low leakage
- ✧ High surge capability
- ✧ High temperature soldering guaranteed: 260°C for 10 seconds

### Mechanical Data

- ✧ Case: Molded plastic case
- ✧ Terminals: Plated terminals, solderable per MIL-STD-202, Method 208
- ✧ Polarity: Color ring denotes cathode end
- ✧ Weight: 0.07 ounce, 1.8 grams
- ✧ Mounting position: Any

#### ARS

#### AR



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	ARS 50A	ARS 50B	ARS 50D	ARS 50G	ARS 50J	ARS 50K	ARS 50M	Units
		AR 50A	AR 50B	AR 50D	AR 50G	AR 50J	AR 50K	AR 50M	
Maximum Recurrent 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 @ $T_c = 135^\circ\text{C}$	$I_{(AV)}$	50							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method ) at $T_j=150^\circ\text{C}$	$I_{FSM}$	500							A
Maximum Instantaneous Forward Voltage @ 50A	$V_F$	1.1							V
Maximum DC Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_c=100^\circ\text{C}$	$I_R$	5.0 250							$\mu\text{A}$ $\mu\text{A}$
Typical Reverse Recovery Time (Note 2)	$T_{rr}$	3.0							$\mu\text{s}$
Typical Junction Capacitance ( Note 1 ) $T_j=25^\circ\text{C}$	$C_j$	300							pF
Typical Thermal Resistance ( Note 3 )	$R_{\theta_{JC}}$	1.0							$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-50 to +175							$^\circ\text{C}$

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

2. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

3. Thermal Resistance from Junction to Case, Single Side Cooled.

## RATINGS AND CHARACTERISTIC CURVES (ARS50 THRU AR50)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

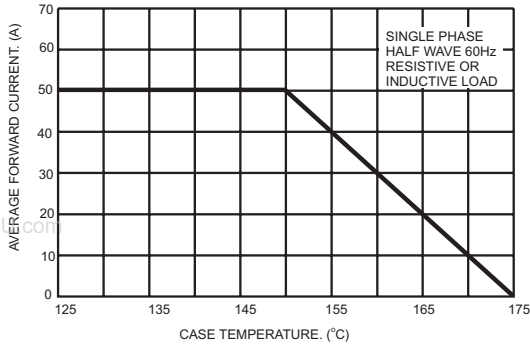


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

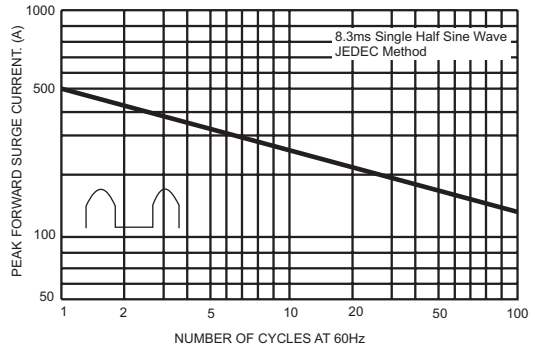


FIG.3- TYPICAL FORWARD CHARACTERISTICS

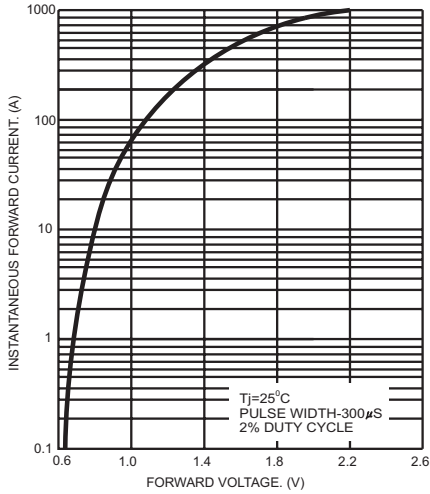


FIG.4- TYPICAL REVERSE CHARACTERISTICS

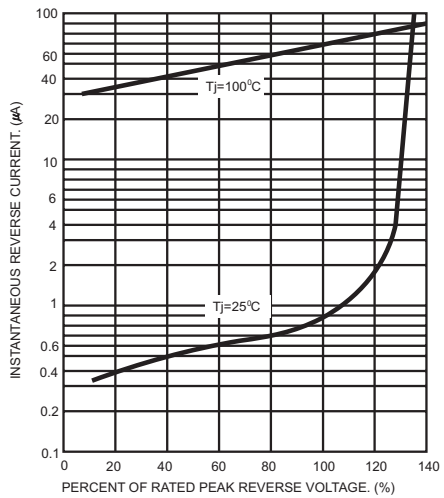


FIG.5- TYPICAL JUNCTION CAPACITANCE

