



# ARS50 / AR50 SERIES

**50.0 AMPS. HIGH CURRENT  
PLASTIC SILICON  
RECTIFIERS**

**Voltage Range  
50 to 1000 VOLTS  
Current  
50.0 Amperes**

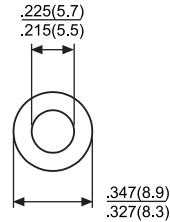
### Features

- 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:  
250°C for 10 seconds

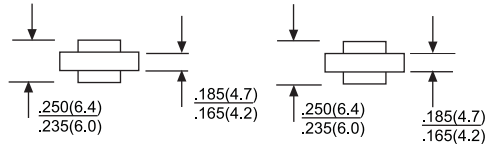
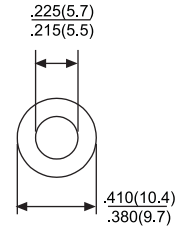
### Mechanical Data

- Cases: 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, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%

Type Number		ARS 50005	ARS 5001	ARS 5002	ARS 5004	ARS 5006	ARS 5008	ARS 5010	UNITS
		AR50005	AR5001	AR5002	AR5004	AR5006	AR5008	AR5010	
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current @ T <sub>C</sub> = 135°C	I <sub>F(AV)</sub>	50							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) at T <sub>J</sub> = 150°C	I <sub>FSM</sub>	500							A
Maximum Instantaneous Forward Voltage @ 50A	V <sub>F</sub>	1.1							V
Maximum DC Reverse Current @ T <sub>C</sub> = 25°C at Rated DC Blocking Voltage @ T <sub>C</sub> = 100°C	I <sub>R</sub>	5.0 250							uA uA
Typical Reverse Recovery Time (Note 2)	T <sub>RR</sub>	3.0							uS
Typical Junction Capacitance (Note 1) T <sub>J</sub> = 25°C	C <sub>J</sub>	300							pF
Typical Thermal Resistance R <sub>θJC</sub> (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

- NOTES: 1. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.  
2. Reverse Recovery Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A  
3. Thermal Resistance from Junction to Case, Single Side Cooled.

# RATING AND CHARACTERISTIC CURVES

## ARS50/AR50 SERIES



FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

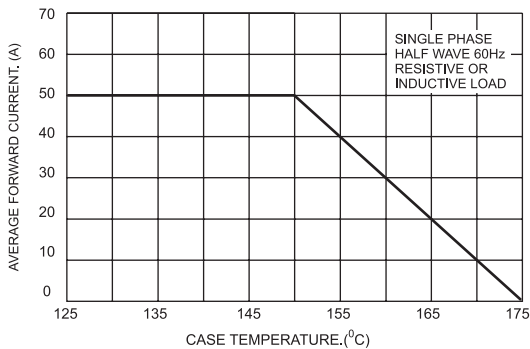


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

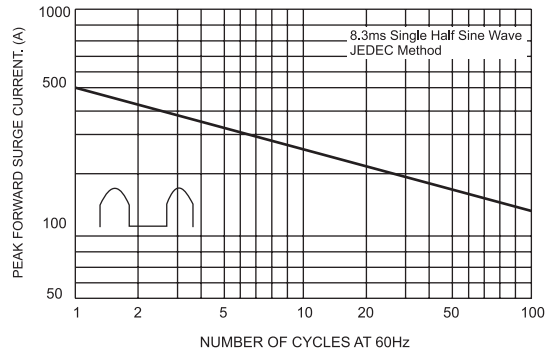


FIG.3- TYPICAL FORWARD CHARACTERISTICS

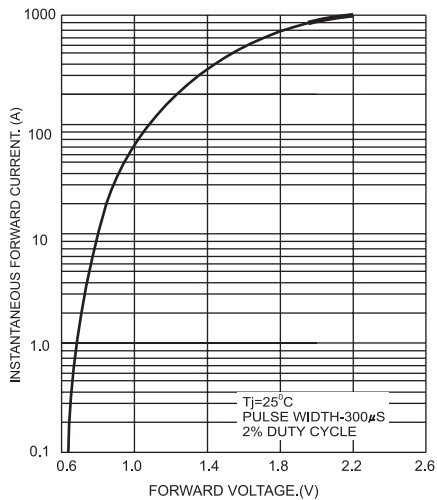


FIG.4-TYPICAL REVERSE CHARACTERISTICS

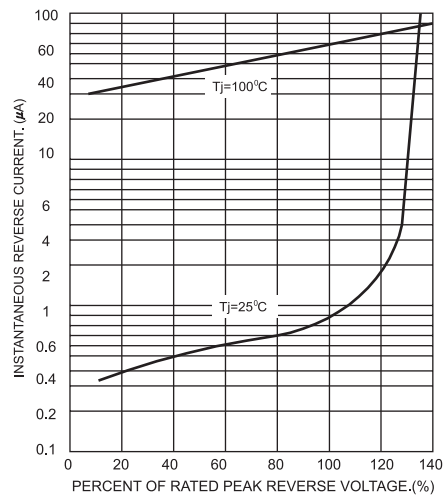


FIG.5- TYPICAL JUNCTION CAPACITANCE

