



ARS50 / AR50

50.0 AMPS. High Current Plastic Silicon Rectifiers



Voltage Range
50 to 1000 Volts
Current
50.0 Amperes

Features

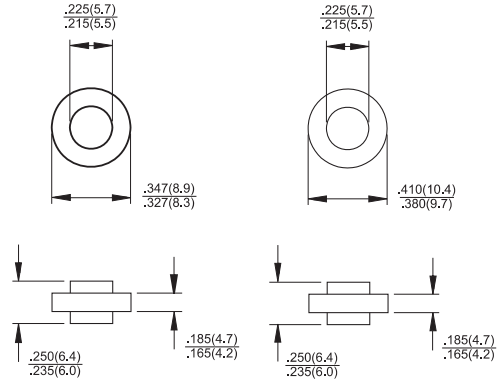
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✧ Low cost construction utilizing void-free molded plastic technique
- ✧ Low cost
- ✧ Diffused junction
- ✧ Low leakage
- ✧ High surge capability
- ✧ High temperature soldering guaranteed: 260°C for 10 seconds

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							μA μA
Typical Reverse Recovery Time (Note 2)	T_{rr}	3.0							μs
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

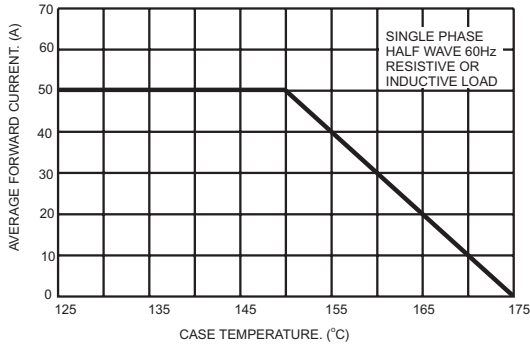


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

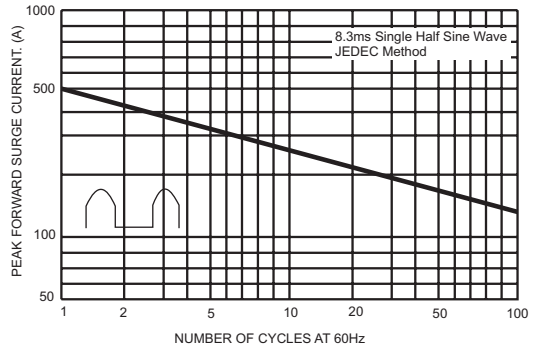


FIG.3- TYPICAL FORWARD CHARACTERISTICS

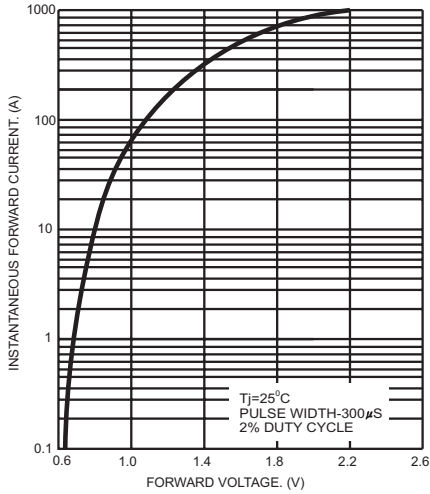


FIG.4- TYPICAL REVERSE CHARACTERISTICS

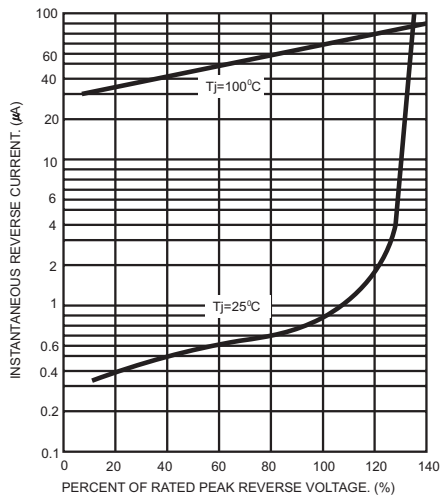


FIG.5- TYPICAL JUNCTION CAPACITANCE

