



# AR50 SERIES

## 50.0 AMPS. High Current Button Rectifiers

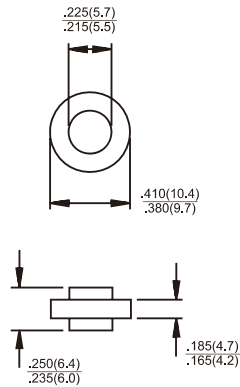
### Features

- ✧ 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
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

### Mechanical Data

- ✧ Case: Molded plastic case
- ✧ Terminals: Pure tin plated, lead free., solderable per MIL-STD-202, Method 208
- ✧ Polarity: Color ring denotes cathode
- ✧ Weight: 1.8 grams
- ✧ Mounting position: Any

#### AR



Dimensions in inches and (millimeters)

#### Marking Diagram



AR50X = Specific Device Code  
 G = Green Compound  
 Y = Year  
 M = Work Month

### 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	AR 50A	AR 50B	AR 50D	AR 50G	AR 50J	AR 50K	AR 50M	Units
Maximum Recurrent Peak Reverse Voltage	VRRM	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	VRMS	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	VDC	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 at @ T <sub>A</sub> =25°C	I <sub>R</sub>	5.0							uA
Rated DC Blocking Voltage(Note 1)@ T <sub>A</sub> =125°C		250							uA
Typical Reverse Recovery Time (Note 2)	T <sub>rr</sub>	3.0							uS
Typical Junction Capacitance (Note 4) T <sub>J</sub> =25°C	C <sub>j</sub>	300							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

- Notes: 1. Pulse Test with PW=300 usec, 1% Duty Cycle  
 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.  
 4. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

## RATINGS AND CHARACTERISTIC CURVES (AR50 SERIES)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

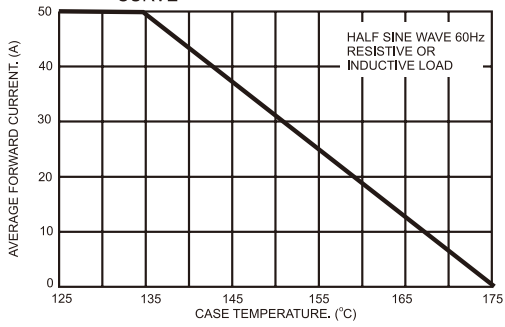


FIG.2- TYPICAL REVERSE CHARACTERISTICS

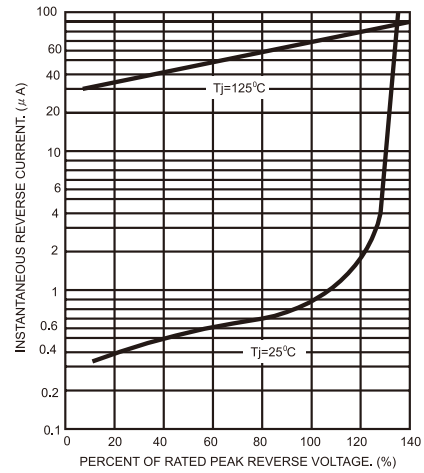


FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

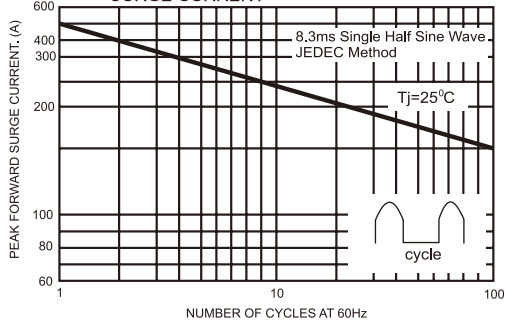


FIG.5- TYPICAL FORWARD CHARACTERISTICS

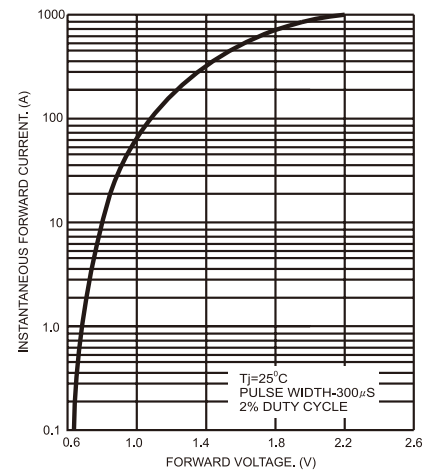


FIG.4- TYPICAL JUNCTION CAPACITANCE

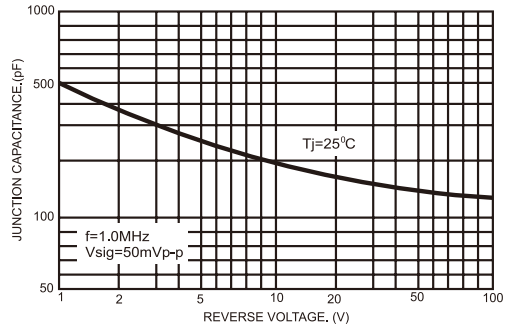


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

