



# PR1501/S - PR1505/S

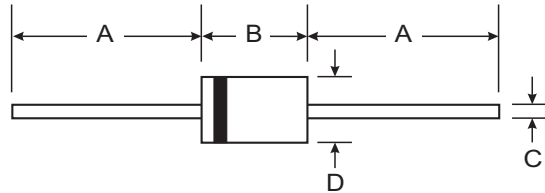
## 1.5A FAST RECOVERY RECTIFIER

### Features

- Diffused Junction
- Fast Switching for High Efficiency
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 50A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS Compliant (Note 4)**

### Mechanical Data

- Case: DO-41, DO-15
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Ordering Information: See Last Page
- Marking: Type Number
- DO-41 Weight: 0.3 grams (approximate)
- DO-15 Weight: 0.4 grams (approximate)



Dim	DO-41 Plastic		DO-15	
	Min	Max	Min	Max
A	25.40	—	25.40	—
B	4.06	5.21	5.50	7.62
C	0.71	0.864	0.686	0.889
D	2.00	2.72	2.60	3.60
All Dimensions in mm				

"S" Suffix Designates DO-41 Package  
No Suffix Designates DO-15 Package

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

Characteristic	Symbol	PR 1501/S	PR 1502/S	PR 1503/S	PR 1504/S	PR 1505/S	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	V
Average Rectified Output Current (Note 1) @ $T_A = 50^\circ\text{C}$	$I_O$	1.5					A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	50					A
Forward Voltage @ $I_F = 1.5\text{A}$	$V_{FM}$	1.2					V
Peak Reverse Current @ $T_A = 25^\circ\text{C}$ @ $T_A = 100^\circ\text{C}$	$I_{RM}$	5.0 100					$\mu\text{A}$
Reverse Recovery Time (Note 3)	$t_{rr}$	150				250	ns
Typical Junction Capacitance (Note 2)	$C_j$	20				10	pF
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	35					K/W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150					$^\circ\text{C}$

- Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $t_{rr} = 0.25\text{A}$ . See figure 5.
  4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

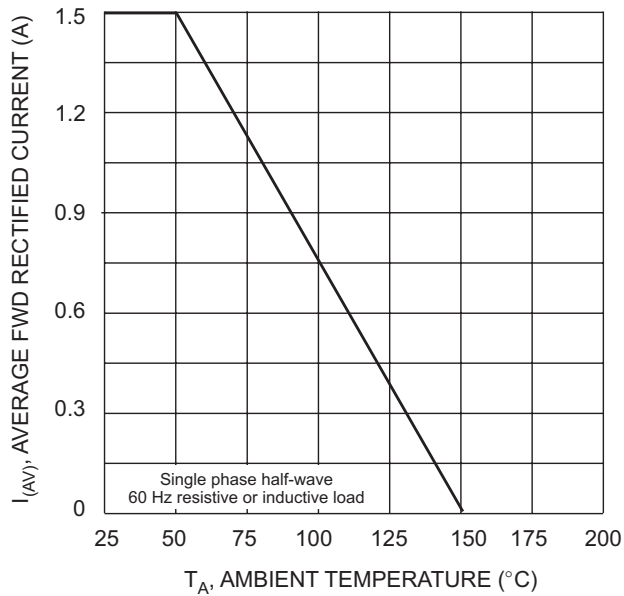


Fig. 1 Forward Derating Curve

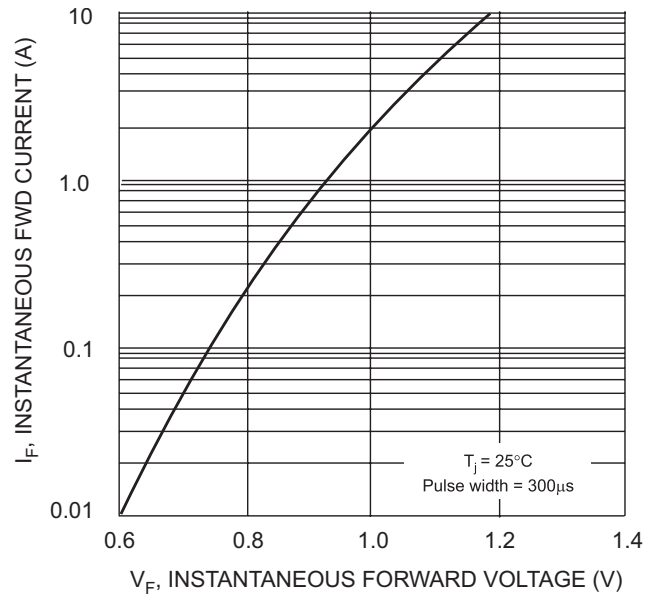


Fig. 2 Typical Forward Characteristics

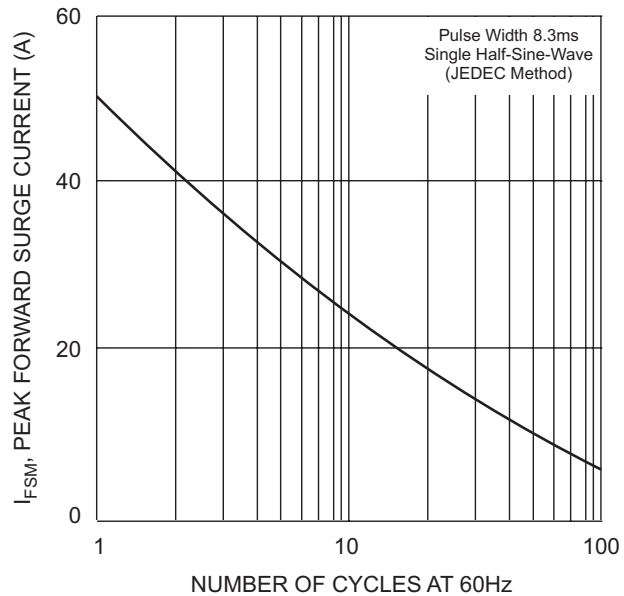


Fig. 3 Peak Forward Surge Current

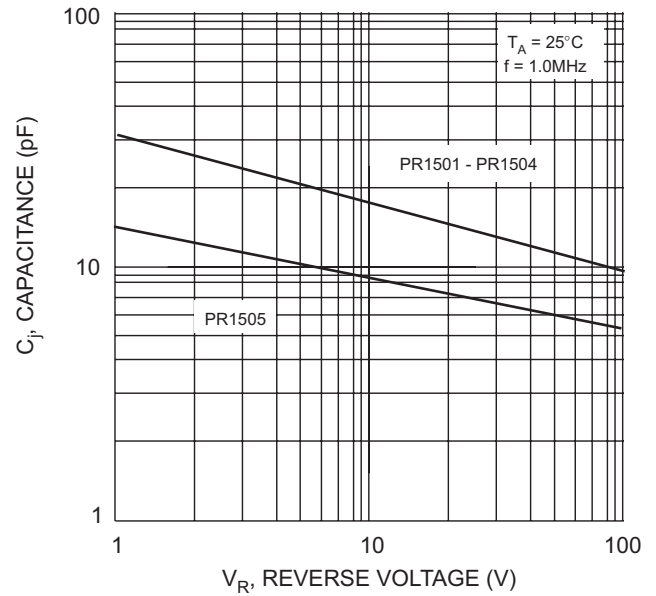
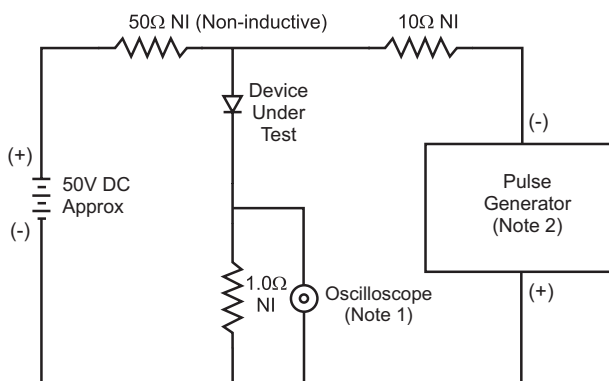
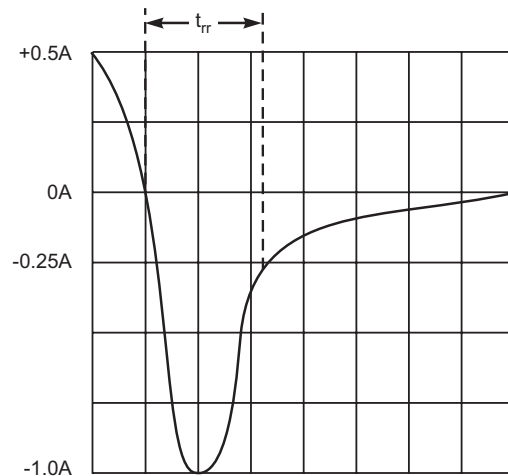


Fig. 4 Typical Junction Capacitance



Notes:

1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## Ordering Information (Note 5)

Device	Packaging	Shipping
PR1501S-A	DO-41	5K/Ammo Pack
PR1501S-B	DO-41	1K/Bulk
PR1501S-T	DO-41	5K/Tape & Reel, 13-inch
PR1502S-A	DO-41	5K/Ammo Pack
PR1502S-B	DO-41	1K/Bulk
PR1502S-T	DO-41	5K/Tape & Reel, 13-inch
PR1503S-A	DO-41	5K/Ammo Pack
PR1503S-B	DO-41	1K/Bulk
PR1503S-T	DO-41	5K/Tape & Reel, 13-inch
PR1504S-A	DO-41	5K/Ammo Pack
PR1504S-B	DO-41	1K/Bulk
PR1504S-T	DO-41	5K/Tape & Reel, 13-inch
PR1505S-A	DO-41	5K/Ammo Pack
PR1505S-B	DO-41	1K/Bulk
PR1505S-T	DO-41	5K/Tape & Reel, 13-inch
PR1501-B	DO-15	1K/Bulk
PR1501-T	DO-15	4K/Tape & Reel, 13-inch
PR1502-B	DO-15	1K/Bulk
PR1502-T	DO-15	4K/Tape & Reel, 13-inch
PR1503-B	DO-15	1K/Bulk
PR1503-T	DO-15	4K/Tape & Reel, 13-inch
PR1504-B	DO-15	1K/Bulk
PR1504-T	DO-15	4K/Tape & Reel, 13-inch
PR1505-B	DO-15	1K/Bulk
PR1505-T	DO-15	4K/Tape & Reel, 13-inch

Notes: 5. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>

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