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Stocking Distributor

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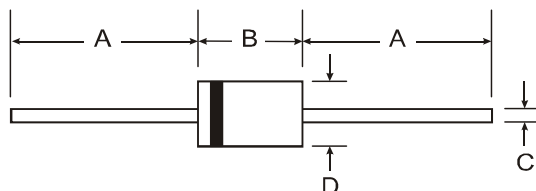
sales@integrated-circuit.com

PR1001 - PR1005

1.0A FAST RECOVERY RECTIFIER

Features

- Diffused Junction
- Fast Switching for High Efficiency
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 30A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS compliant (Note 4)**



Mechanical Data

- Case: DO-41
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish - Tin. Plated Leads Solderable per MIL-STD-202, Method 208 @3
- Polarity: Cathode Band
- Marking: Type Number
- Ordering Information: See Page 3
- Weight: 0.35 grams (approximate)

Dim	DO-41 Plastic	
	Min	Max
A	25.40	—
B	4.06	5.21
C	0.71	0.864
D	2.00	2.72
All Dimensions in mm		

Maximum Ratings and Electrical Characteristics

@T_A = 25°C unless otherwise specified

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

Characteristic	Symbol	PR1001	PR1002	PR1003	PR1004	PR1005	Unit
Peak Repetitive Reverse Voltage	V _{RRM}						
Working Peak Reverse Voltage	V _{RWM}	50	100	200	400	600	V
DC Blocking Voltage (Note 5)	V _R						
RMS Reverse Voltage	V _{R(RMS)}	35	70	140	280	420	V
Average Rectified Output Current (Note 1) @ T _A = 75°C	I _O	1.0					A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	30					A
Forward Voltage Drop @ I _F = 1.0A	V _{FM}	1.2					V
Peak Reverse Current @ T _A = 25°C at Rated DC Blocking Voltage (Note 5) @ T _A = 100°C	I _{RM}	5.0 100					μA
Reverse Recovery Time (Note 3)	t _{rr}	150				250	ns
Typical Total Capacitance (Note 2)	C _T	15				8.0	pF
Typical Thermal Resistance Junction to Ambient	R _{θJA}	75					°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150					°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 = 0.5A, I_R = 1A, I_{rr} = 0.25A. See figure 5.
 4. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
 5. Short duration pulse test used to minimize self-heating effect.

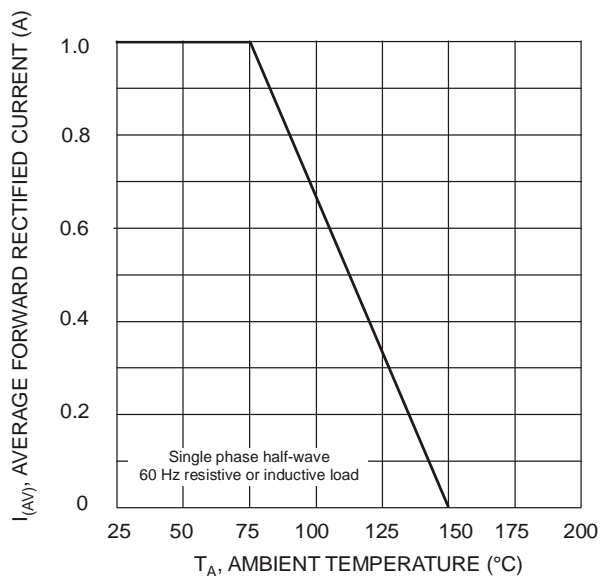


Fig. 1 Forward Derating Curve

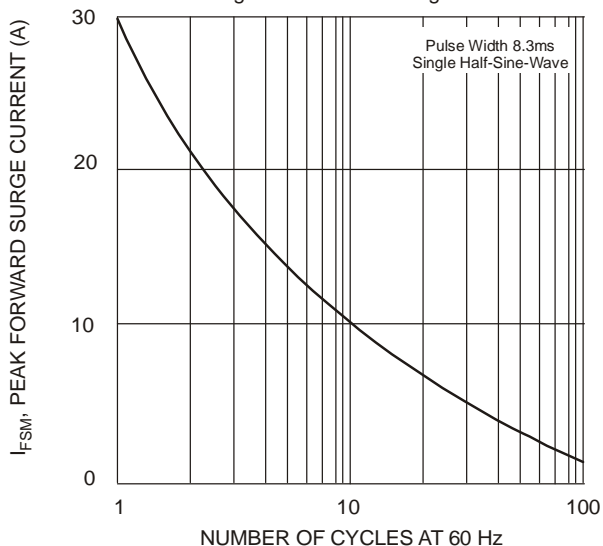


Fig. 3 Peak Forward Surge Current

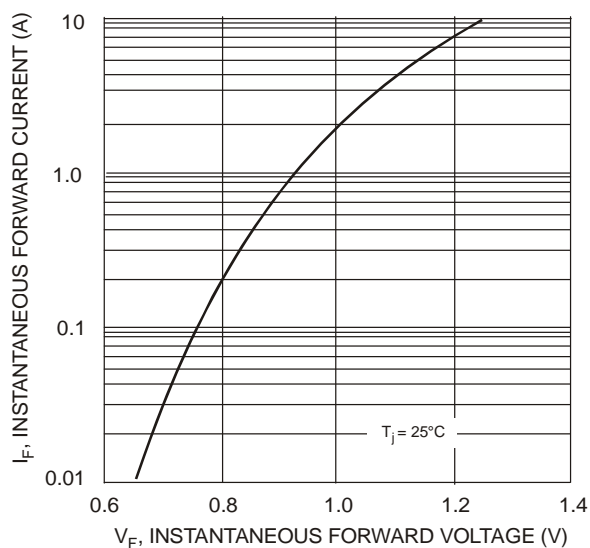


Fig. 2 Typical Forward Characteristics

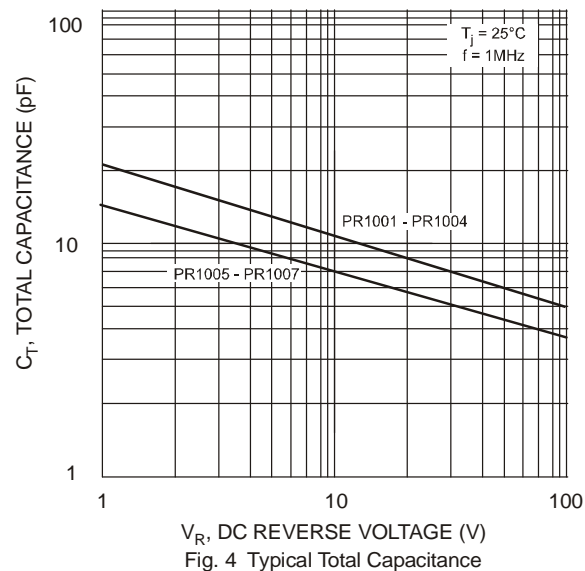
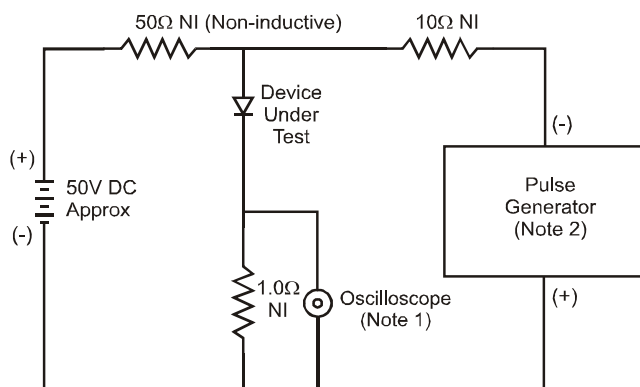


Fig. 4 Typical Total Capacitance



Notes:

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

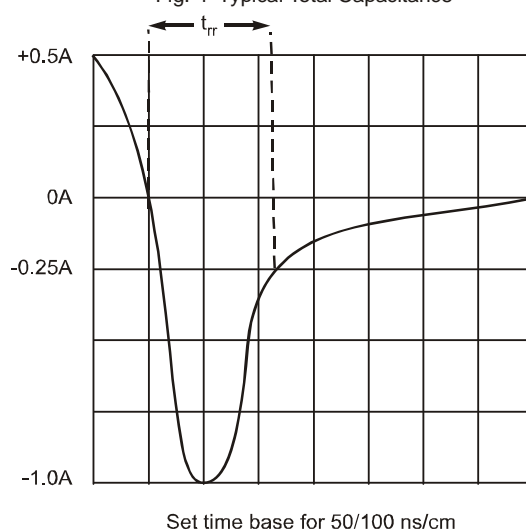


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit



Ordering Information (Note 6)

Device	Packaging	Shipping
PR1001-T	DO-41	5K/Tape & Reel, 13-inch
PR1002-T	DO-41	5K/Tape & Reel, 13-inch
PR1003-T	DO-41	5K/Tape & Reel, 13-inch
PR1004-T	DO-41	5K/Tape & Reel, 13-inch
PR1005-T	DO-41	5K/Tape & Reel, 13-inch

Notes: 6. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

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