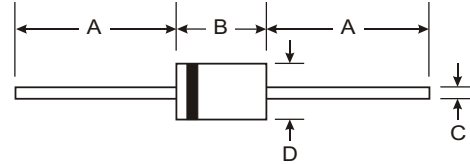


# MUR120

## 1.0A SUPER-FAST RECTIFIER

### Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 35A Peak
- Ideally Suited for Automated Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0



### Mechanical Data

- Case: Molded Plastic
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Marking: R120
- Polarity: Cathode Band
- Weight: 0.35 grams (approx.)
- Mounting Position: Any

DO-41 Plastic		
Dim	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

@  $T_A = 25^\circ\text{C}$  unless otherwise specified

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

Characteristic	Symbol	MUR120	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	141	V
Average Rectified Output Current @ $T_J = 130^\circ\text{C}$	$I_O$	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	35	A
Forward Voltage @ $I_F = 1.0\text{A}$ , $T_J = 25^\circ\text{C}$ @ $I_F = 1.0\text{A}$ , $T_J = 150^\circ\text{C}$	$V_{FM}$	0.875 0.710	V
Peak Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 150^\circ\text{C}$	$I_{RM}$	2.0 50	$\mu\text{A}$
Reverse Recovery Time (Note 2)	$t_{rr}$	25	ns
Forward Recovery Time (Note 3)	$t_{fr}$	25	ns
Typical Junction Capacitance (Note 1)	$C_j$	45	pF
Typical Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	72	K/W
Operating and Storage Temperature Range	$T_J$ , $T_{STG}$	-65 to +175	$^\circ\text{C}$

- Notes:
1. Measured at 1.0MHz and applied reverse voltage of 0V DC.
  2. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ . See Figure 5.
  3. Measured with  $I_F = 1.0\text{A}$ ,  $di/dt = 100\text{A}/\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

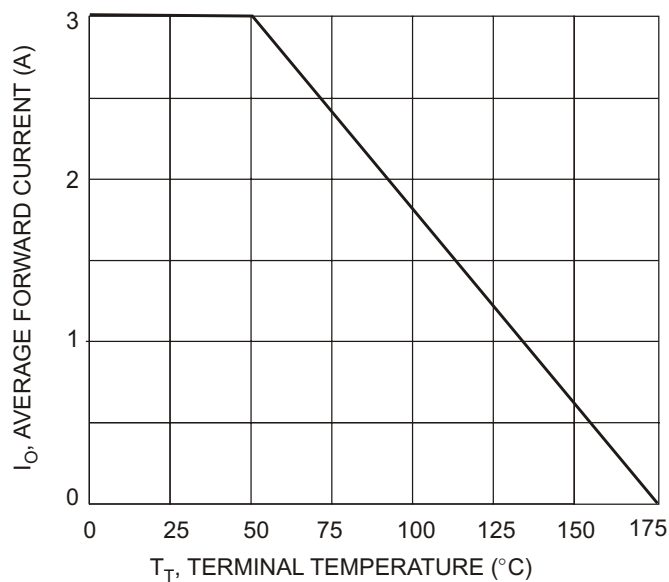


Fig. 1 Forward Current Derating Curve

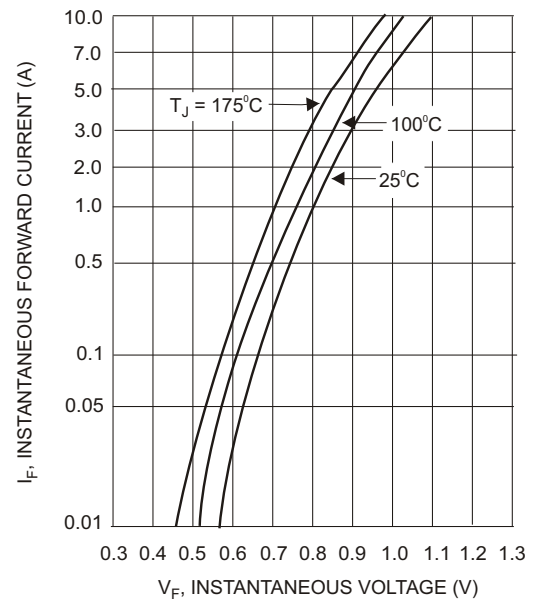


Fig. 2 Typical Forward Characteristics

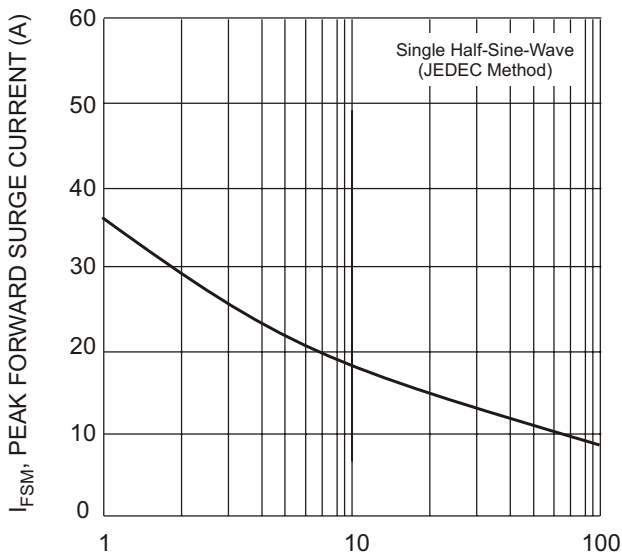


Fig. 3 Surge Current Derating Curve

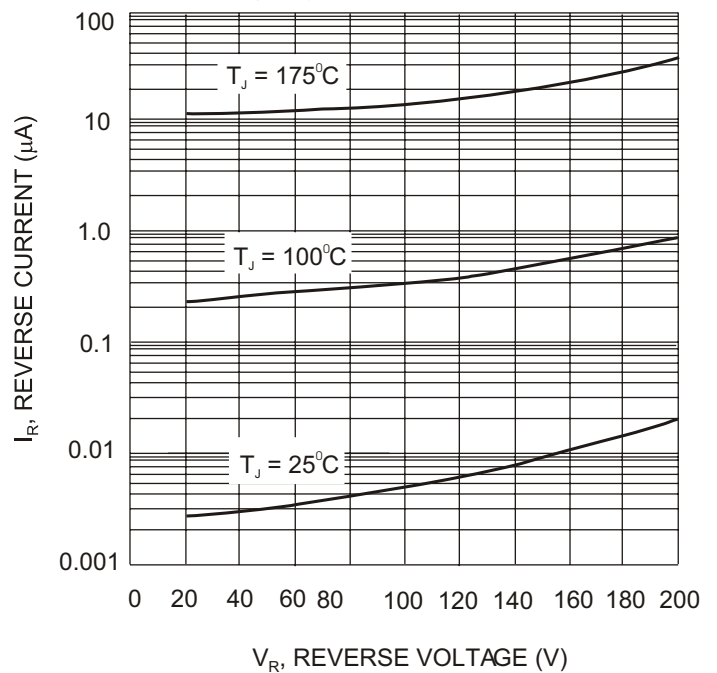
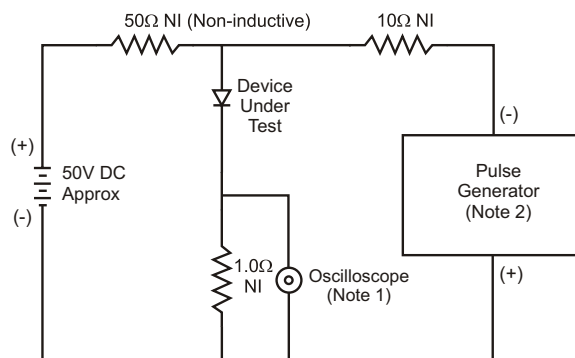


Fig. 4 Typical Reverse Characteristics



- Notes:  
 1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.  
 2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

