

# SCANSWITCH™ Power Rectifier

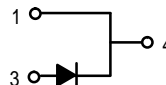
## For High and Very High Resolution Monitors

This state-of-the-art power rectifier is specifically designed for use as a damper diode in horizontal deflection circuits for high and very high resolution monitors. In these applications, the outstanding performance of the MUR10120E is fully realized when paired with either the MJH16206 or MJF16206 monitor specific, 1200 volt bipolar power transistor.

- 1200 Volt Blocking Voltage
- 20 mJ Avalanche Energy (Guaranteed)
- 12 Volt (Typical) Peak Transient Overshoot Voltage
- 135 ns (Typical) Forward Recovery Time

### Mechanical Characteristics:

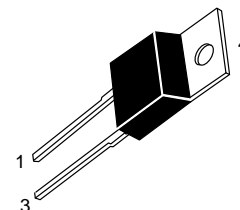
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: U10120E



**MUR10120E**

Motorola Preferred Device

**SCANSWITCH  
RECTIFIER  
10 AMPERES  
1200 VOLTS**



**CASE 221B-03  
(TO-220AC)  
STYLE 1**

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	1200	Volts
Average Rectified Forward Current (Rated $V_R$ ) $T_C = 125^\circ\text{C}$	$I_{F(AV)}$	10	Amps
Peak Repetitive Forward Current, Per Leg (Rated $V_R$ , Square Wave, 20 kHz) $T_C = 125^\circ\text{C}$	$I_{FRM}$	20	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	$I_{FSM}$	100	Amps
Operating Junction Temperature	$T_J$	-65 to +125	$^\circ\text{C}$
Controlled Avalanche Energy	$W_{AVAL}$	20	mJ

### THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$
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(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

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**Preferred** devices are Motorola recommended choices for future use and best overall value.

# MUR10120E

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (1) ( $i_F = 6.5$ Amps, $T_J = 125^\circ\text{C}$ ) ( $i_F = 6.5$ Amps, $T_J = 25^\circ\text{C}$ )	$v_F$	1.7 1.9	2.0 2.2	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 125^\circ\text{C}$ )	$i_R$	25 750	100 1000	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1.0$ A, $di/dt = 50$ Amps/ $\mu\text{s}$ )	$t_{rr}$	150	175	ns
Maximum Forward Recovery Time $I_F = 6.5$ Amps, $di/dt = 12$ Amps/ $\mu\text{s}$ (As Measured on a Deflection Circuit)	$t_{fr}$	135	175	ns
Peak Transient Overshoot Voltage	$V_{RFM}$	12	14	Volts

(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

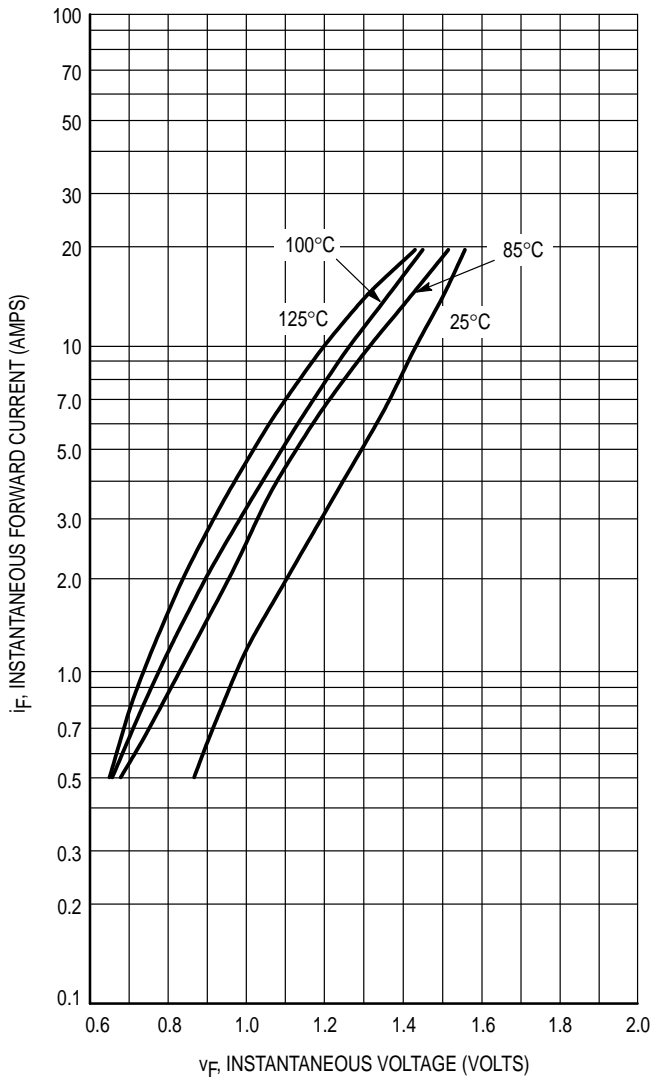


Figure 1. Typical Forward Voltage

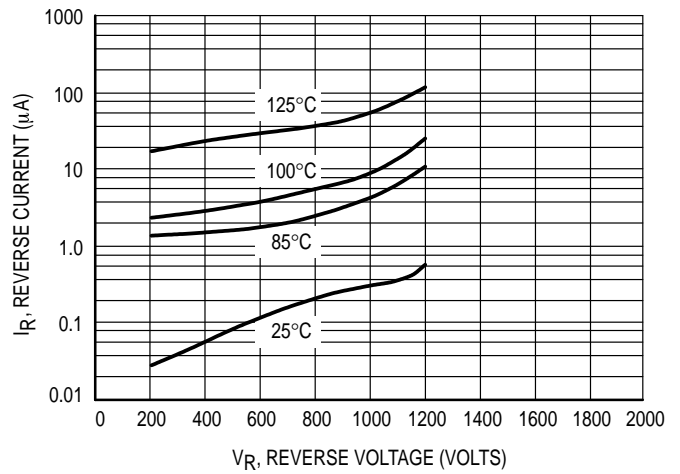


Figure 2. Typical Reverse Current

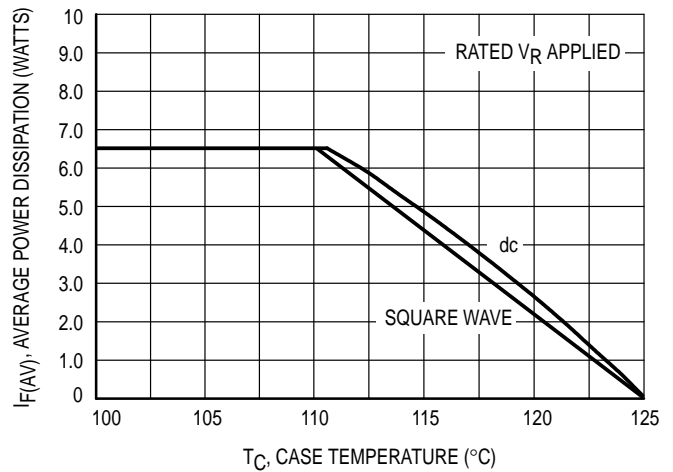


Figure 3. Current Derating, Case

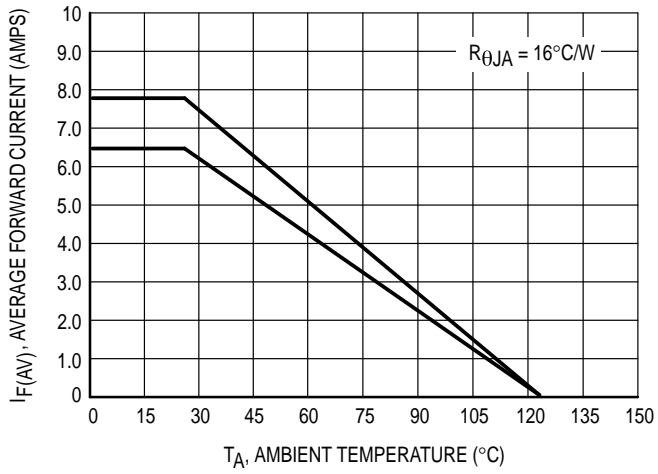


Figure 4. Current Derating, Ambient

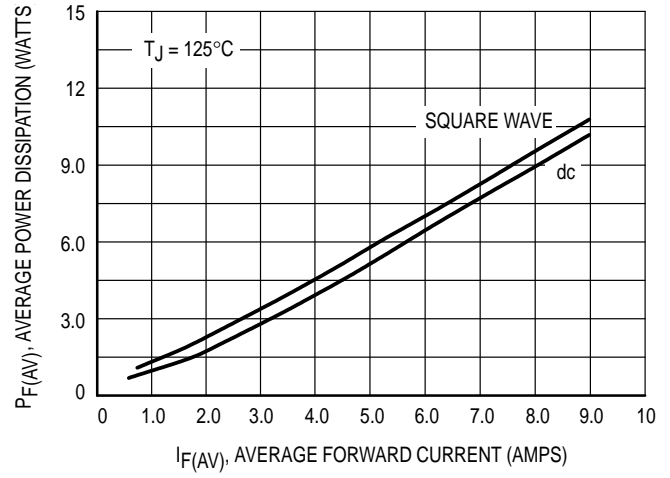


Figure 5. Power Dissipation

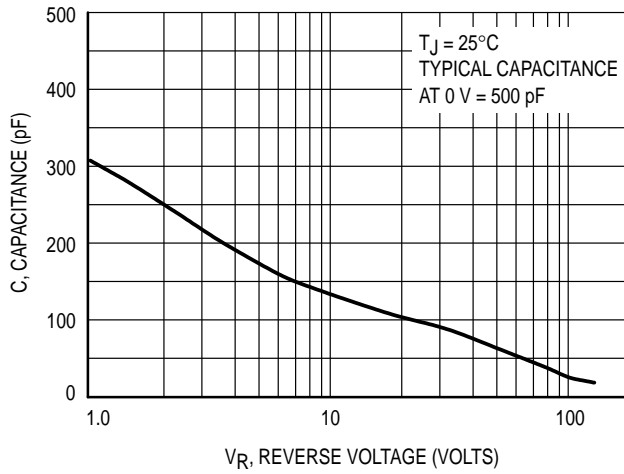
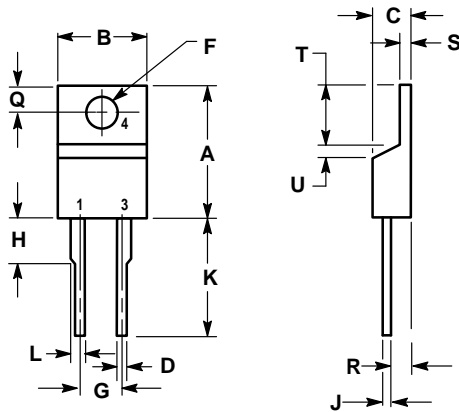


Figure 6. Typical Capacitance

PACKAGE DIMENSIONS




- NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.595	0.620	15.11	15.75
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.82
D	0.025	0.035	0.64	0.89
F	0.142	0.147	3.61	3.73
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.14	1.52
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.14	1.39
T	0.235	0.255	5.97	6.48
U	0.000	0.050	0.000	1.27

- STYLE 1:  
 PIN 1. CATHODE  
 2. N/A  
 3. ANODE  
 4. CATHODE

CASE 221B-03  
 ISSUE B

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