

# MUR5150E

Preferred Device

## SCANSWITCH™ Power Rectifier

### For Use As A Damper Diode In High and Very High Resolution Monitors

The MUR5150E is a state-of-the-art Ultrafast Power Rectifier 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 MUR5150E is fully realized when paired with the appropriate 1500 V SCANSWITCH Bipolar Power Transistor.

- 1500 V Blocking Voltage
- 20 mJoules Avalanche Energy Guaranteed
- Peak Transient Overshoot Voltage Specified, 17 Volts (typical)
- Forward Recovery Time Specified, 175 ns (typical)
- Epoxy Meets UL94, V<sub>O</sub> at 1/8"

#### 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: U5150E

#### MAXIMUM RATINGS

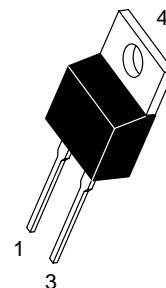
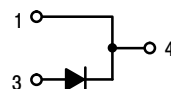
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	1500	V
Average Rectified Forward Current (Rated V <sub>R</sub> , T <sub>C</sub> = 100°C)	I <sub>F(AV)</sub>	5.0	A
Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20 kHz, T <sub>C</sub> = 100°C) Per Leg	I <sub>FRM</sub>	10	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I <sub>FSM</sub>	100	A
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +125	°C
Controlled Avalanche Energy	W <sub>AVAIL</sub>	20	mJ



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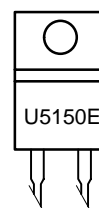
<http://onsemi.com>

### SCANSWITCH RECTIFIER 5.0 AMPERES 1500 VOLTS



TO-220AC  
CASE 221B  
STYLE 1

#### MARKING DIAGRAM



U5150E = Device Code

#### ORDERING INFORMATION

Device	Package	Shipping
MUR5150E	TO-220	50 Units/Rail

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

# MUR5150E

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 1.) ( $i_F = 2.0$ Amps, $T_J = 25^{\circ}C$ ) ( $i_F = 5.0$ Amps, $T_J = 25^{\circ}C$ )	$V_F$	1.7 2.0	2.0 2.4	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_J = 125^{\circ}C$ ) (Rated dc Voltage, $T_J = 25^{\circ}C$ )	$i_R$	100 10	500 50	$\mu A$
Maximum Reverse Recovery Time ( $I_F = 1.0$ Amps, $di/dt = 50$ Amps/ $\mu s$ )	$t_{rr}$	130	175	ns
Maximum Forward Recovery Time ( $I_F = 6.5$ Amps, $di/dt = 12$ Amps/ $\mu s$ )	$t_{fr}$	175	225	ns
Peak Transient Overshoot Voltage	$V_{RFM}$	17	20	Volts

1. Pulse Test: Pulse Width = 300  $\mu s$ , Duty Cycle  $\leq 2.0\%$

## TYPICAL ELECTRICAL CHARACTERISTICS

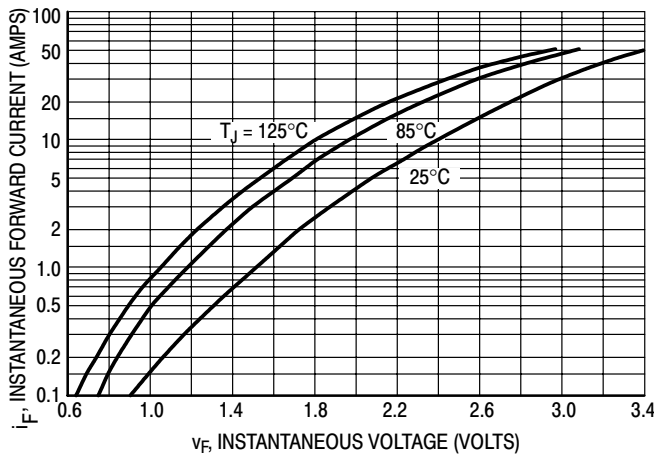


Figure 1. Typical Forward Voltage

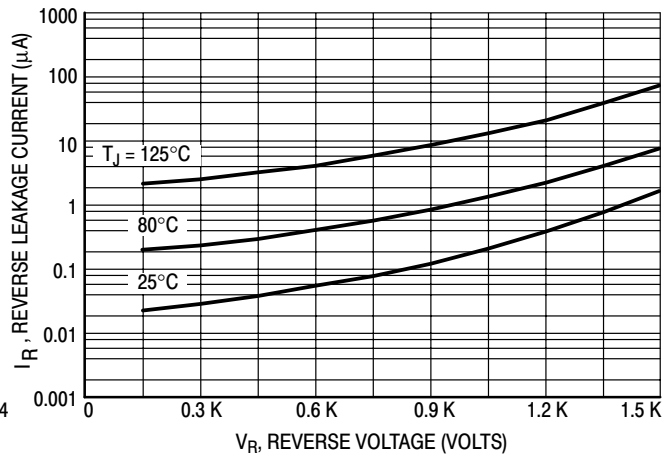


Figure 2. Typical Reverse Leakage Current

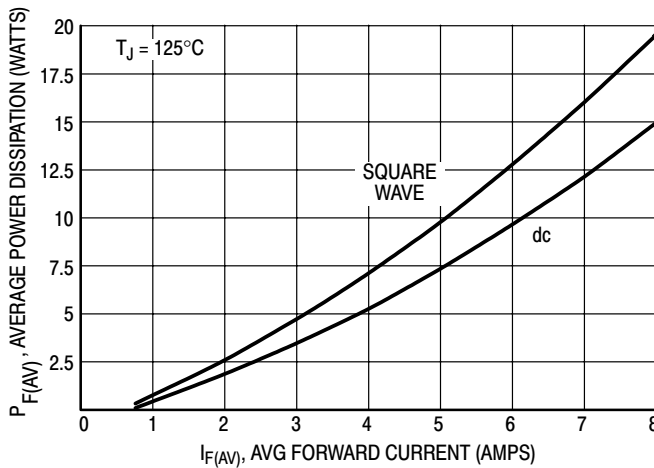


Figure 3. Forward Power Dissipation

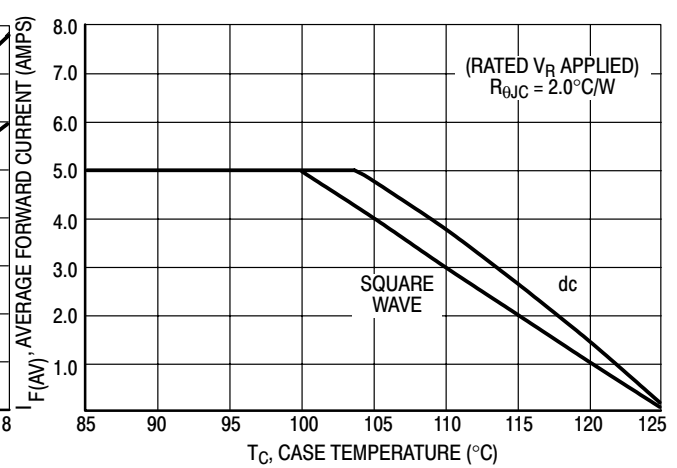


Figure 4. Current Derating Case

# MUR5150E

## TYPICAL ELECTRICAL CHARACTERISTICS

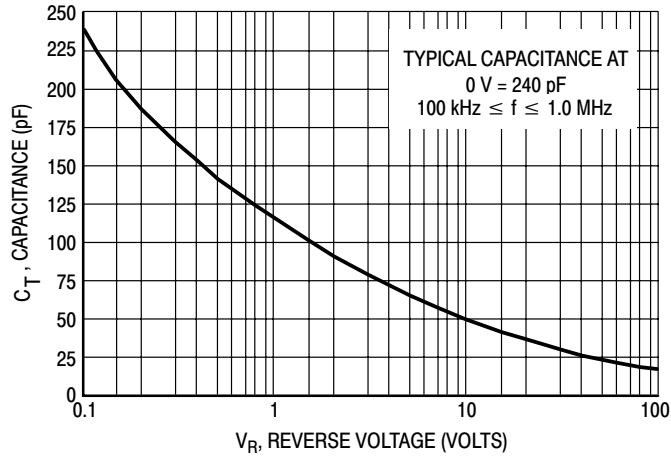


Figure 5. Typical Capacitance

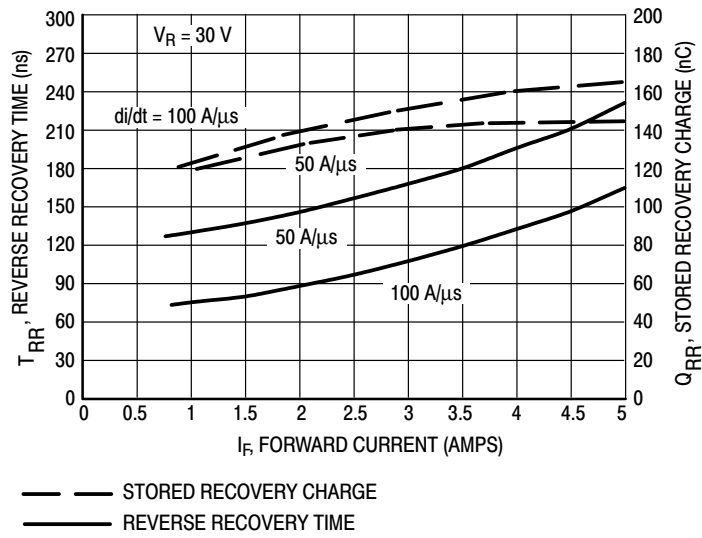
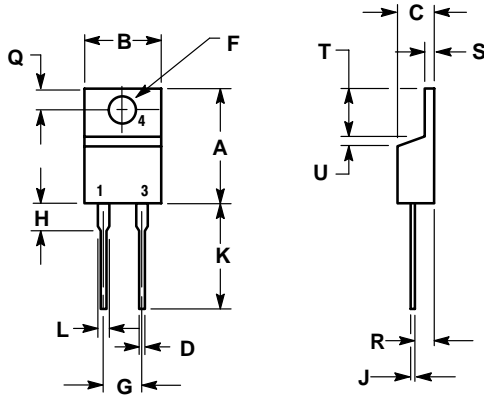


Figure 6. Typical Reverse Switching Characteristics

# MUR5150E

## PACKAGE DIMENSIONS

### TO-220 TWO-LEAD CASE 221B-04 ISSUE D



#### 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
- N/A
- ANODE
- CATHODE

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