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_O 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

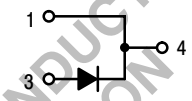
MAXIMUM RATINGS

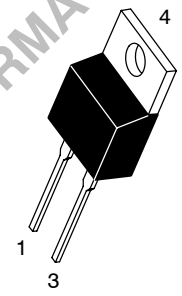
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1500	V
Average Rectified Forward Current (Rated V_R, T_C = 100°C)	$I_{F(AV)}$	5.0	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_C = 100°C) Per Leg	I_{FRM}	10	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	100	A
Operating Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +125	°C
Controlled Avalanche Energy	W_{AVAL}	20	mJ

ON Semiconductor™

http://onsemi.com

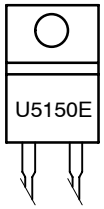
SCANSWITCH RECTIFIER 5.0 AMPERES 1500 VOLTS





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.

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

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

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%

TYPICAL ELECTRICAL CHARACTERISTICS

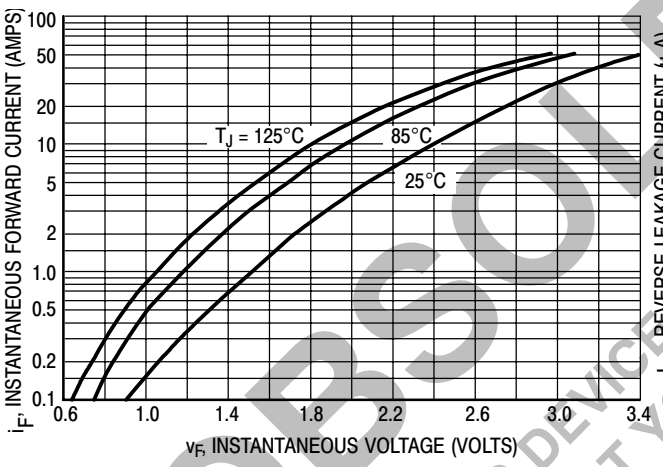


Figure 1. Typical Forward Voltage

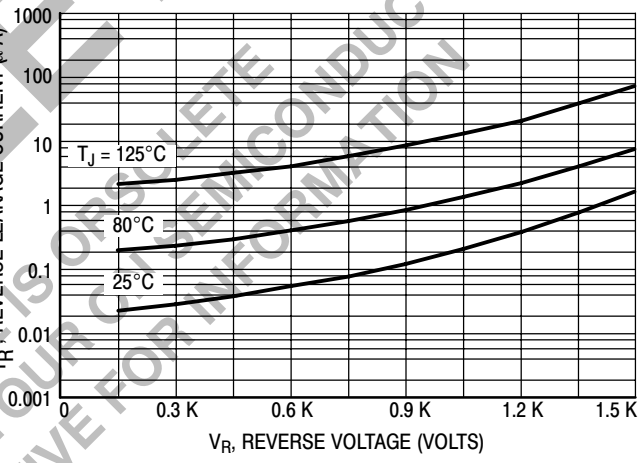


Figure 2. Typical Reverse Leakage Current

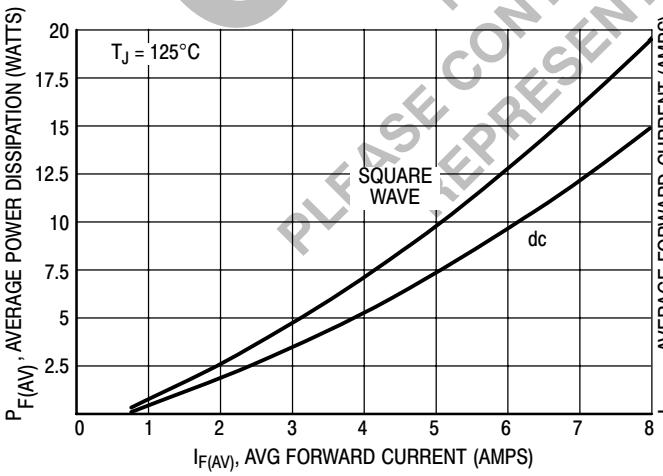


Figure 3. Forward Power Dissipation

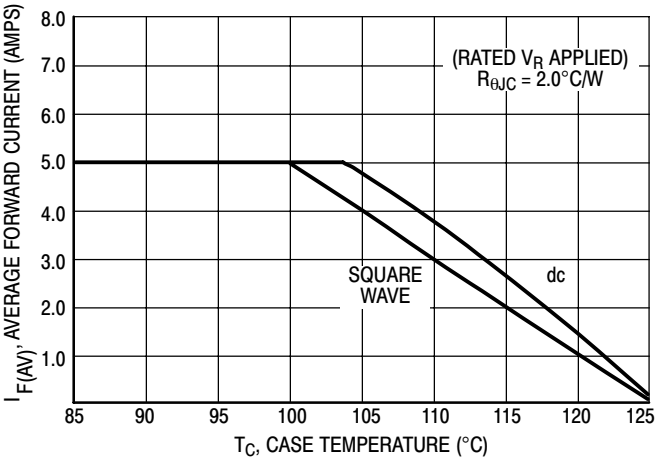


Figure 4. Current Derating Case

TYPICAL ELECTRICAL CHARACTERISTICS

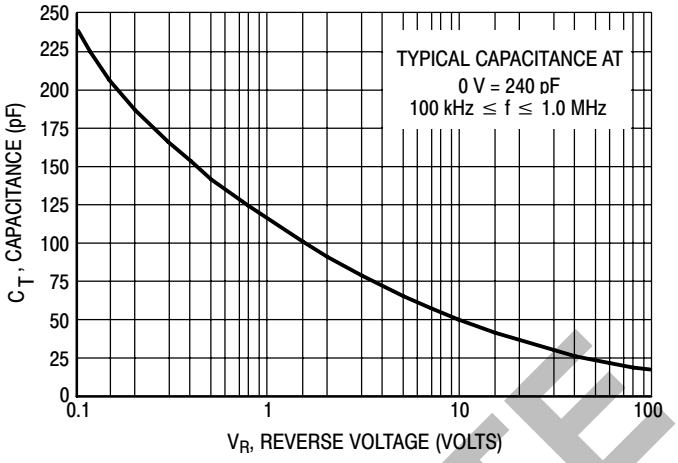


Figure 5. Typical Capacitance

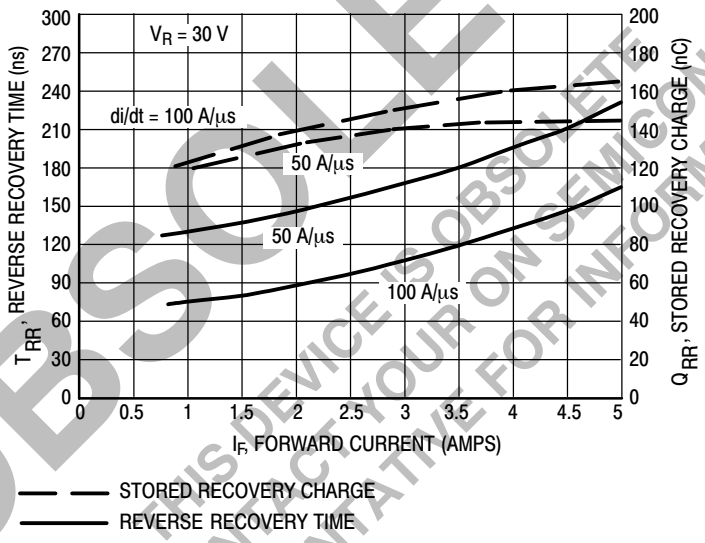
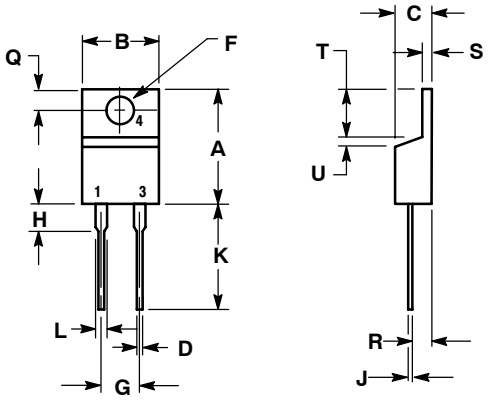


Figure 6. Typical Reverse Switching Characteristics

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.

	INCHES		MILLIMETERS	
DIM	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

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PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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MUR5150E/D