

# Designer's™ Data Sheet

## SCANSWITCH™ Power Rectifier

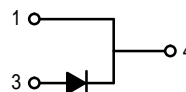
### For Use As A Damper Diode In High and Very High Resolution Monitors

The MUR10150E is a state-of-the-art 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 MUR10150E is fully realized when paired with either the MJW16212 or MJF16212 monitor specific, 1500 V bipolar power transistor.

- 1500 V Blocking Voltage
- 20 mJ Avalanche Energy Guaranteed
- Peak Transient Overshoot Voltage Specified, 14 Volts (typical)
- Forward Recovery Time Specified, 135 ns (typical)
- Epoxy Meets UL94, V<sub>0</sub> at 1/8"

#### Mechanical Characteristics

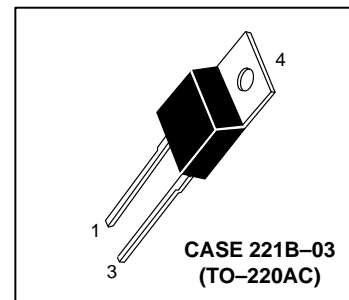
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: U10150E



**MUR10150E**

Motorola Preferred Device

**SCANSWITCH  
RECTIFIER  
10 AMPERES  
1500 VOLTS**



#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	1500	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 and Storage Temperature	$T_J, T_{stg}$	-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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#### 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	2.2 2.4	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, $T_J = 125^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	750 25	1000 100	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1.0$ Amp, $di/dt = 50$ Amps/ $\mu\text{s}$ )	$t_{rr}$	150	175	ns
Maximum Forward Recovery Time ( $I_F = 6.5$ Amps, $di/dt = 12$ Amps/ $\mu\text{s}$ )	$t_{fr}$	135	175	ns
Peak Transient Overshoot Voltage	$V_{RFM}$	14	16	Volts

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

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**Designer's Data for "Worst Case" Conditions** — The Designer's Data Sheet permits the design of most circuits entirely from the information presented. SOA Limit curves — representing boundaries on device characteristics — are given to facilitate "worst case" design.

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



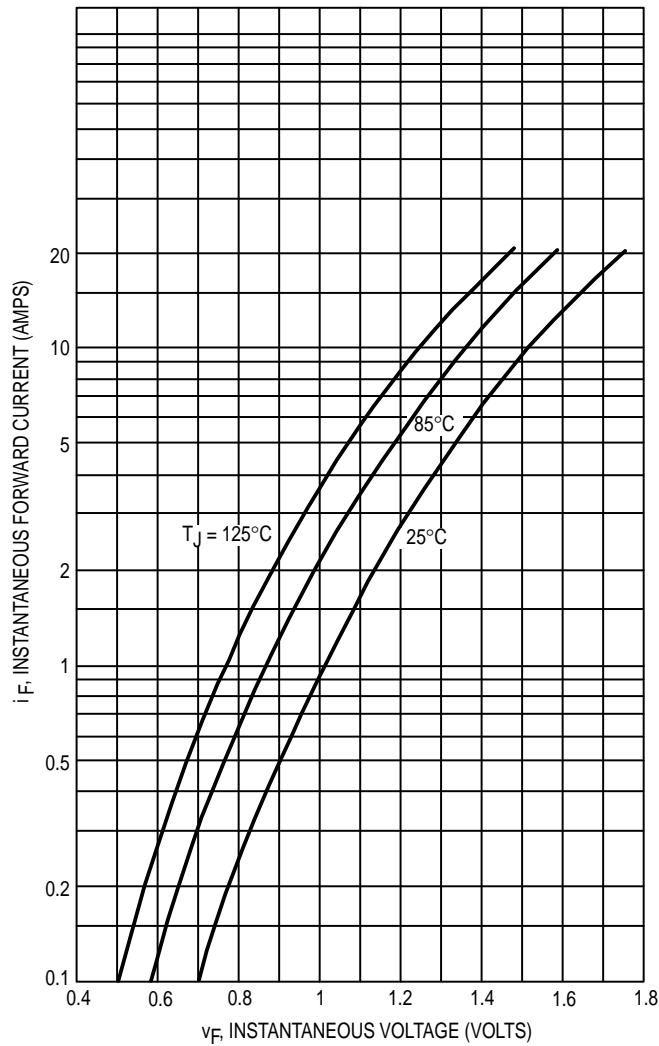


Figure 1. Typical Forward Voltage

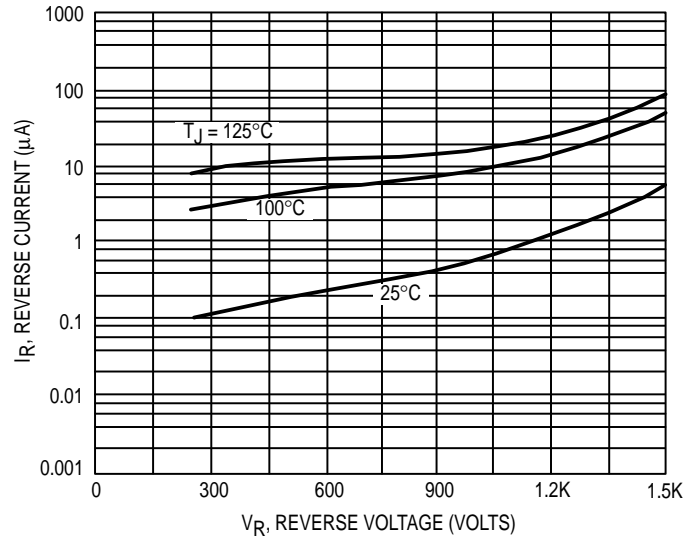


Figure 2. Typical Reverse Current

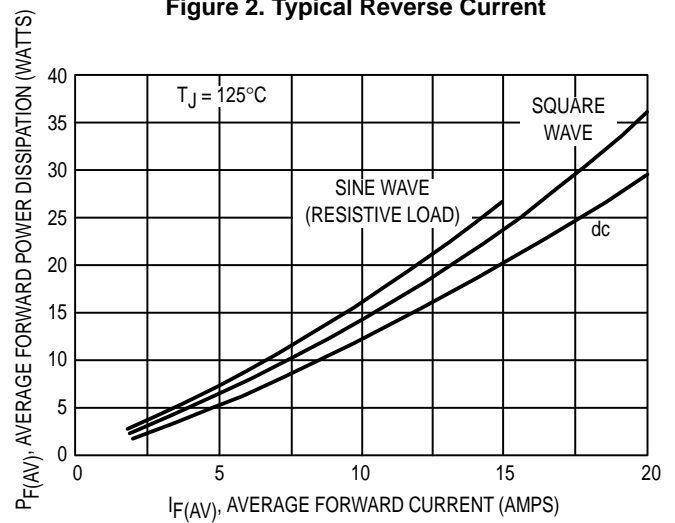


Figure 3. Forward Power Dissipation

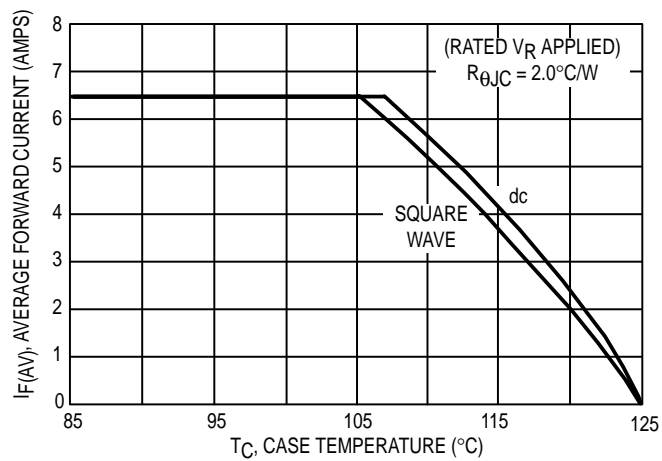


Figure 4. Current Derating Case

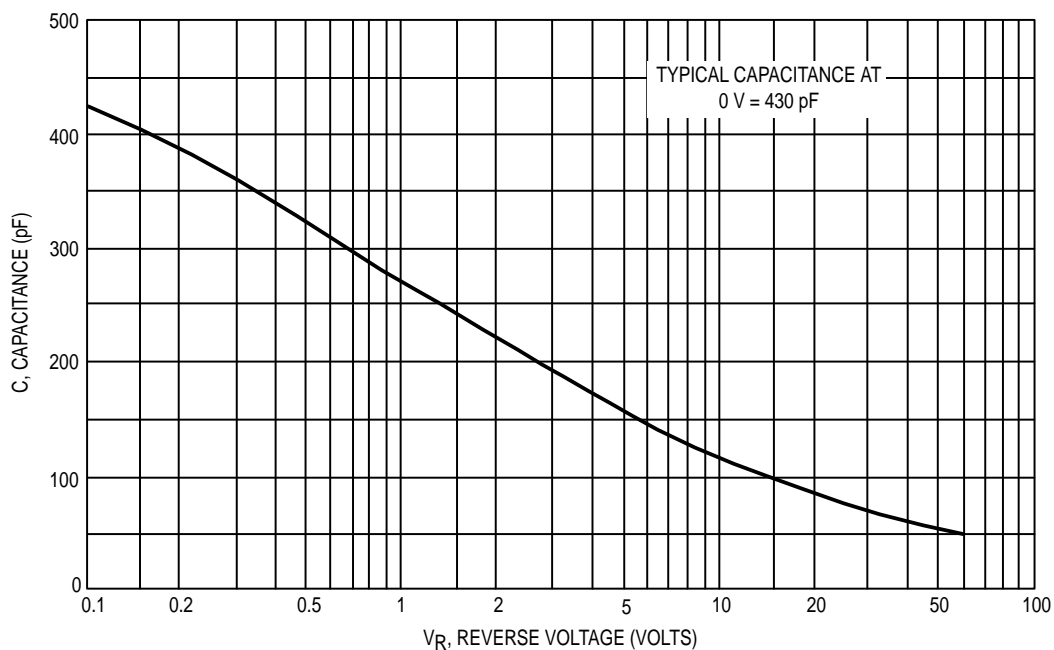


Figure 5. Typical Capacitance

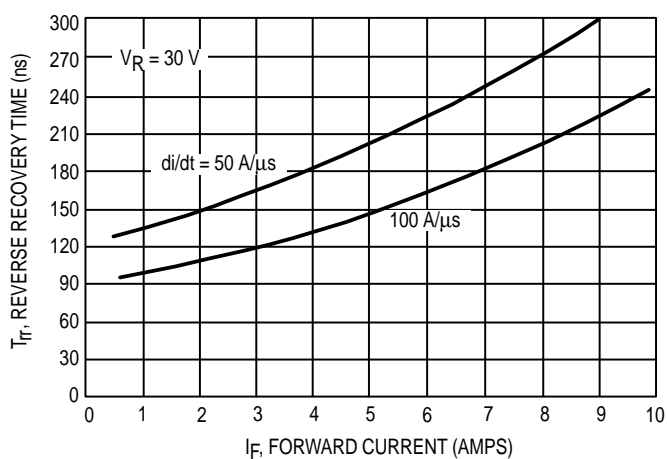


Figure 6. Typical Reverse Recovery Time

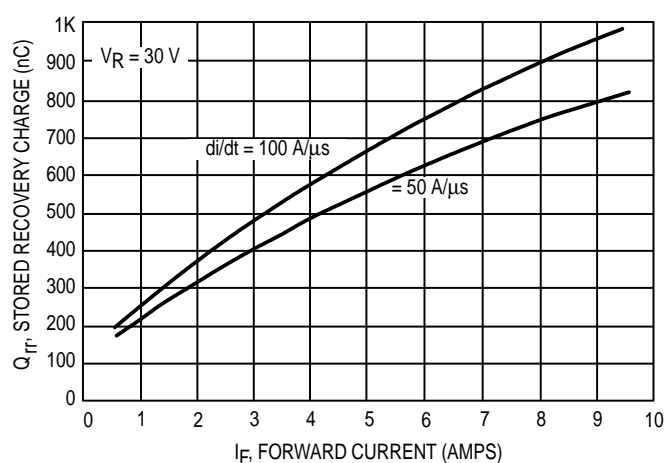
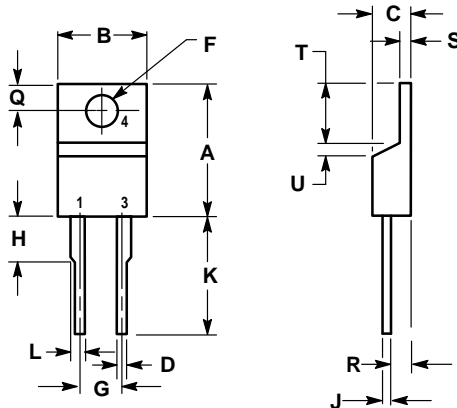


Figure 7. Typical Stored Recovery Charge

## 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:

1. CATHODE
2. N/A
3. ANODE
4. CATHODE

**CASE 221B-03  
(TO-220AC)  
ISSUE B**

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