

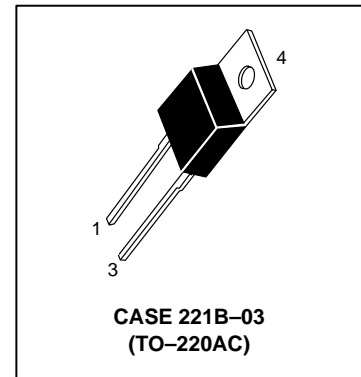
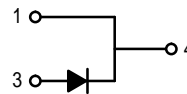
Designer's™ Data Sheet
SCANSWITCH™ Power Rectifier
For Use As A Damper Diode
In High and Very High Resolution Monitors

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 1500V 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	Volts
Average Rectified Forward Current, (Rated V_R), $T_C = 100^\circ\text{C}$	$I_F(AV)$	5.0	Amps
Peak Repetitive Forward Current, Per Leg (Rated V_R , Square Wave, 20 kHz), $T_C = 100^\circ\text{C}$	I_{FRM}	10	Amps
Non-Repetitive 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	°C
Controlled Avalanche Energy	W_{AVAL}	20	mJ

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	°C/W
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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.

MUR5150E

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (1) ($i_F = 2.0$ Amps, $T_J = 25^\circ\text{C}$) ($i_F = 5.0$ Amps, $T_J = 25^\circ\text{C}$)	V_F	1.7 2.0	2.0 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	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 $\leq 2.0\%$

TYPICAL ELECTRICAL CHARACTERISTICS

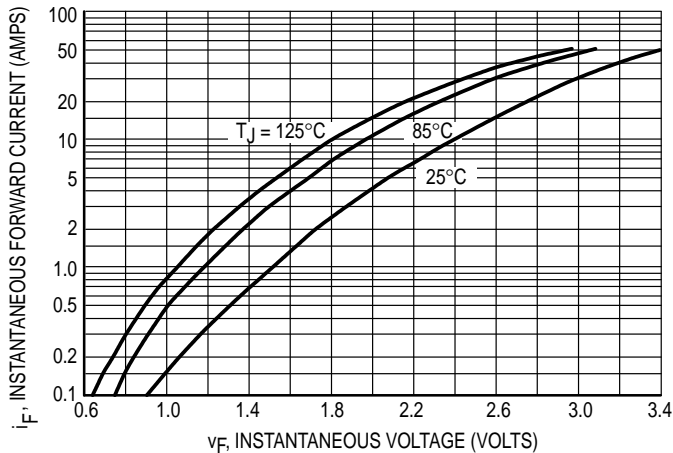


Figure 1. Typical Forward Voltage

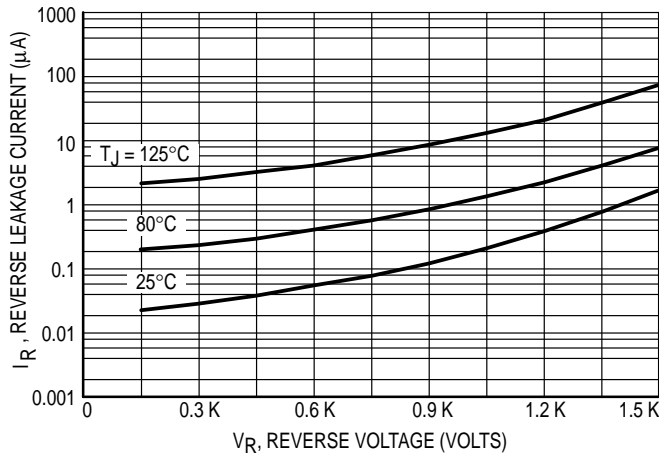


Figure 2. Typical Reverse Leakage Current

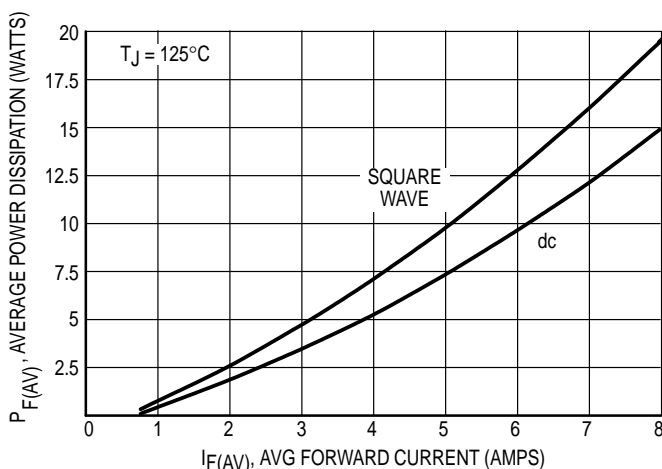


Figure 3. Forward Power Dissipation

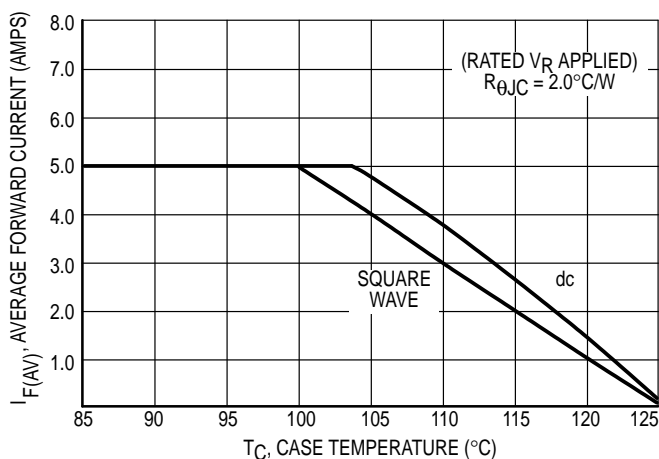


Figure 4. Current Derating Case

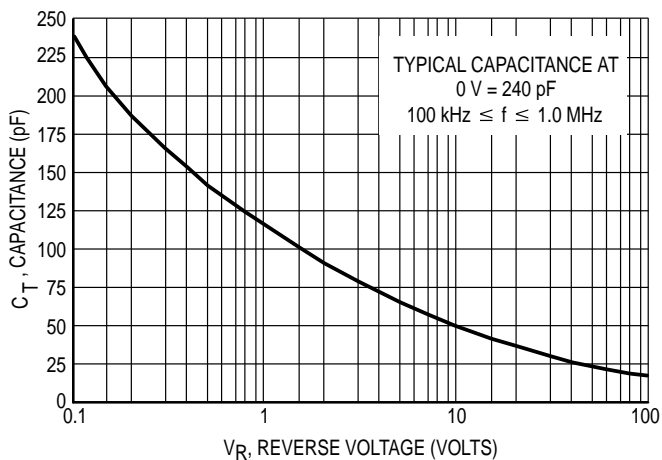


Figure 5. Typical Capacitance

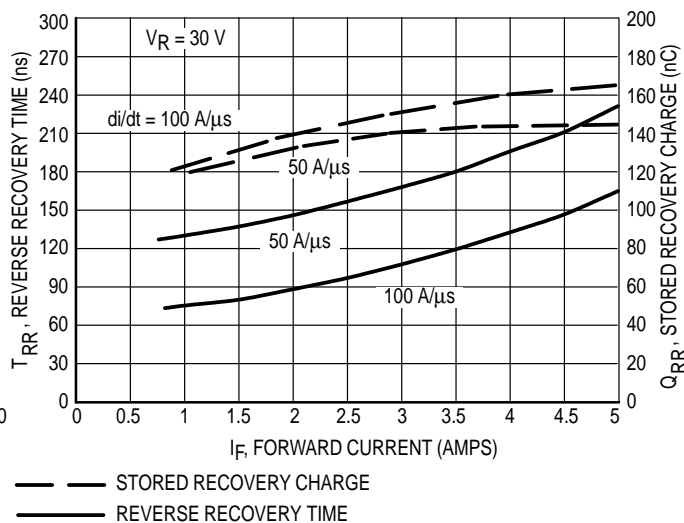
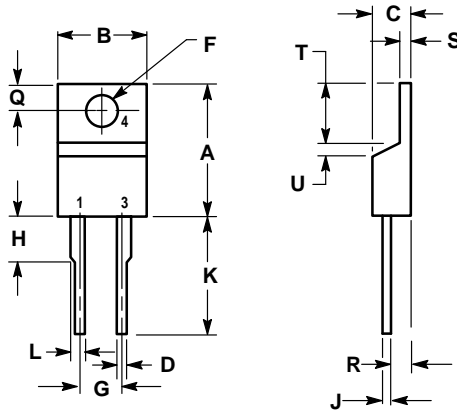


Figure 6. Typical Reverse Switching Characteristics

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
 (TO-220AC)
 ISSUE B

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