

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, V₀ 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

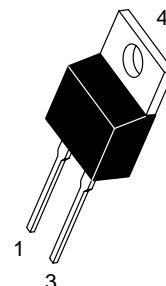
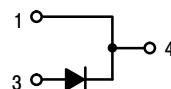
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1500	V
Average Rectified Forward Current (Rated V_R , $T_C = 100^\circ\text{C}$)	$I_{F(AV)}$	5.0	A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 100^\circ\text{C}$) 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_{AVAIL}	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.

MUR5150E

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 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 (Note 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

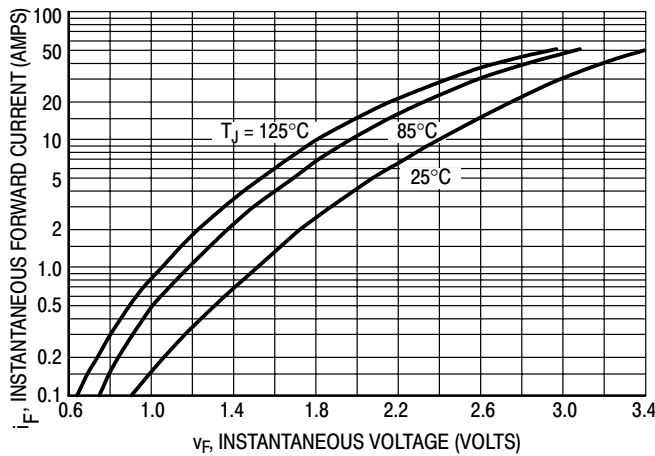


Figure 1. Typical Forward Voltage

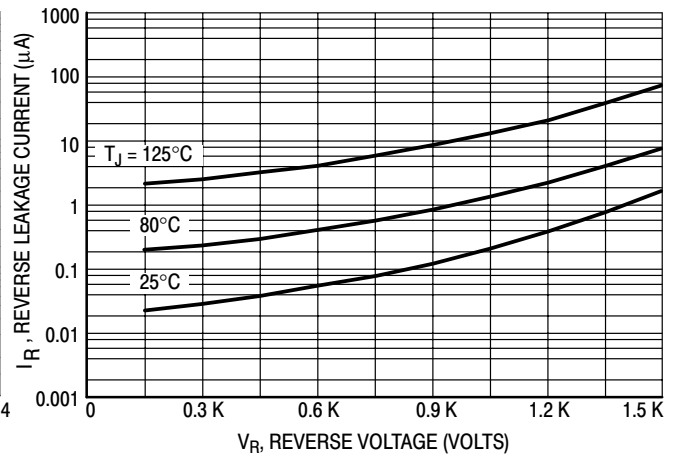


Figure 2. Typical Reverse Leakage Current

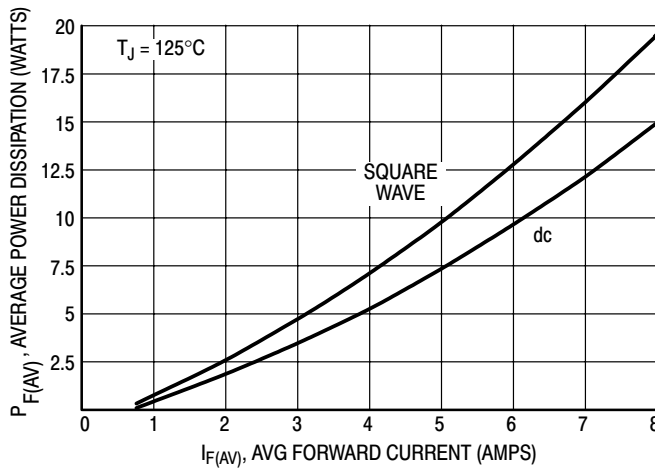


Figure 3. Forward Power Dissipation

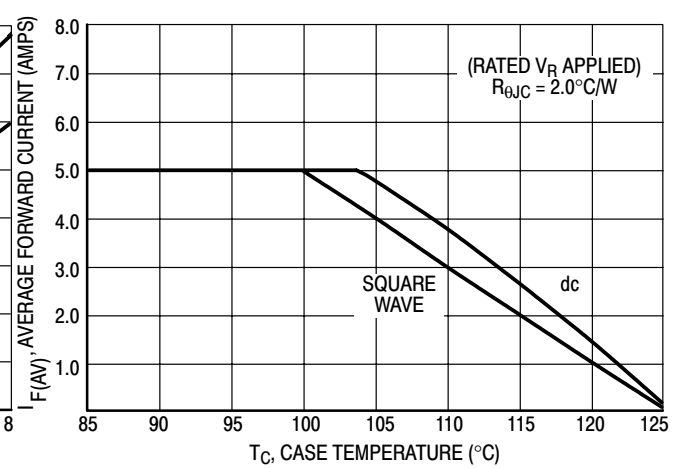


Figure 4. Current Derating Case

MUR5150E

TYPICAL ELECTRICAL CHARACTERISTICS

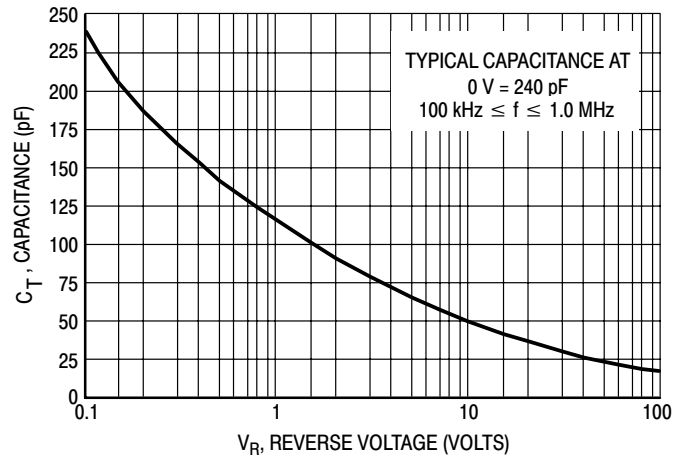


Figure 5. Typical Capacitance

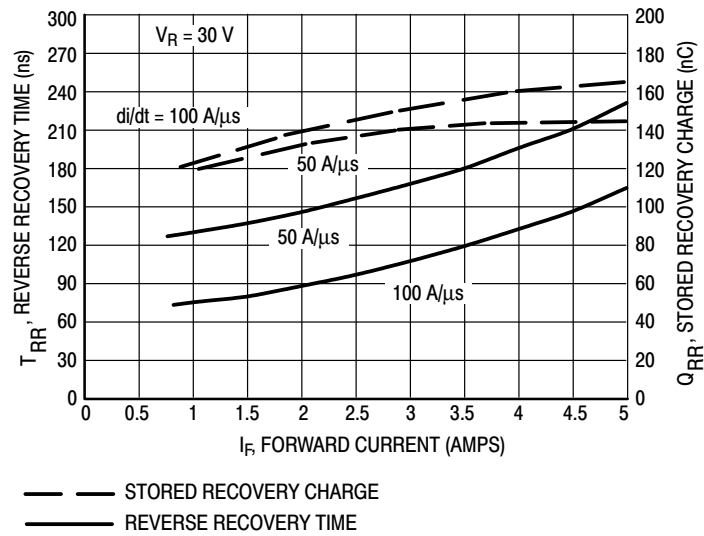


Figure 6. Typical Reverse Switching Characteristics

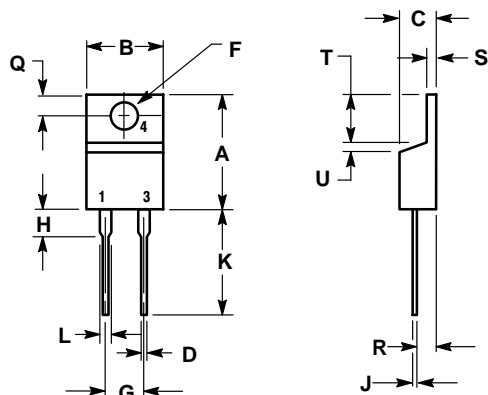
MUR5150E

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

SCANSWITCH is a trademark of Semiconductor Components Industries, LLC.

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

PUBLICATION ORDERING INFORMATION

NORTH AMERICA Literature Fulfillment:

Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: ONlit@hibbertco.com
Fax Response Line: 303-675-2167 or 800-344-3810 Toll Free USA/Canada

N. American Technical Support: 800-282-9855 Toll Free USA/Canada

EUROPE: LDC for ON Semiconductor – European Support

German Phone: (+1) 303-308-7140 (Mon-Fri 2:30pm to 7:00pm CET)
Email: ONlit-german@hibbertco.com

French Phone: (+1) 303-308-7141 (Mon-Fri 2:00pm to 7:00pm CET)
Email: ONlit-french@hibbertco.com

English Phone: (+1) 303-308-7142 (Mon-Fri 12:00pm to 5:00pm GMT)
Email: ONlit@hibbertco.com

EUROPEAN TOLL-FREE ACCESS*: 00-800-4422-3781

*Available from Germany, France, Italy, UK, Ireland

CENTRAL/SOUTH AMERICA:

Spanish Phone: 303-308-7143 (Mon-Fri 8:00am to 5:00pm MST)
Email: ONlit-spanish@hibbertco.com

Toll-Free from Mexico: Dial 01-800-288-2872 for Access –
then Dial 866-297-9322

ASIA/PACIFIC: LDC for ON Semiconductor – Asia Support

Phone: 303-675-2121 (Tue-Fri 9:00am to 1:00pm, Hong Kong Time)
Toll Free from Hong Kong & Singapore:
001-800-4422-3781

Email: ONlit-asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center

4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan 141-0031
Phone: 81-3-5740-2700
Email: r14525@onsemi.com

ON Semiconductor Website: <http://onsemi.com>

For additional information, please contact your local Sales Representative.