

# MUR5150E

## 5 AMP ULTRA FAST RECTIFIER

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

Rating	Symbol	MUR5150E	Unit
Peak repetitive reverse voltage	$V_{RRM}$	1500	V
Working peak reverse voltage	$V_{RWM}$		
DC blocking voltage	$V_R$		
Average rectified forward current (Rated $V_R$ )	$I_{F(AV)}$	5.0 @ $T_C = 100^\circ\text{C}$	A
Peak repetitive forward current (Rated $V_R$ , square wave, 20 kHz)	$I_{FRM}$	10	A
Non-repetitive peak surge current (surge applied at rated load conditions, halfwave, single phase, 60Hz)	$I_{FSM}$	100	A
Operating and storage junction temperature range	$T_J, T_{stg}$	-65 to +125	$^\circ\text{C}$
Controlled avalanche energy	$W_{AVL}$	20	mJ
Maximum thermal resistance Junction to case	$R_{\theta JC}$	2.0	$^\circ\text{C}/\text{W}$

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

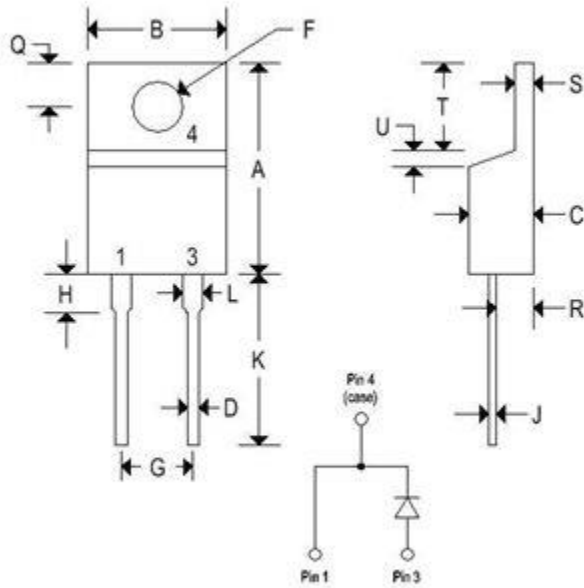
Parameter	Symbol	MUR5150E	Unit
Maximum instantaneous forward voltage <sup>(1)</sup> ( $I_F = 2.0\text{A}, T_C = 25^\circ\text{C}$ ) ( $I_F = 5.0\text{A}, T_C = 25^\circ\text{C}$ )	$V_F$	2.0 2.4	V
Maximum instantaneous reverse current <sup>(1)</sup> (Rated dc voltage, $T_C = 125^\circ\text{C}$ ) (Rated dc voltage, $T_C = 25^\circ\text{C}$ )	$I_R$	500 50	$\mu\text{A}$
Maximum reverse recovery time ( $I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}$ )	$t_{rr}$	175	ns
Maximum forward recovery time ( $I_F = 6.5\text{A}, di/dt = 12\text{A}/\mu\text{s}$ )	$t_{fr}$	225	ns
Peak transient overshoot voltage	$V_{RFM}$	20	V

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**MECHANICAL CHARACTERISTICS**

Case	TO-220AC
Marking	Alpha-numeric
Pin out	See below



	TO-220AC			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.595	0.620	15.110	15.750
B	0.380	0.405	9.650	10.290
C	0.160	0.190	4.060	4.820
D	0.142	0.147	3.610	3.730
F	0.142	0.147	3.610	3.730
G	0.190	0.210	4.830	5.330
H	0.110	0.130	2.790	3.300
J	0.018	0.025	0.460	0.640
K	0.500	0.562	12.700	14.270
L	0.045	0.050	1.140	1.270
Q	0.100	0.120	2.540	3.040
R	0.080	0.110	2.040	2.790
S	0.045	0.055	1.140	1.390
T	0.235	0.255	5.970	6.480
U	0.030	0.050	0.760	1.270



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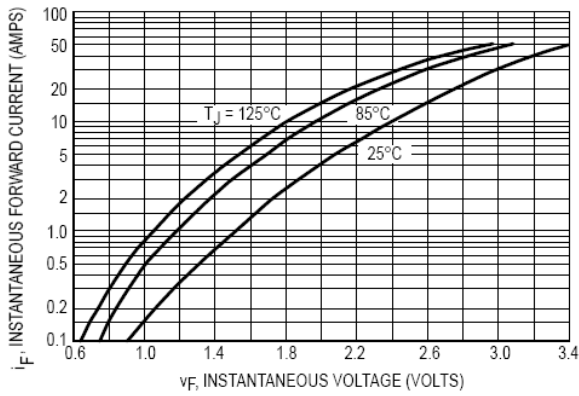


Figure 1. Typical Forward Voltage

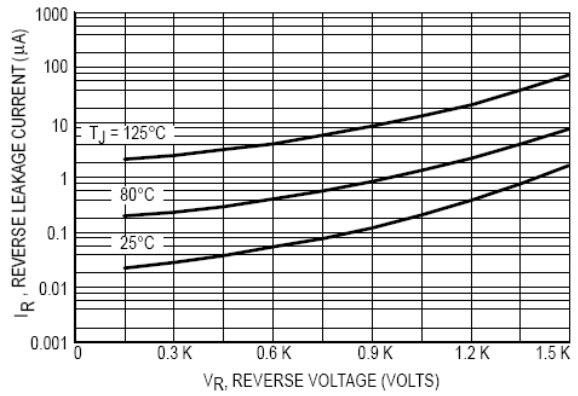


Figure 2. Typical Reverse Leakage Current

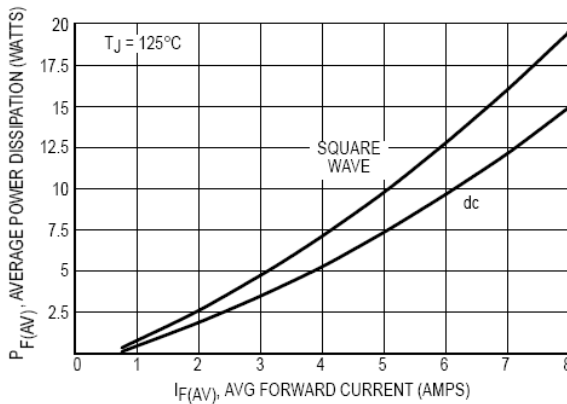


Figure 3. Forward Power Dissipation

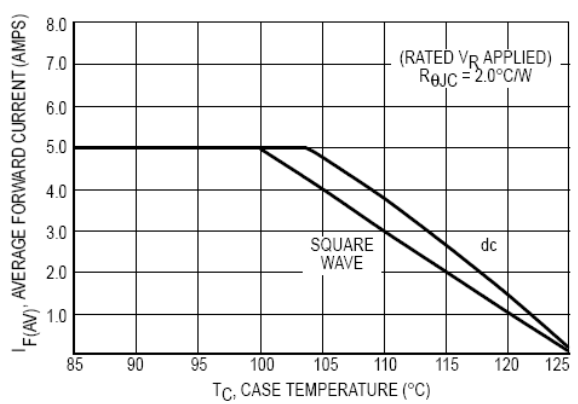


Figure 4. Current Derating Case

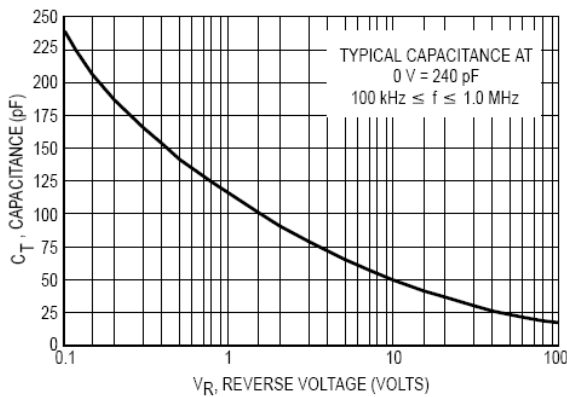


Figure 5. Typical Capacitance

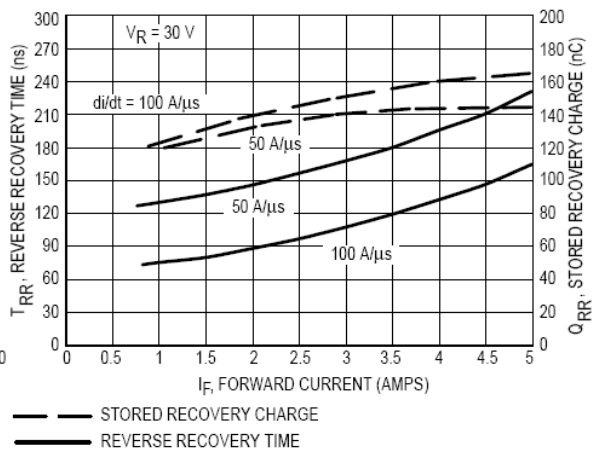


Figure 6. Typical Reverse Switching Characteristics