

# MUR10150E

## 10A 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	MUR10150E	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 $V_R$ )	$I_{F(AV)}$	10 @ $T_C = 125^\circ\text{C}$	A
Peak repetitive forward current (Rated $V_R$ square wave, 20 kHz)	$I_{FRM}$	20 @ $T_C = 125^\circ\text{C}$	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	$W_{AVAIL}$	20	mJ
Maximum thermal resistance Junction to case	$R_{\theta JC}$	2.0	$^\circ\text{C}/\text{W}$

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

Parameter	Symbol	MUR10150E		Unit
		Typ	Max	
Maximum instantaneous forward voltage <sup>(1)</sup> ( $I_F = 6.5\text{A}, T_C = 125^\circ\text{C}$ ) ( $I_F = 6.5\text{A}, T_C = 25^\circ\text{C}$ )	$V_F$	1.7 1.9	2.2 2.4	V
Maximum instantaneous reverse current <sup>(1)</sup> (Rated dc voltage, $T_C = 125^\circ\text{C}$ ) (Rated dc voltage, $T_C = 25^\circ\text{C}$ )	$I_R$	750 25	1000 100	$\mu\text{A}$
Maximum reverse recovery time ( $I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}$ )	$t_{rr}$	150	175	ns
Maximum forward recovery time ( $I_F = 6.5\text{A}, di/dt = 12\text{A}/\mu\text{s}$ )	$t_{fr}$	135	175	ns
Peak transient overshoot voltage	$V_{RFM}$	14	16	V

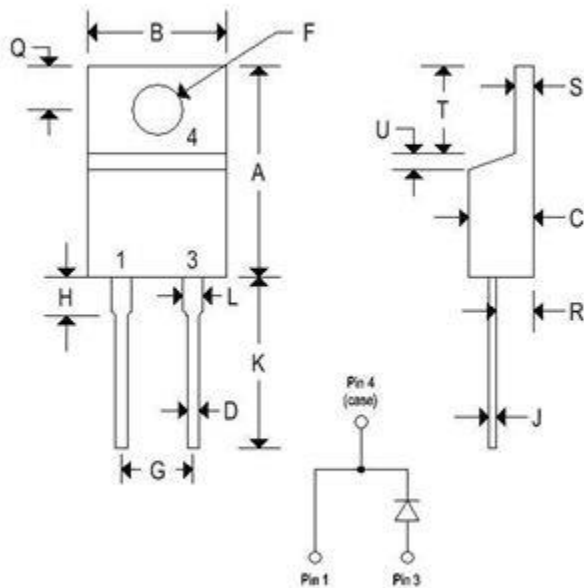
Note 1: Pulse test: Pulse width = 300 $\mu\text{s}$ , duty cycle  $\leq$  2.0%.

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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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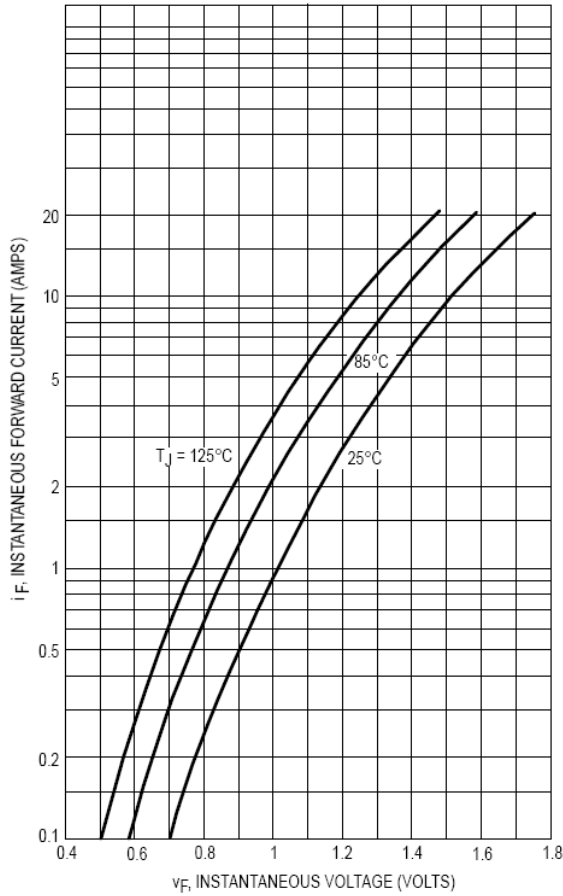


Figure 1. Typical Forward Voltage

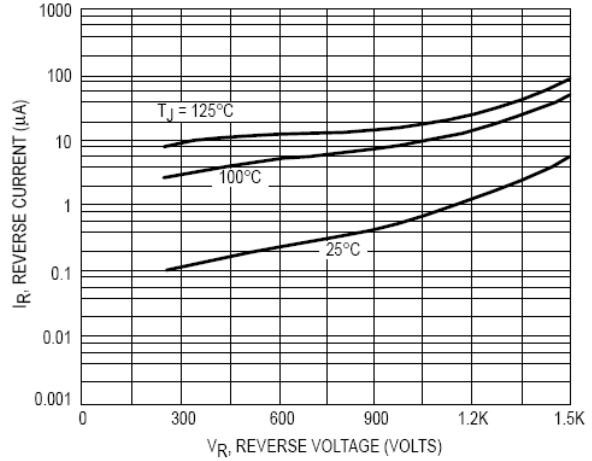


Figure 2. Typical Reverse Current

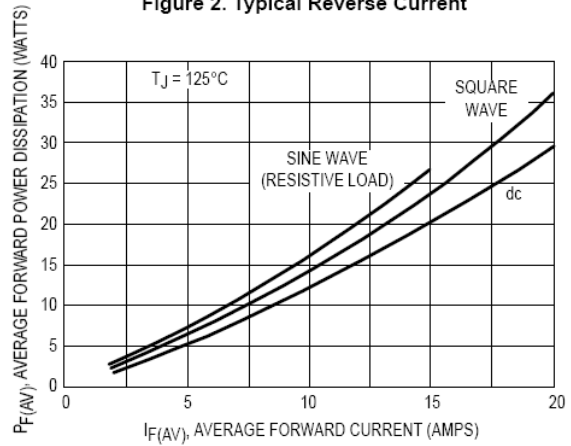


Figure 3. Forward Power Dissipation

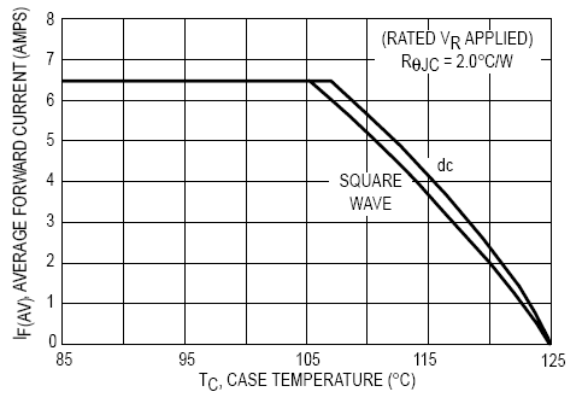


Figure 4. Current Derating Case

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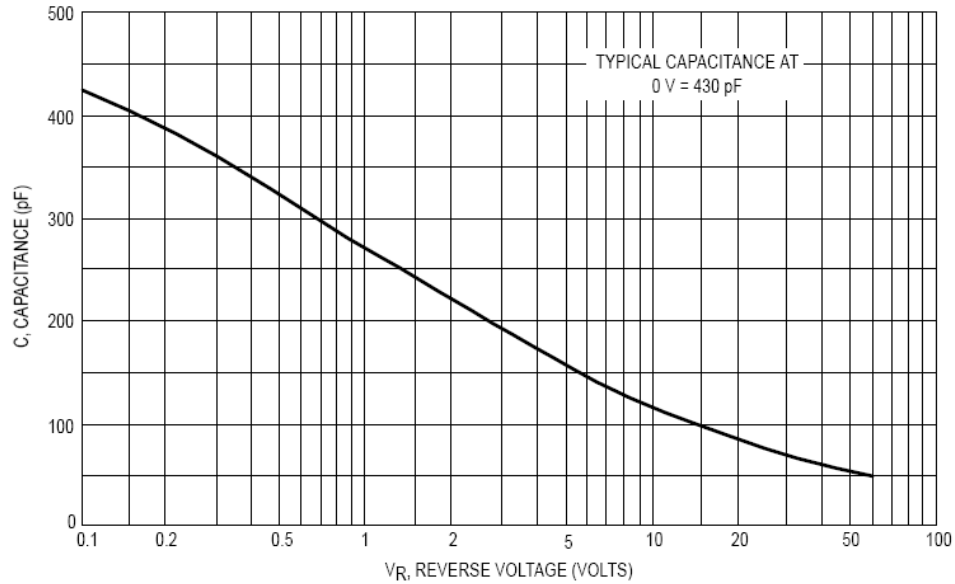


Figure 5. Typical Capacitance

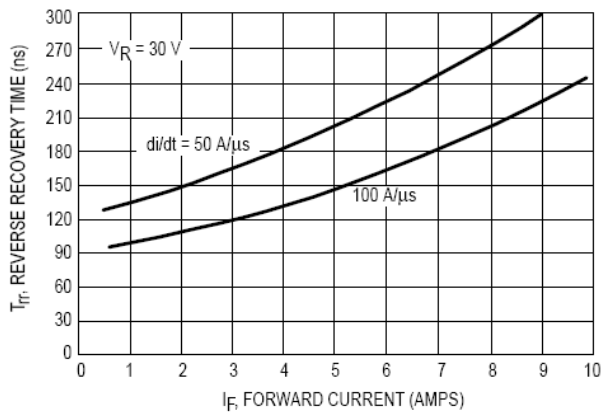


Figure 6. Typical Reverse Recovery Time

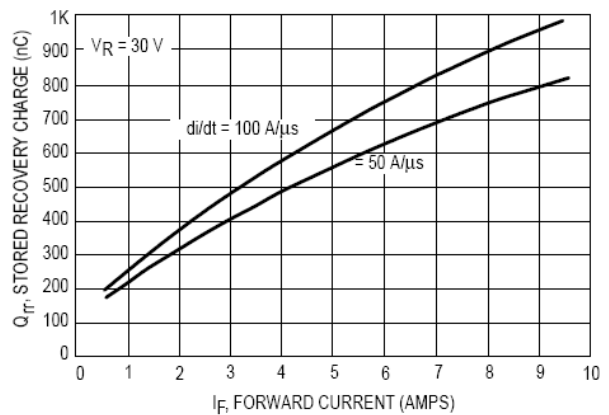


Figure 7. Typical Stored Recovery Charge