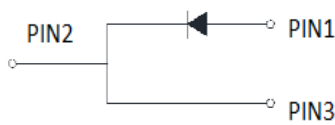


## Ultra-Fast Recovery Diodes 8A FRED



### Features

- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

### Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-220AC  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### ■Maximum Ratings (T<sub>j</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR860
Device marking code			MUR860
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	600
Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)	I <sub>O</sub>	A	8
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	100
Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C,	I <sup>2</sup> t	A <sup>2</sup> s	41
Storage Temperature	T <sub>stg</sub>	°C	-55 ~ +175
Junction Temperature	T <sub>j</sub>	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C <sub>j</sub>	pF	40



# MUR860-B1-W5038HF

## ■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=8.0A$ @ $T_j=25^{\circ}C$	-	1.40	1.6	
			$I_{FM}=8.0A$ @ $T_j=150^{\circ}C$	-	1.15	1.3	
DC reverse current at rated DC blocking voltage per diode	$I_{RRM1}$	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$	-	-	5.0	
	$I_{RRM2}$		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	40	200	
Reverse Recovery Time	$T_{RR}$	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$	-	25	35	
			$T_j=25^{\circ}C$	-	60	-	
			$T_j=125^{\circ}C$	-	300	-	
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}C$	$I_F=8A$ $di/dt=-200A/us$ $V_{RM}=200V$	-	3.4	-
			$T_j=125^{\circ}C$		-	6.4	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}C$		-	100	-
			$T_j=125^{\circ}C$		-	300	-

## ■Thermal Characteristics ( $T_j=25^{\circ}C$ Unless otherwise specified )

PARAMETER		SYMBOL	UNIT	MUR860
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	2.0
	Between junction and Air	$R_{\theta J-A}$	$^{\circ}C/W$	50

## ■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR860	Approximate 1.8	50	1000	5000	Tube



## ■ Characteristics (Typical)

FIG1:  $I_o$  - $T_c$  Curve

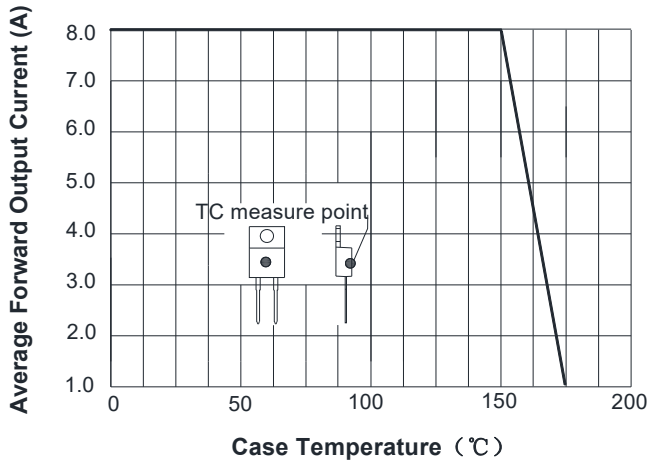


FIG2: Surge Forward Current Capability

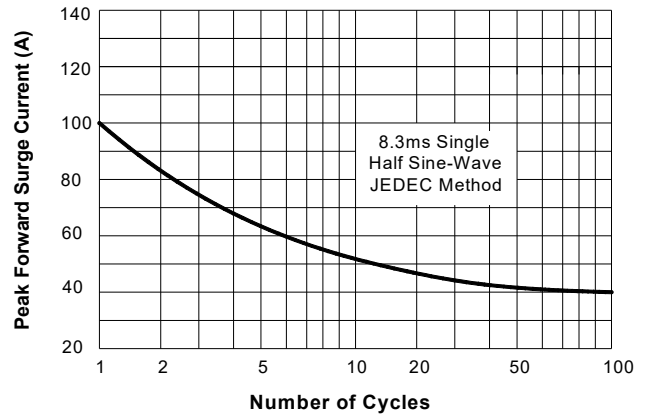


FIG3: Forward Voltage

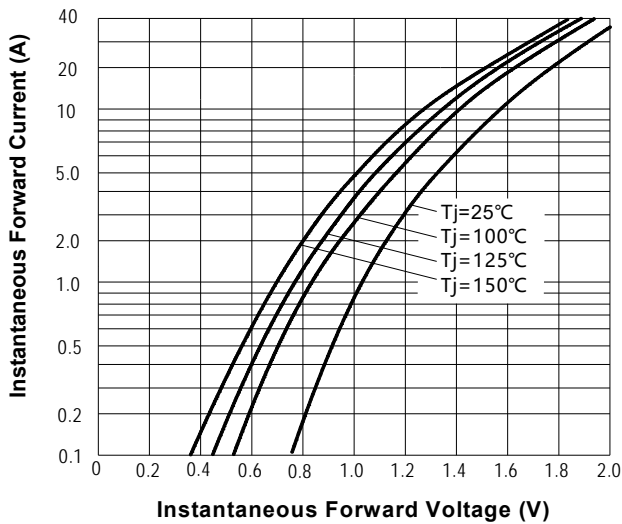


FIG4: Instantaneous Reverse Characteristics

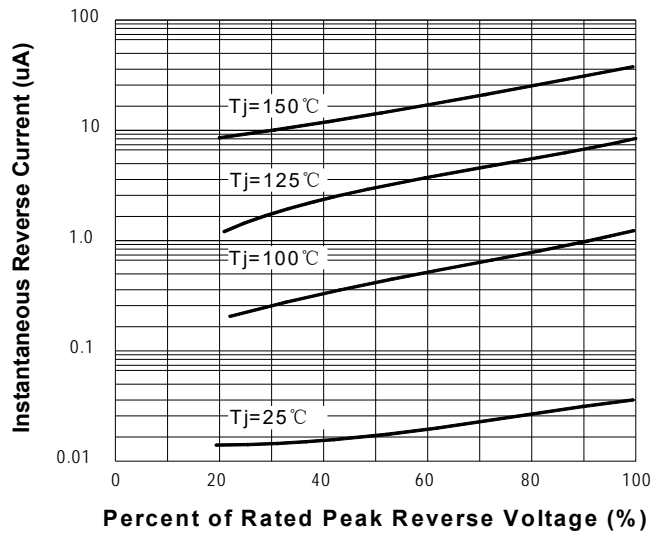
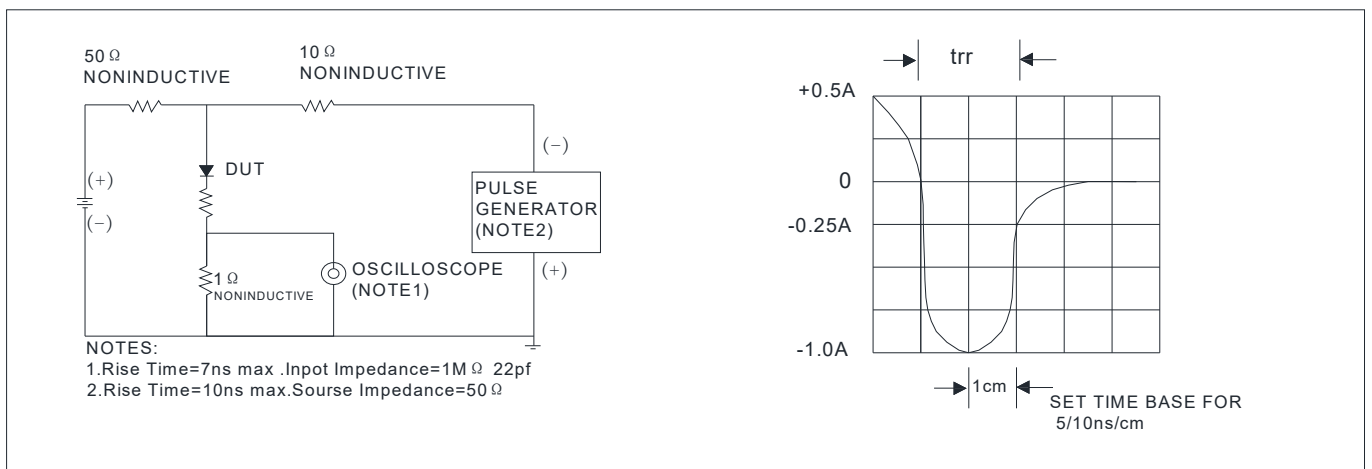


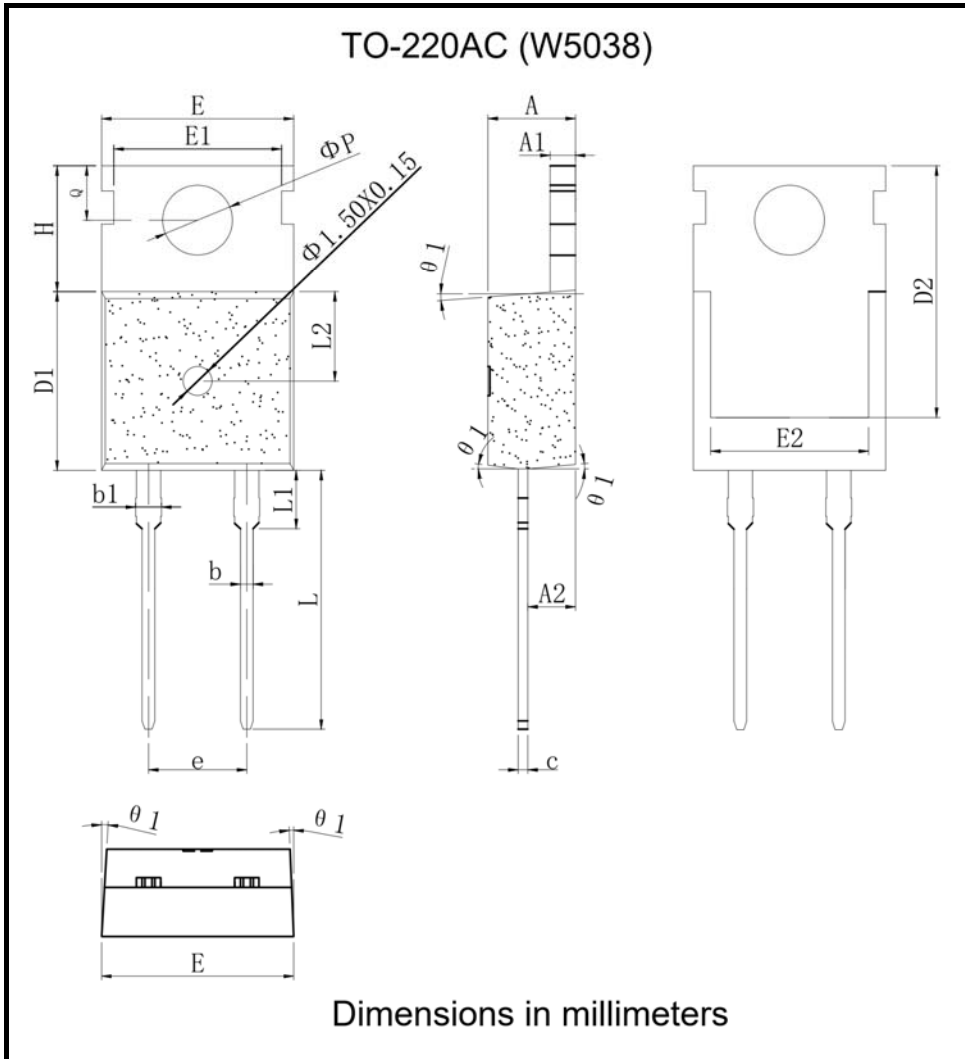
FIG5: Diagram of circuit and Testing wave form of reverse recovery time





# MUR860-B1-W5038HF

## ■Outline Dimensions



TO-220AC (W5038)		
Dim	Min	Max
A	4.40	4.60
A1	1.25	1.35
A2	2.30	2.50
b	0.70	0.90
b1	1.25	1.42
c	0.45	0.55
D1	9.10	9.30
D2	13.07	13.47
D3	15.45	16.15
E	9.80	10.15
E1	8.55	8.85
E2	7.80	8.20
e	5.08 REF	
H	6.40	6.60
L	13.00	13.45
L1	-	3.40
L2	4.50	4.80
ΦP	3.50	3.70
Q	2.70	2.90
θ1	2°	7°



# MUR860-B1-W5038HF

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