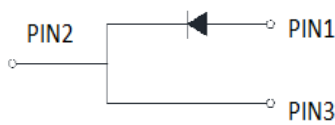


Ultra-Fast Recovery Diodes 10A FRED



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_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR1060
Device marking code			MUR1060
Repetitive Peak Reverse Voltage	V _{RRM}	V	600
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _O	A	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C	I _{FSM}	A	120
Current Squared Time @1ms≤t≤8.3ms T _j =25°C,	I ² t	A ² s	60
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C _j	pF	40



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■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=10.0A @ T_j=25^{\circ}C$	-	1.45	1.6	
			$I_{FM}=10.0A @ T_j=150^{\circ}C$		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}		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	15	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	
			$T_j=25^{\circ}C$	-	90	-	
			$T_j=125^{\circ}C$	-	150	-	
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}C$	$I_F=10A$ $di/dt=-200A/us$ $V_{RM}=200V$	-	4.3	-
			$T_j=125^{\circ}C$		-	7.0	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}C$		-	200	-
			$T_j=125^{\circ}C$		-	550	-

■Thermal Characteristics (T_j=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR1060
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	°C/W	2.0
	Between junction and Air	$R_{\theta J-A}$	°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
MUR1060	Approximate 1.8	50	1000	5000	Tube



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■ Characteristics (Typical)

FIG1: I_o -T_c Curve

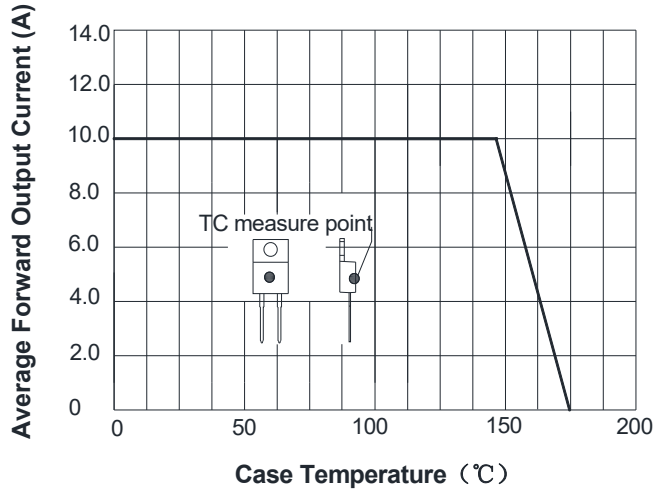


FIG2: Surge Forward Current Capability

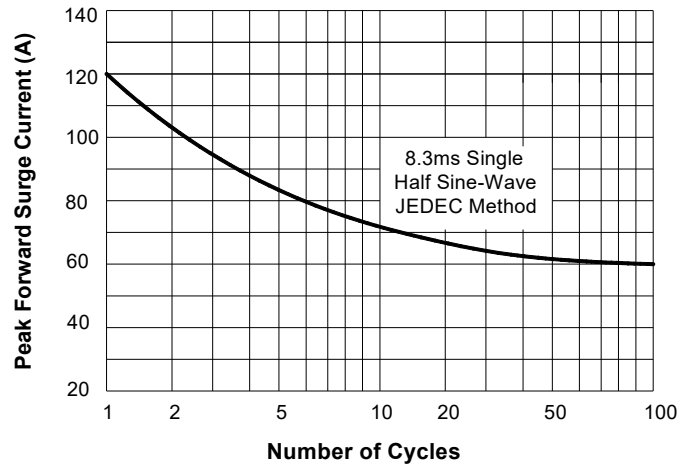


FIG3: Forward Voltage

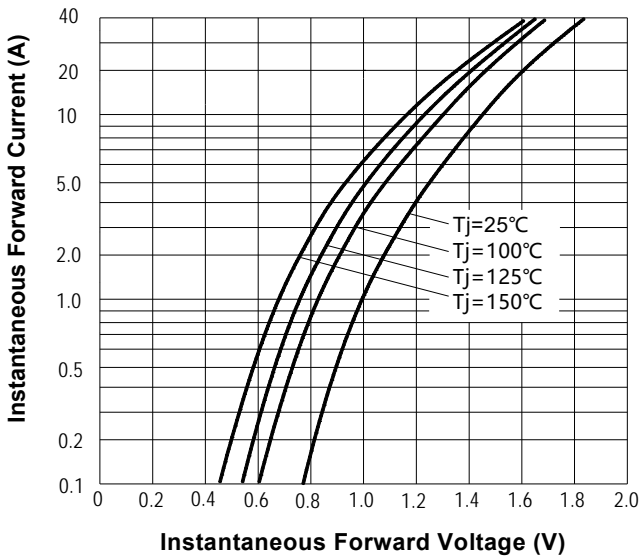


FIG4: Instantaneous Reverse Characteristics

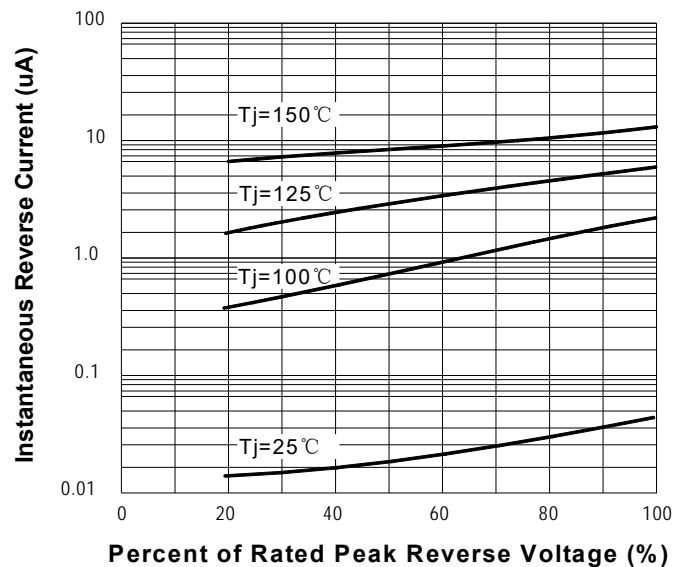
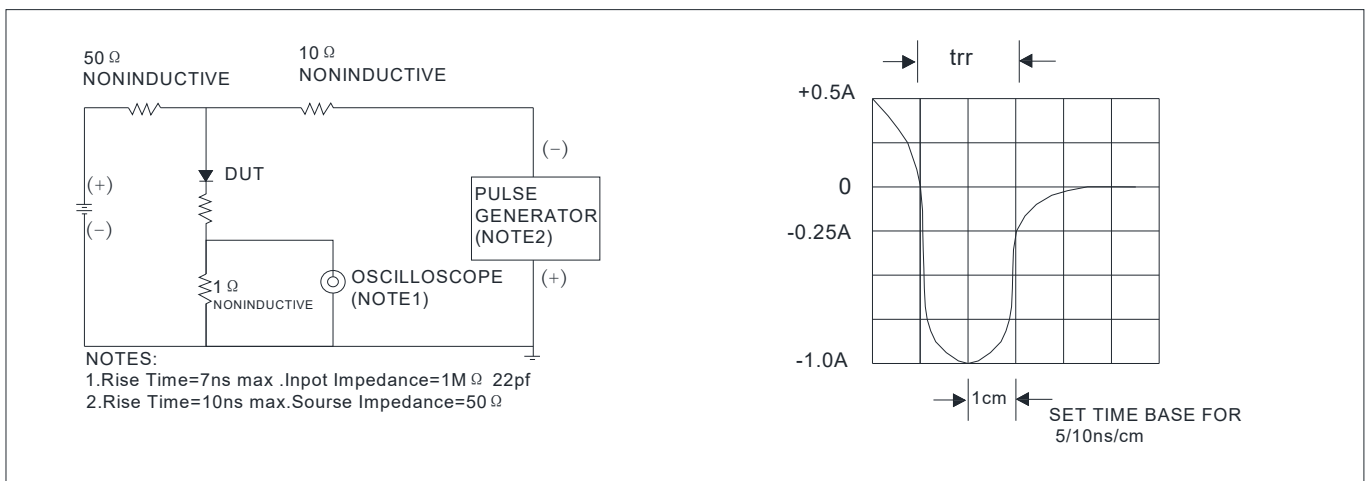


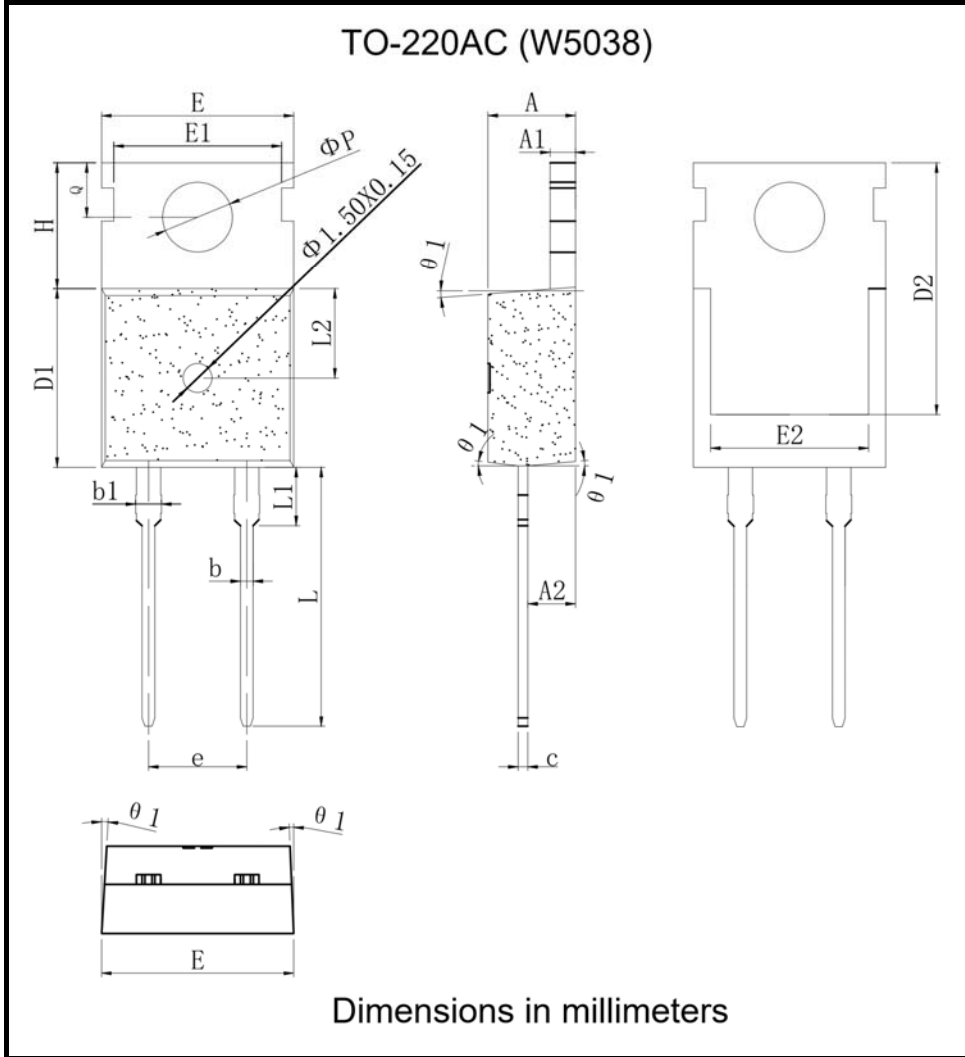
FIG5: Diagram of circuit and Testing wave form of reverse recovery time





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■ 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°



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