

Ultra-Fast Recovery Diodes 30A 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
- 2500V Insulating capability

Typical Applications

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

Mechanical Data

- **Package:** TO-220AC
Inner-Insulated Instructure
Molding compound meets UL 94 V-0 flammability rating, -
- **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	MURI3060L
Device marking code			MURI3060L
Repetitive Peak Reverse Voltage	VRRM	V	600
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _O	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _a =25°C	I _{FSM}	A	250
Current Squared Time @1ms≤t≤8.3ms T _j =25°C	I ² t	A ² s	260
Single Pulse Avalanche Energy @ T _p =40uS, T _j =25°C, L=15mH	EAS	mJ	150
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Junction capacitance @4V,1MHz	C _j	pF	145

MURI3060L

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=30.0A$ @ $T_J=25^{\circ}C$	-	2.1	2.5
			$I_{FM}=30.0A$ @ $T_J=125^{\circ}C$		1.6	2.0
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}		$V_{RM}=V_{RRM}$ $T_J=125^{\circ}C$	-	-	200,0
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_J=25^{\circ}C$	-	27.0	50.0
			$T_J=25^{\circ}C$	-	58.0	-
			$T_J=125^{\circ}C$	-	92.0	-
Peak recovery current	I_{RRM}	A	$T_J=25^{\circ}C$	-	3.25	-
			$T_J=125^{\circ}C$	-	9.8	-
Reverse recovery charge	Q_{rr}	nC	$T_J=25^{\circ}C$	-	95.0	-
			$T_J=125^{\circ}C$	-	450.0	-

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

PARAMETER		SYMBOL	UNIT	MURI3060L
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}CW$	1.5
	Between junction and Air	$R_{\theta J-A}$	$^{\circ}CW$	30.0

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURI3060L	Approximate 1.8	50	1000	5000	Tube

■ Characteristics(Typical)

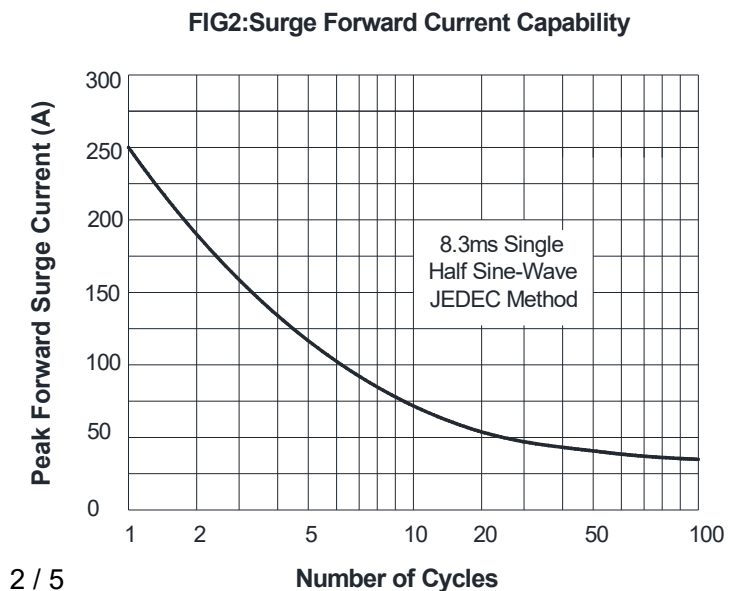
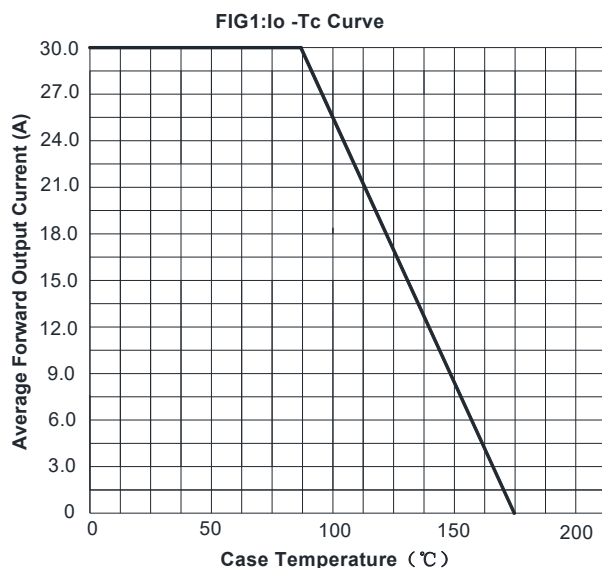


FIG3: Forward Voltage

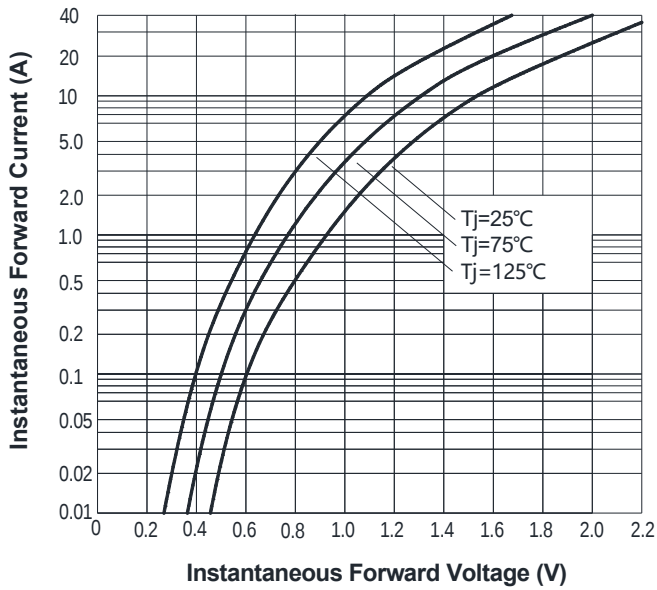


FIG.4: Instantaneous Reverse Characteristics

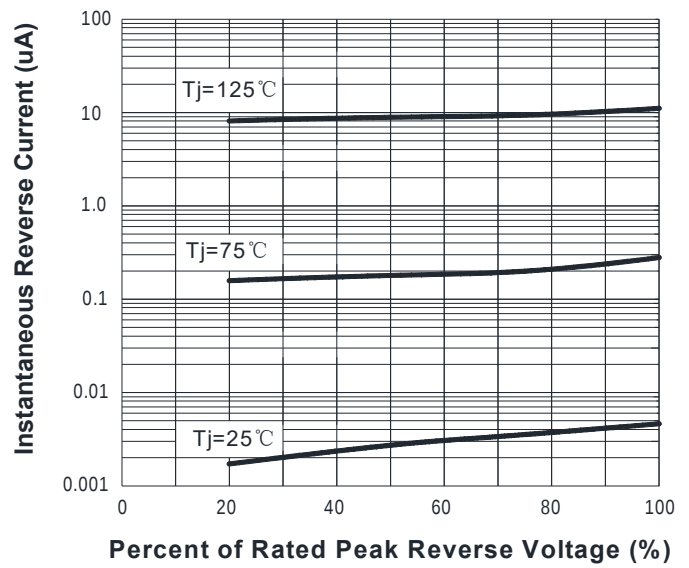
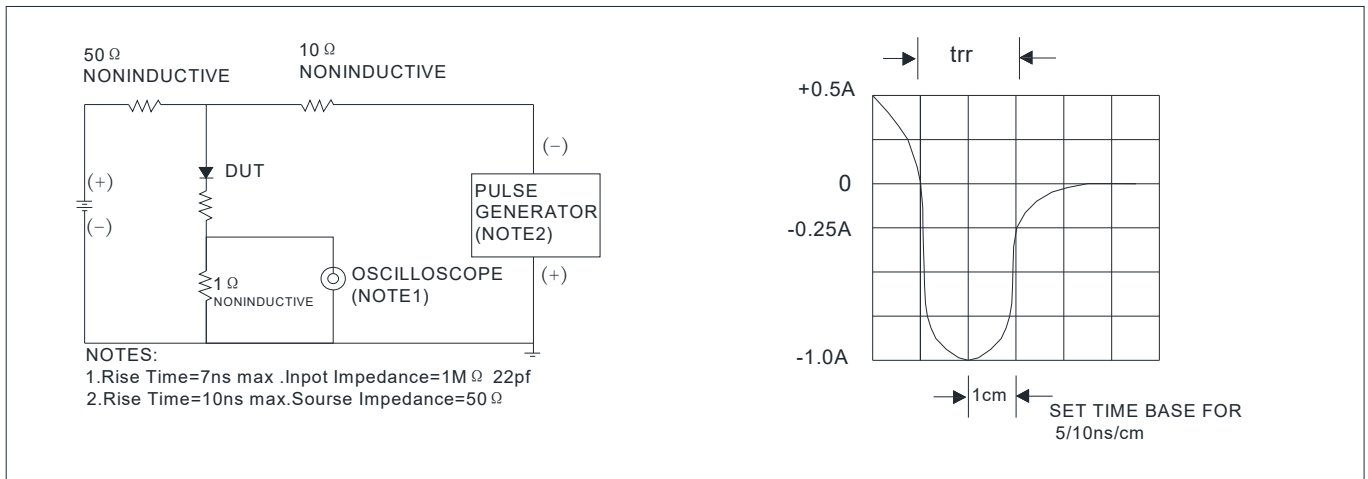
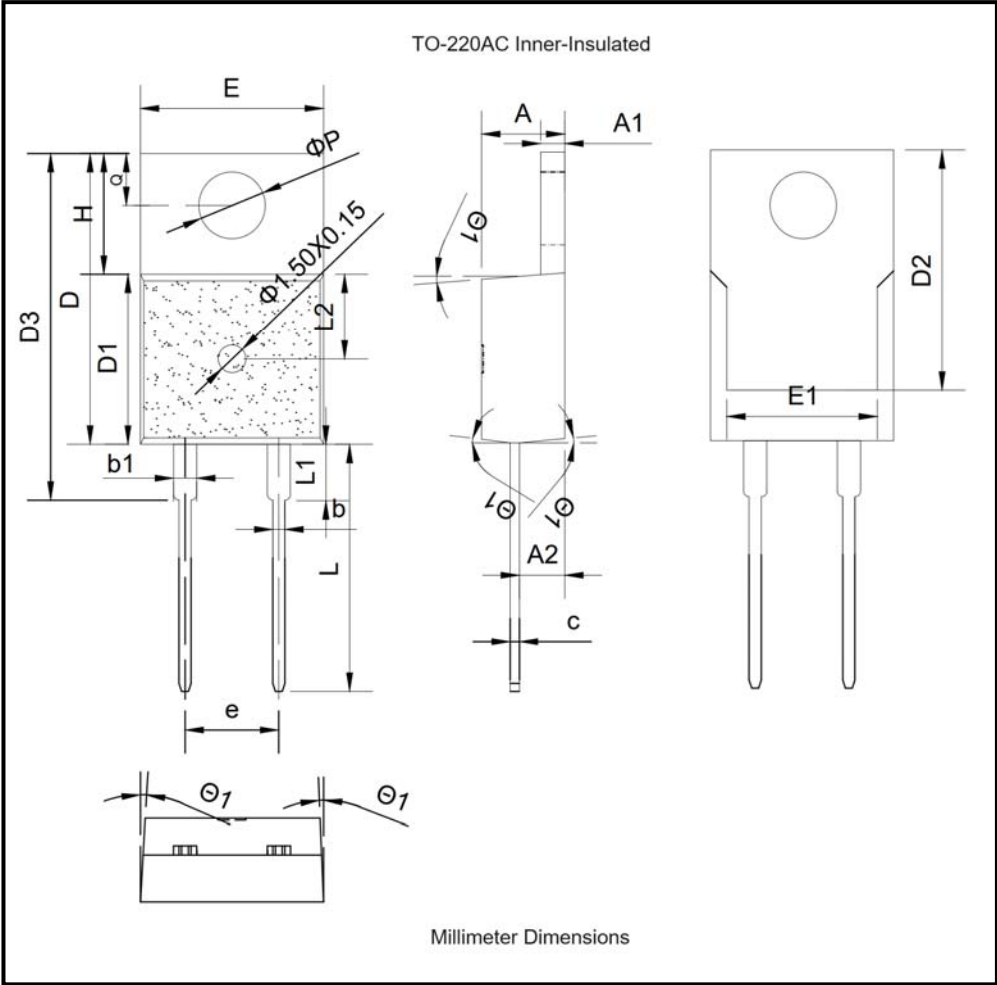


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Outline Dimensions



TO-220AC		
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
D	15.50	16.00
D1	9.10	9.30
D2	12.90	13.30
D3	18.45	19.15
E	9.80	10.15
E1	7.40	7.80
e	TYP 5.08	
H	6.40	6.60
L	13.00	13.45
L1	/	3.40
L2	4.50	4.80
L3	1.10	1.50
ΦP	3.65	3.85
Q	2.65	2.85
θ1	2°	7°

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