

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

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, -
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

■ Maximum Ratings (Tj=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR3060L
Device marking code			MUR3060L
Repetitive Peak Reverse Voltage	VRRM	V	600
Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1)	IO	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25°C	IFSM	A	300
Current Squared Time @1ms≤t≤8.3ms Tj=25°C,	I²t	A²s	373
Single Pulse Avalanche Energy @ Tp=40uS, Tj=25°C,L=15mH	EAS	mJ	210
Storage Temperature	Tstg	°C	-55 ~ +175
Junction Temperature	Tj	°C	-55 ~ +175
Junction capacitance @4V,1MHz	Cj	pF	160

■ Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=30.0A @ T_j=25^{\circ}C$	-	2.0	2.50	
			$I_{FM}=30.0A @ T_j=125^{\circ}C$		1.65	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	
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$	$T_j=25^{\circ}C$	-	28	50
				$T_j=125^{\circ}C$	-	60.5	-
				$T_j=125^{\circ}C$	-	96.98	-
Peak recovery current	I_{RRM}	A	$I_F=30A$ $di/dt=-200A/us$ $V_{RM}=400V$	$T_j=25^{\circ}C$	-	3.53	-
				$T_j=125^{\circ}C$	-	11.3	-
Reverse recovery charge	Q_{rr}	nC		$T_j=25^{\circ}C$	-	106.7	-
				$T_j=125^{\circ}C$	-	537.25	-

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

PARAMETER	SYMBOL	UNIT	MUR3060L	
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
MUR3060L	Approximate 1.8	50	1000	5000	Tube

■ Characteristics(Typical)

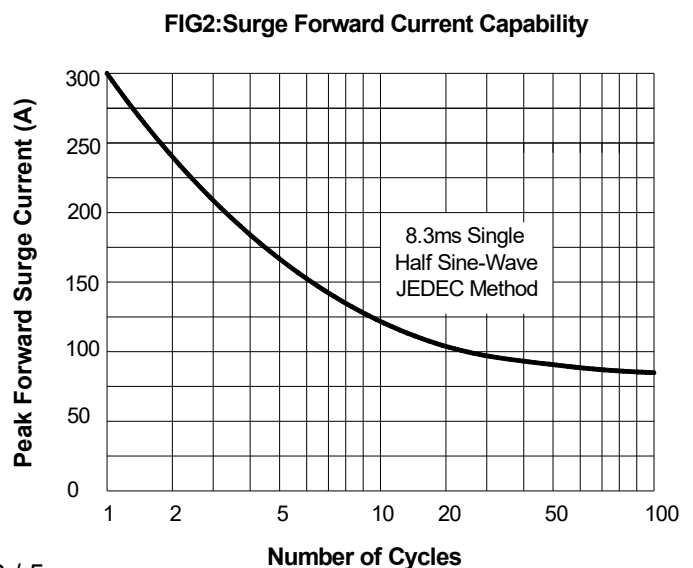
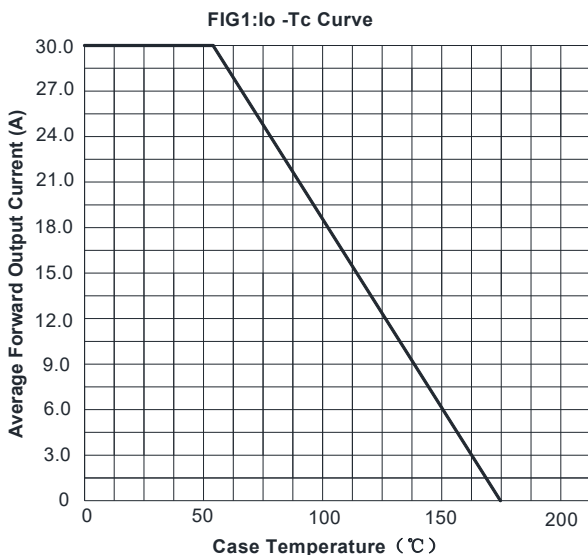


FIG3: Forward Voltage

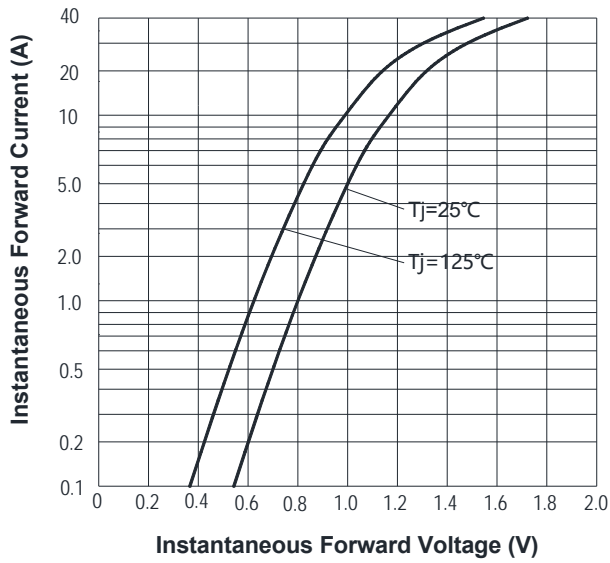


FIG.4: Instantaneous Reverse Characteristics

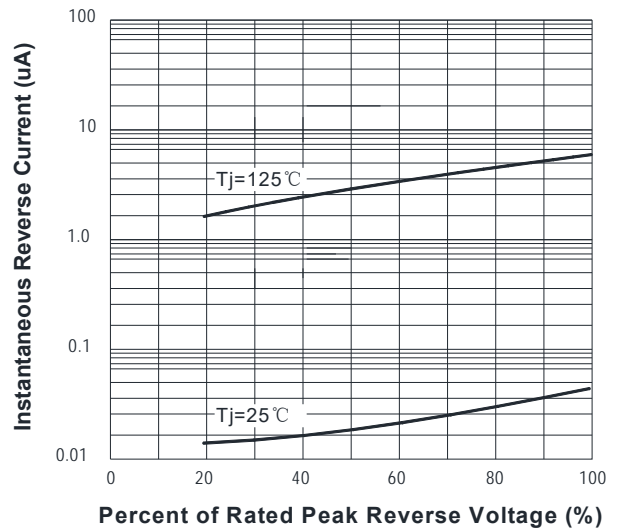
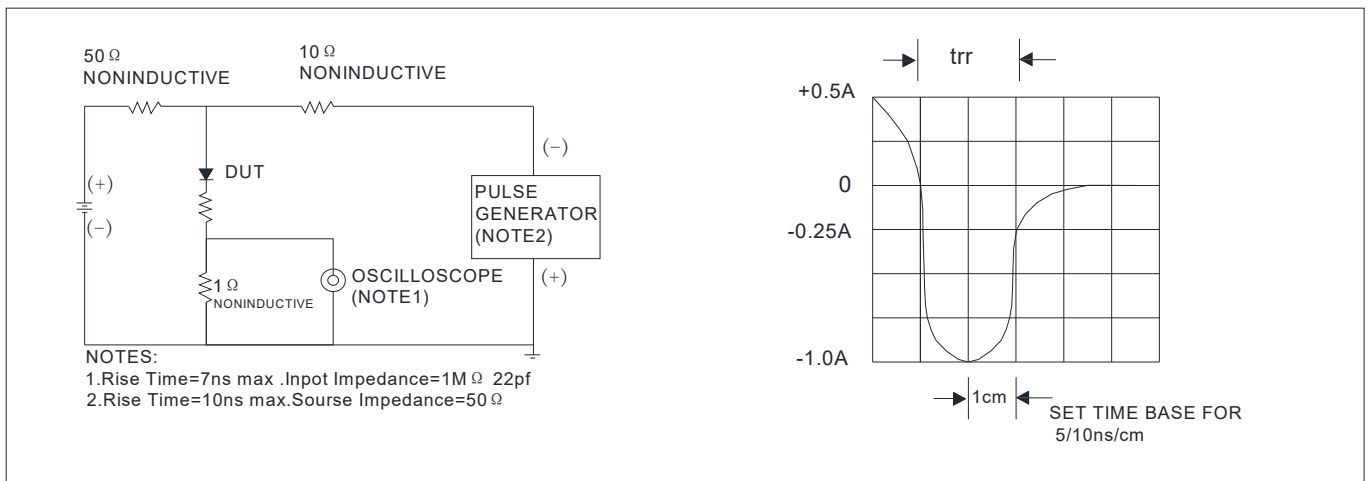
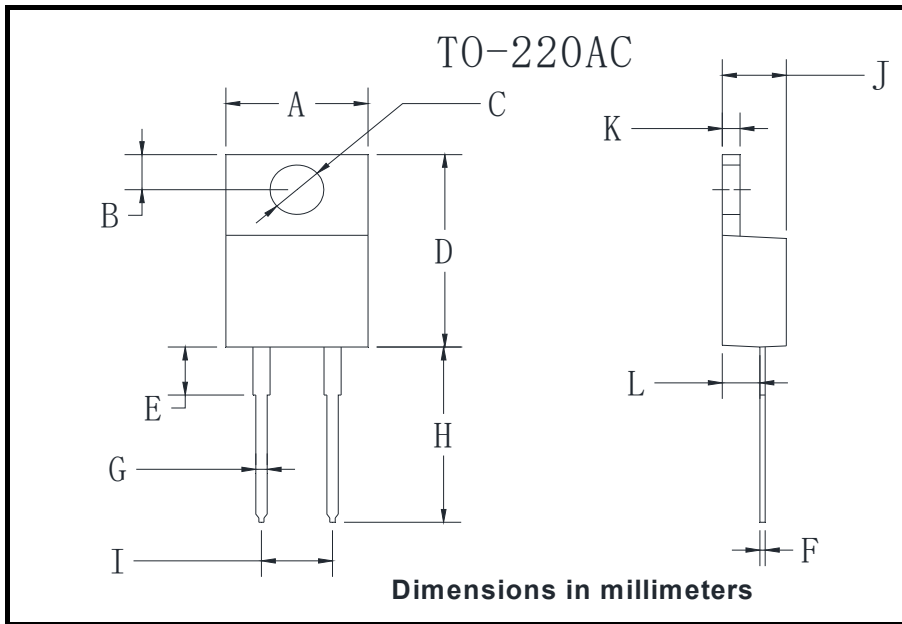


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Outline Dimensions



TO-220AC		
Dim	Min	Max
A	9.95	10.35
B	2.55	2.95
C	3.75	4.05
D	14.95	15.25
E	3.75	4.25
F	0.26	0.5
G	0.68	0.94
H	13.3	13.9
I	4.86	5.26
J	4.38	4.78
K	1.14	1.4
L	2.37	2.79

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