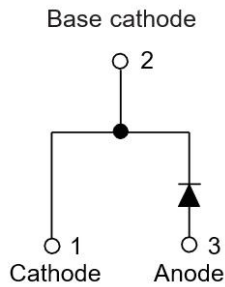
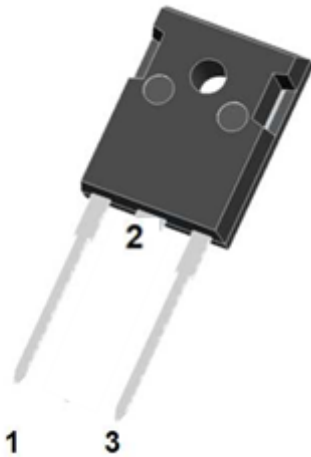


## Ultra-Fast Recovery Diodes 30A FRED



### 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-247AC  
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	MUR3060PL
Device marking code			MUR3060PL
Repetitive Peak Reverse Voltage	VRRM	V	600
Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)	I <sub>O</sub>	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>a</sub> =25°C	I <sub>FSM</sub>	A	300
Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C,	I <sup>2</sup> t	A <sup>2</sup> s	373
Single Pulse Avalanche Energy @ Tp=40uS, T <sub>j</sub> =25°C,L=15mH	EAS	mJ	210
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	160



# MUR3060PL-B1-W5094HF

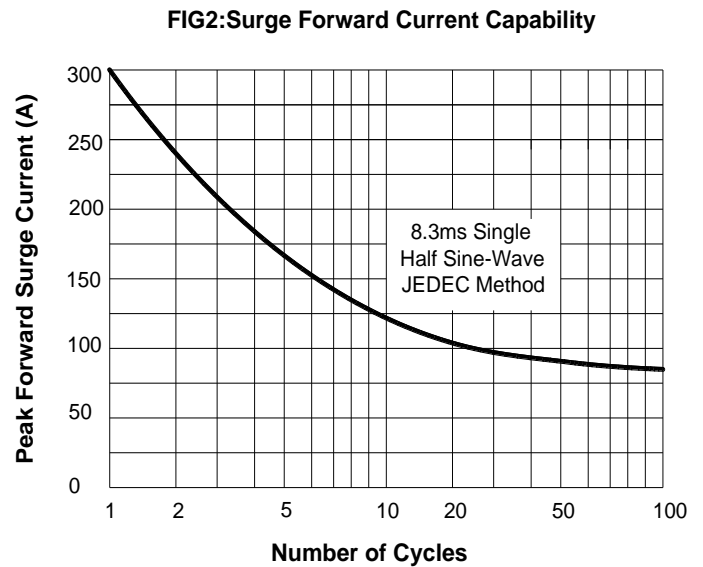
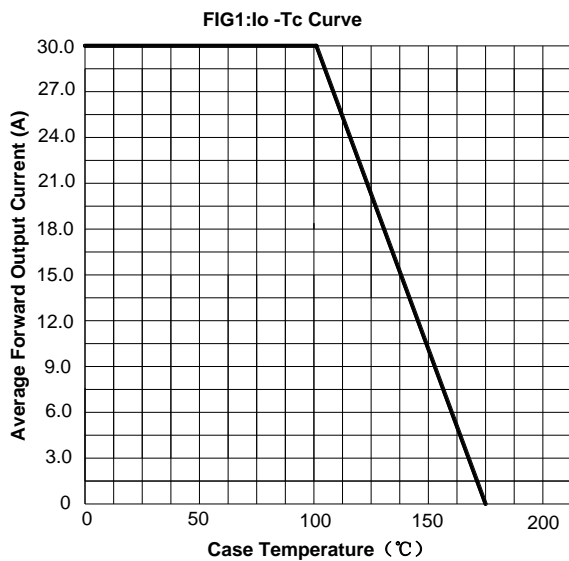
## ■ Electrical Characteristics

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	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^\circ C$	-	28	50
			$T_j=25^\circ C$	-	60.5	-
			$T_j=125^\circ C$	-	96.98	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^\circ C$	-	3.53	-
			$T_j=125^\circ C$			
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^\circ C$	-	106.7	-
			$T_j=125^\circ C$			

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

PARAMETER		SYMBOL	UNIT	MUR3060PL
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^\circ C/W$	1.0
	Between junction and Air	$R_{\theta J-A}$	$^\circ C/W$	50

## ■ Characteristics(Typical)





# MUR3060PL-B1-W5094HF

FIG3: Forward Voltage

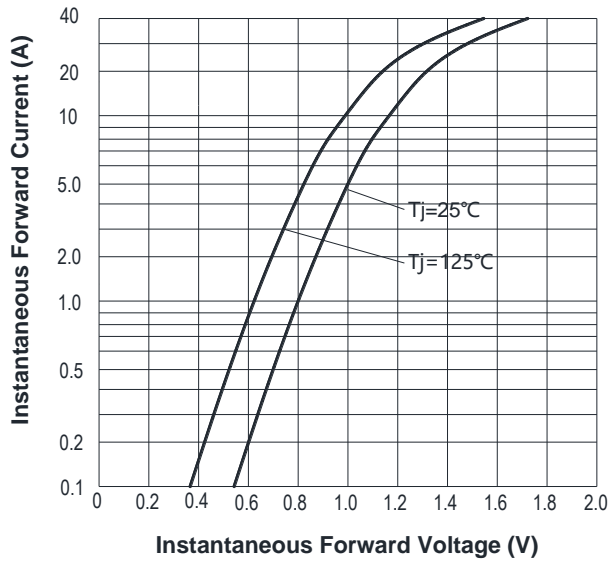


FIG.4: Instantaneous Reverse Characteristics

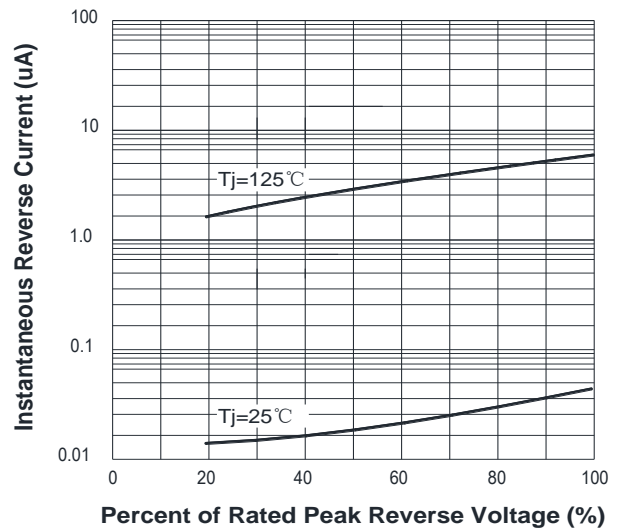
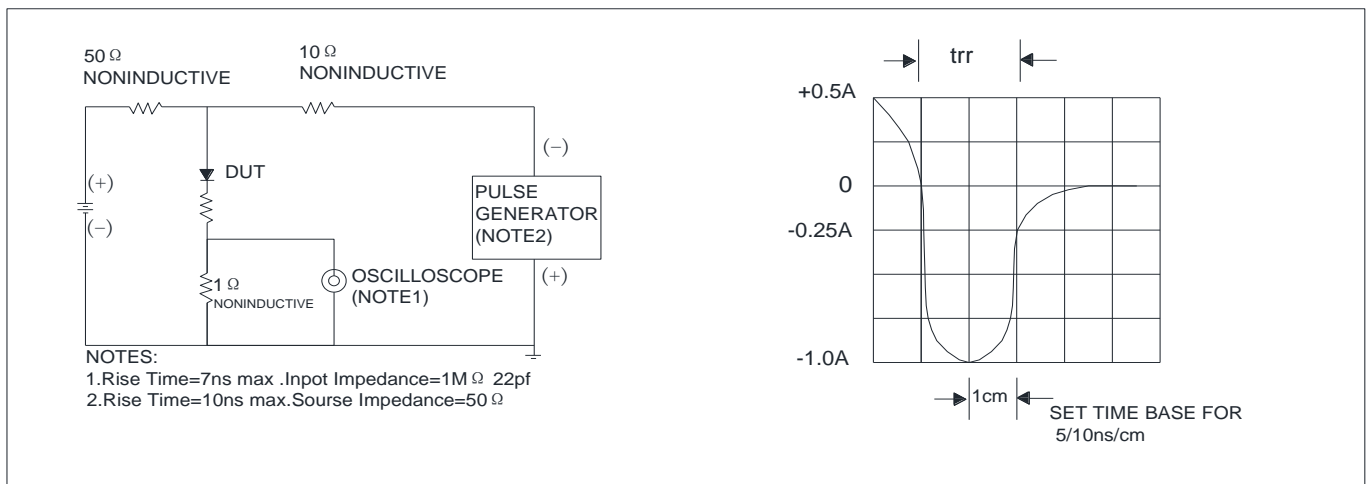


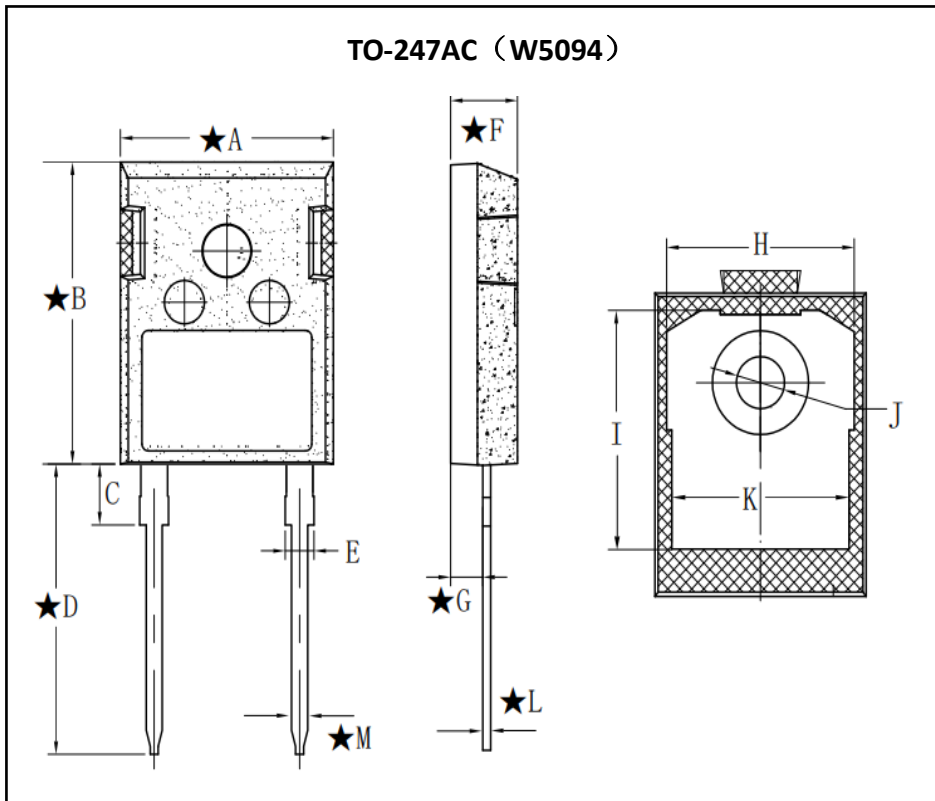
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





# MUR3060PL-B1-W5094HF

## ■ Outline Dimensions



TO-247AC		
Dim	Min	Max
A	15.72	16.12
B	20.7	21.1
C	4.02	4.42
D	19.9	20.3
E	2.0	2.3
F	4.8	5.2
G	2.3	2.5
H	TYP 14.02	
I	TYP 16.55	
J	3.5	3.7
K	TYP 13.26	
L	0.58	0.62
M	1.15	1.25



# MUR3060PL-B1-W5094HF

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