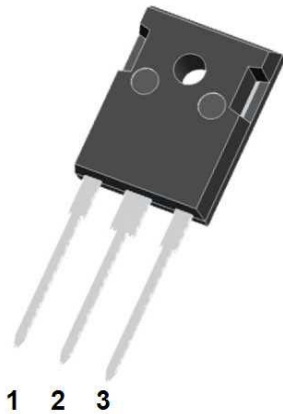


## Ultra-Fast Recovery Diodes 30A\*2 FRED



### 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
- 2000V Insulating capability

### Typical Applications

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

### Mechanical Data

- **Package:** TO-247AB  
Inner-Insulated Instructure  
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	MURI6060PT
Device marking code			MURI6060PT
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	60
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	440
Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C,	I <sup>2</sup> t	A <sup>2</sup> s	800
Single Pulse Avalanche Energy @ T <sub>p</sub> =40uS, T <sub>j</sub> =25°C,L=15mH	EAS	mJ	470
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	195



# MURI6060PT

## ■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=30.0A$ @ $T_j=25^{\circ}C$	-	1.45	1.6
			$I_{FM}=30.0A$ @ $T_j=150^{\circ}C$	-	1.25	1.45
DC reverse current at rated DC blocking voltage per diode	$I_{RRM1}$	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$	-	-	5.0
	$I_{RRM2}$		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	45	200
Reverse Recovery Time	$T_{rr}$	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$	-	38	50
			$T_j=25^{\circ}C$	-	112.5	-
			$T_j=125^{\circ}C$	-	175.5	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}C$	-	5.5	-
			$T_j=125^{\circ}C$	-	13	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}C$	-	300	-
			$T_j=125^{\circ}C$	-	1150	-

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

PARAMETER		SYMBOL	UNIT	MURI6060PT
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	1.0
	Between junction and Air	$R_{\theta J-A}$	$^{\circ}C/W$	40

## ■ Characteristics(Typical)

FIG1: $I_o$  - $T_c$  Curve

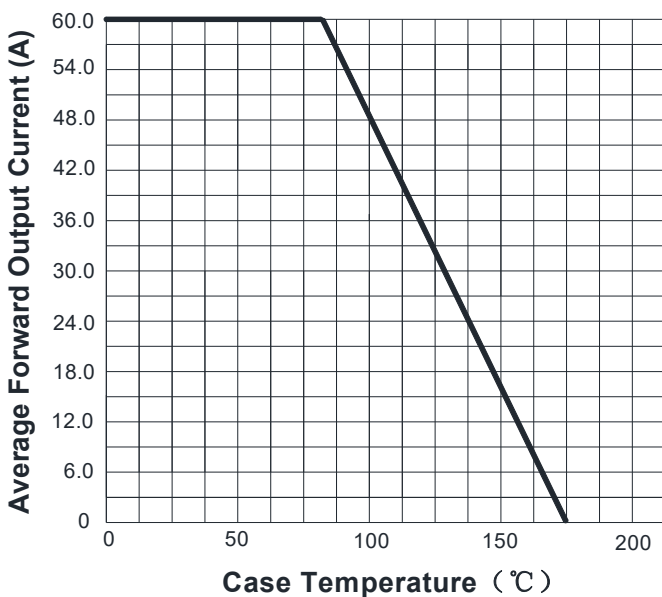
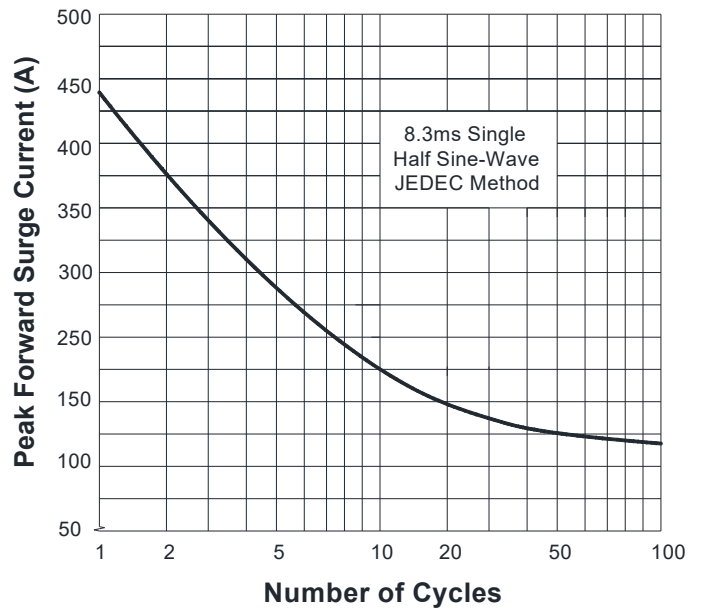


FIG2:Surge Forward Current Capability





# MURI6060PT

FIG3: Forward Voltage

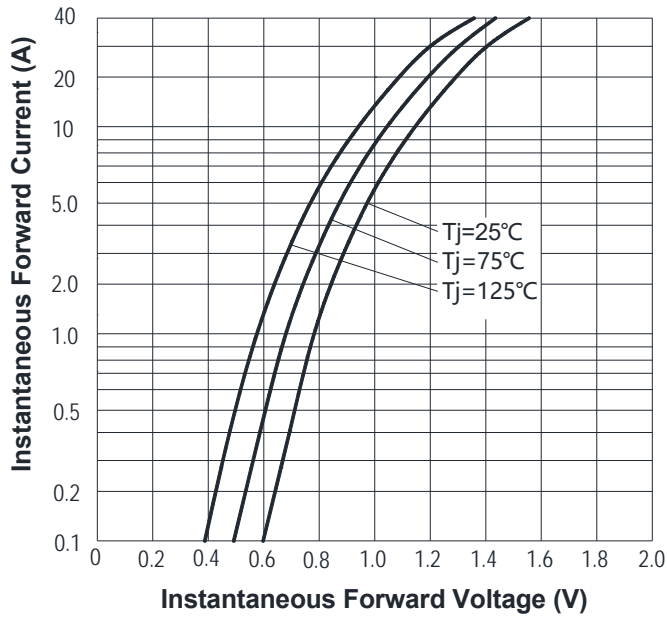


FIG.4: Instantaneous Reverse Characteristics

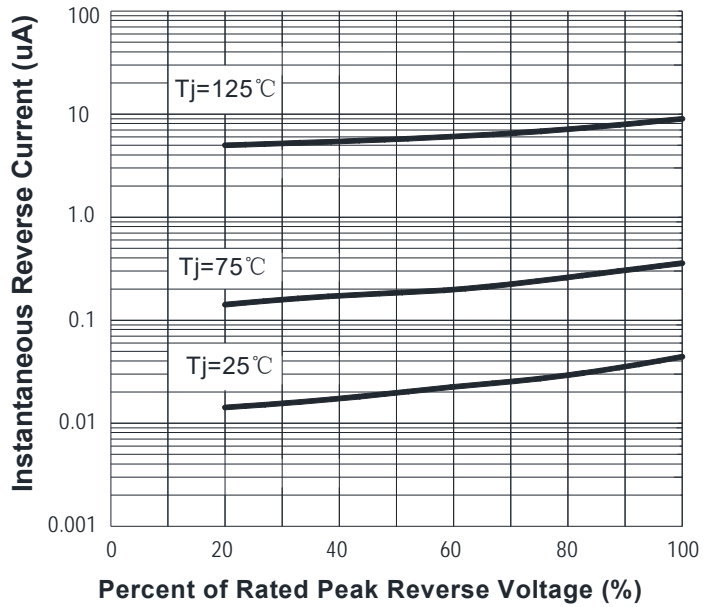
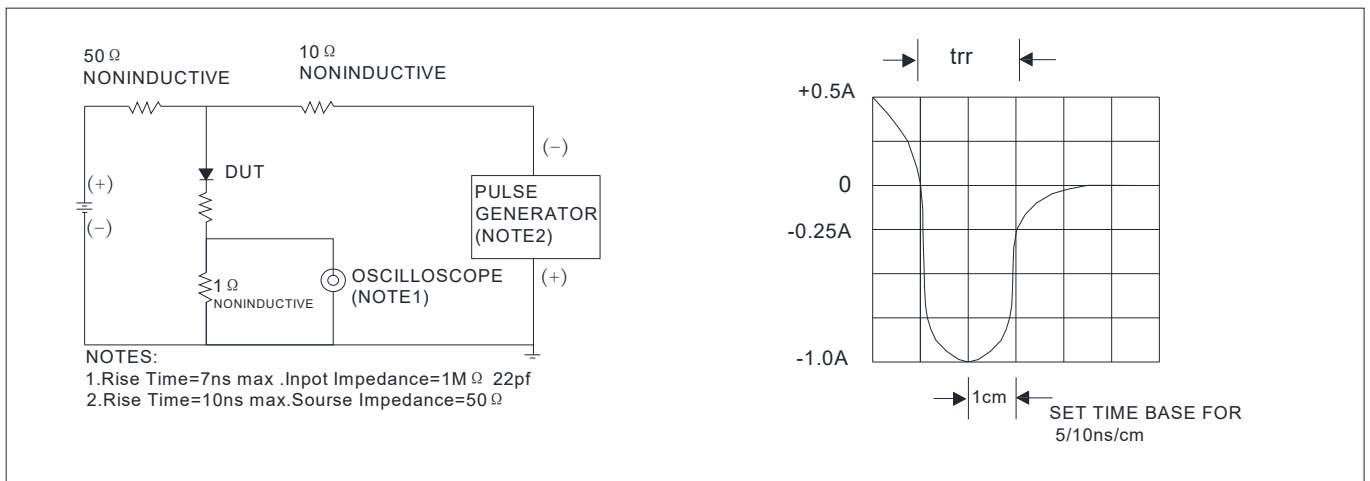


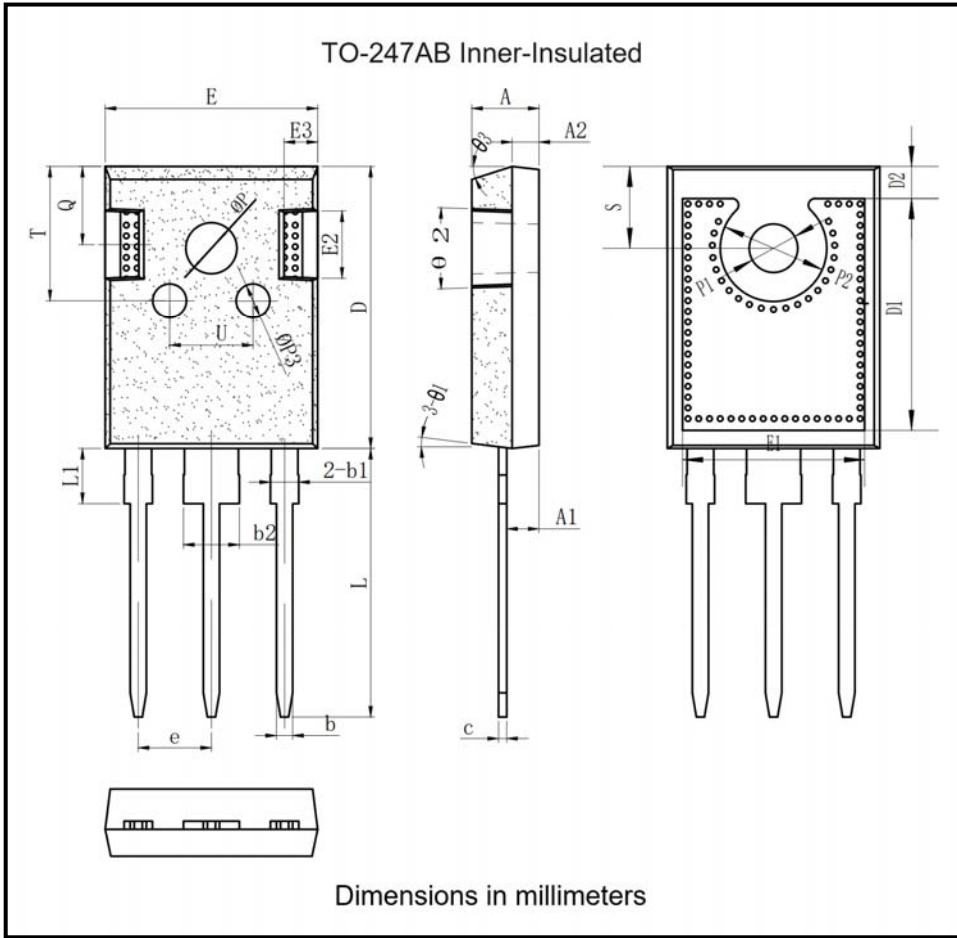
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





# MURI6060PT

## ■Outline Dimensions



TO-247AB		
Dim	Min	Max
A	4.90	5.10
A1	2.31	2.51
A2	1.90	2.10
b	1.15	1.25
b1	1.95	2.25
b2	2.95	3.25
C	0.55	0.65
D	20.90	21.30
D1	17.10	17.50
D2	2.25	2.55
E	15.70	15.90
E1	13.38	13.68
E2	4.90	5.10
E3	2.40	2.60
e	5.40	5.48
L	19.80	20.15
L1	-	4.30
ΦP	3.60	3.80
ΦP1	3.45	3.65
ΦP2	7.75	8.05
ΦP3	2.40	2.60
Q	5.60	6.00
S	6.05	6.25
T	9.80	10.20
U	6.00	6.40
θ1	7°BSC	
θ2	3°BSC	
θ3	15°BSC	



# MURI6060PT

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