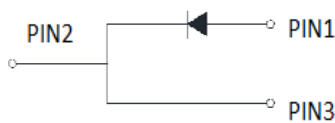


## Ultra-Fast Recovery Diodes 8A FRED Pt



### 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 (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR820
Device marking code			MUR820
Repetitive Peak Reverse Voltage	$V_{RRM}$	V	200
Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1)	$I_O$	A	8
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25°C	$I_{FSM}$	A	100
Current Squared Time @1ms≤t≤8.3ms Tj=25°C,	$I^2t$	A <sup>2</sup> s	41
Storage Temperature	$T_{stg}$	°C	-55 ~ +150
Junction Temperature	$T_j$	°C	-55 ~ +150
Junction capacitance @4V,1MHz	$C_j$	pF	70



# MUR820

## ■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=8.0A @T_j=25^{\circ}C$	-	0.95	1	
			$I_{FM}=8.0A @T_j=150^{\circ}C$		0.78	0.9	
DC reverse current at rated DC blocking voltage per diode	$I_{RRM1}$	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$	-	-	5	
	$I_{RRM2}$		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	20	50	
Reverse Recovery Time	$T_{RR}$	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$	-	25	35	
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}C$	$I_F=8A$ $di/dt=-200A/us$ $V_{RM}=100V$	-	3.73	-
			$T_j=125^{\circ}C$		-	6.61	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}C$		-	42.7	-
			$T_j=125^{\circ}C$		-	120	-

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

PARAMETER		SYMBOL	UNIT	MUR820
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
MUR820	Approximate 1.8	50	1000	5000	Tube

## ■Characteristics (Typical)

FIG1:  $I_o - T_c$  Curve

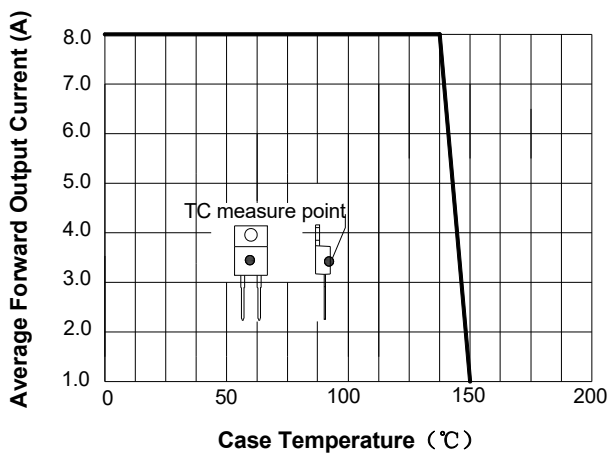
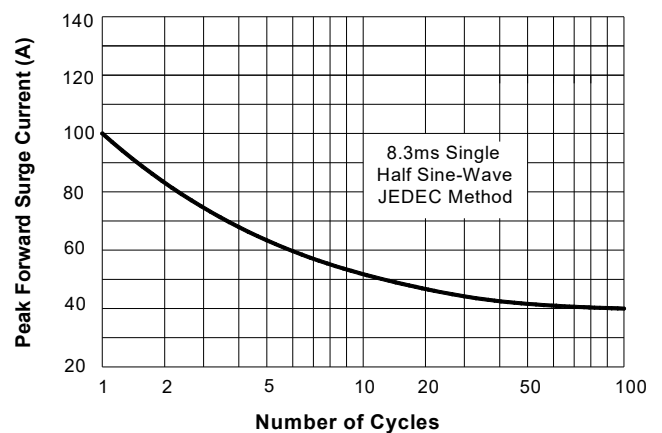
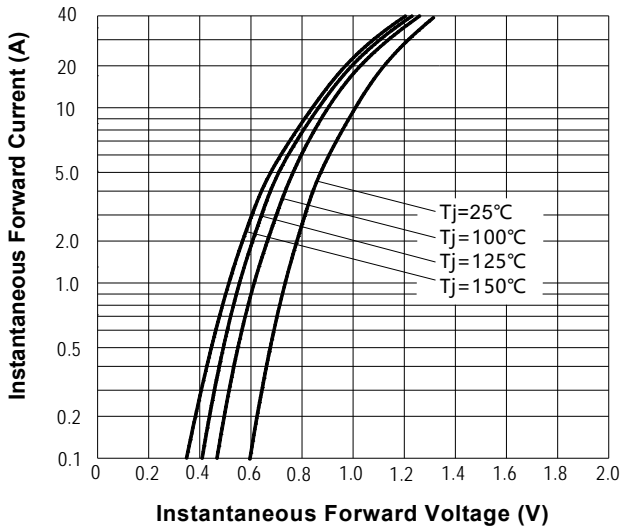


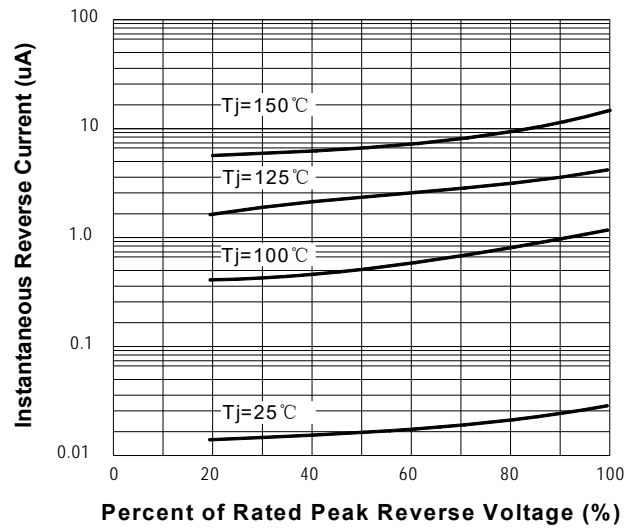
FIG2: Surge Forward Current Capability



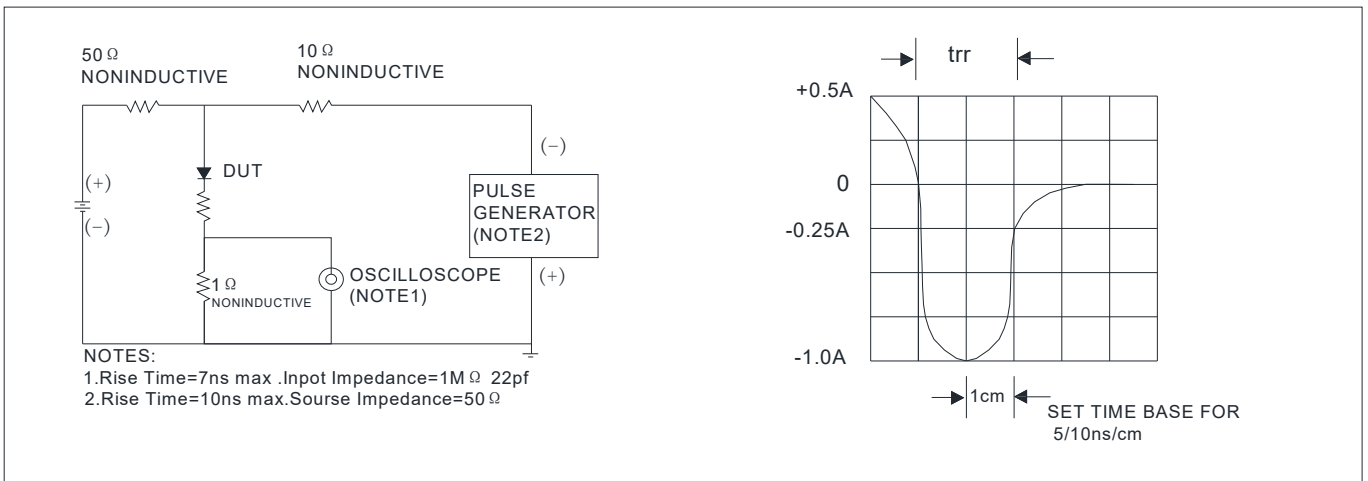
**FIG3: Forward Voltage**



**FIG.4: Instantaneous Reverse Characteristics**



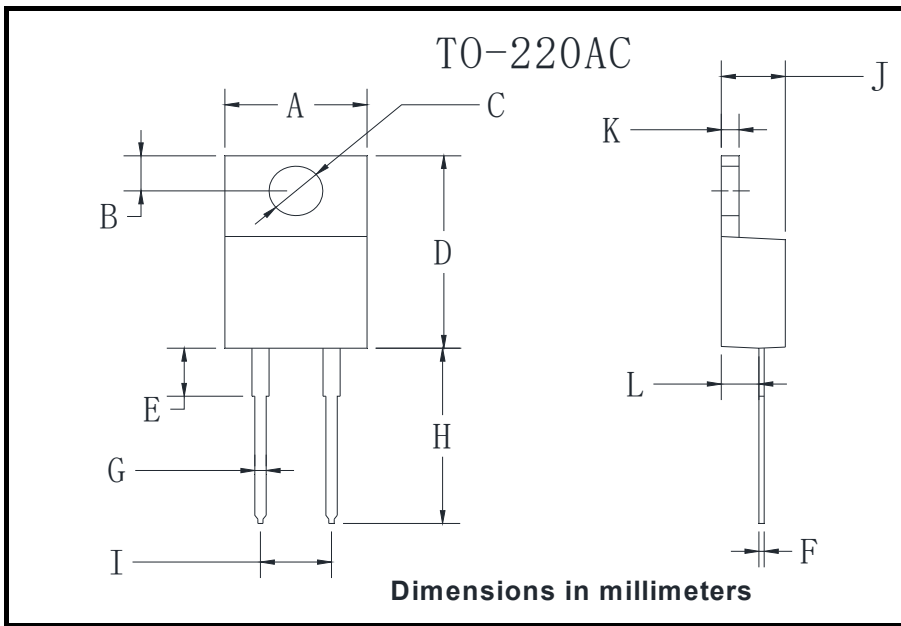
**FIG.5: Diagram of circuit and Testing wave form of reverse recovery time**





# MUR820

## ■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



## MUR820

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