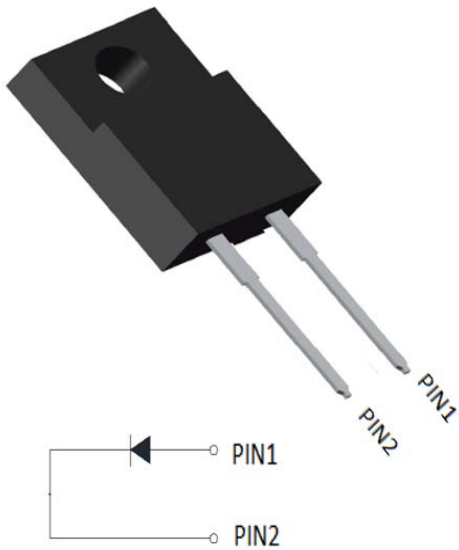


## Ultra-Fast Recovery Diodes 8A FRED



### 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:** ITO-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 (T<sub>j</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR820F
Device marking code			MUR820F
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	200
Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)	I <sub>o</sub>	A	8
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	100
Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C	I <sup>2</sup> t	A <sup>2</sup> s	41
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	70
Mounting torque @recommend torque: 5kg·cm	Tor	kg·cm	8



# MUR820F

## ■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=8.0A$ @ $T_j=25^\circ C$	-	0.90	1.0
			$I_{FM}=8.0A$ @ $T_j=150^\circ C$		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
			$T_j=25^\circ C$	-	20	-
			$T_j=125^\circ C$	-	35	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^\circ C$	-	3.7	-
			$T_j=125^\circ C$	-	6.4	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^\circ C$	-	34	-
			$T_j=125^\circ C$	-	115	-

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

PARAMETER		SYMBOL	UNIT	MUR820F
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^\circ C/W$	4.0
	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
MUR820F	Approximate 1.6	50	1000	5000	Tube

## ■Characteristics (Typical)

FIG1:  $I_o - T_c$  Curve

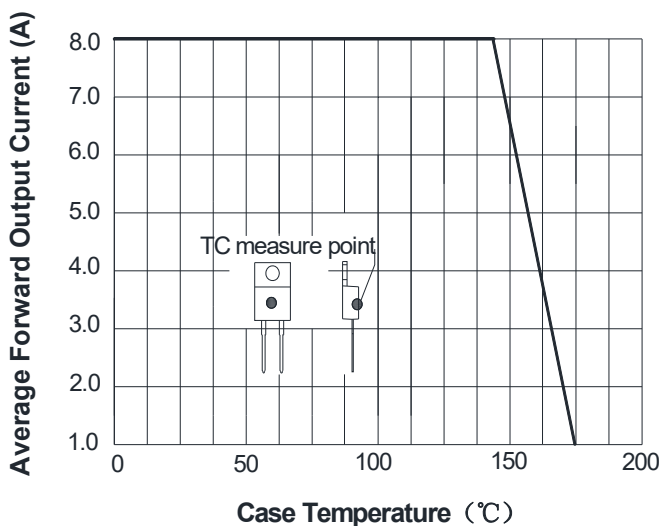
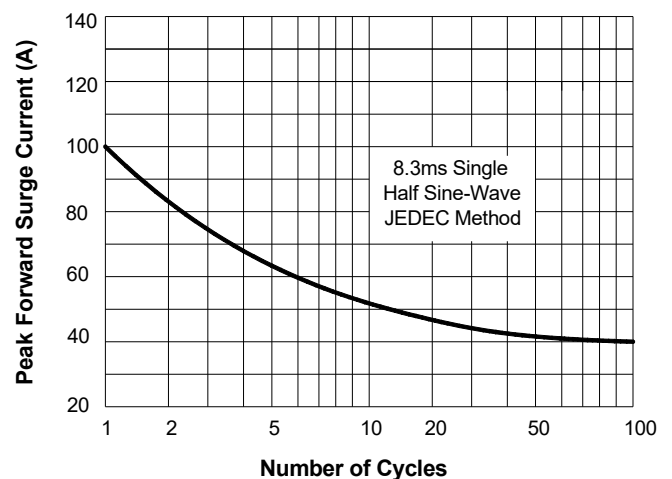


FIG2: Surge Forward Current Capability





# MUR820F

FIG3: Forward Voltage

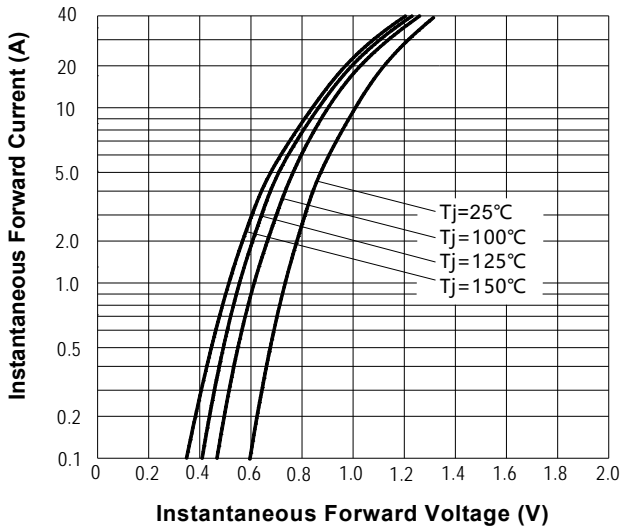


FIG.4: Instantaneous Reverse Characteristics

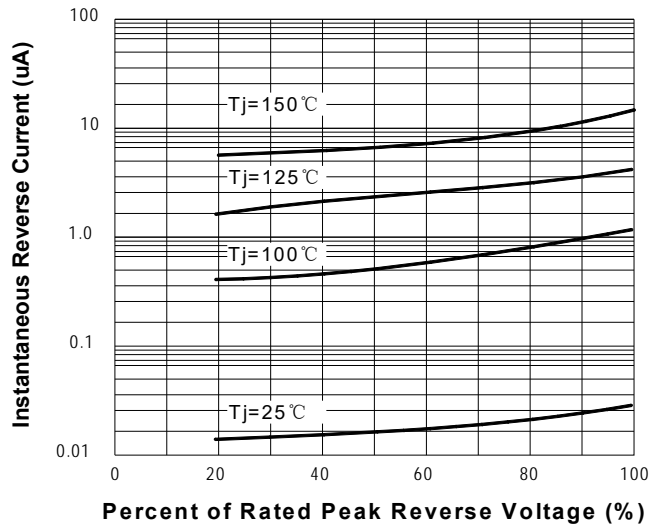
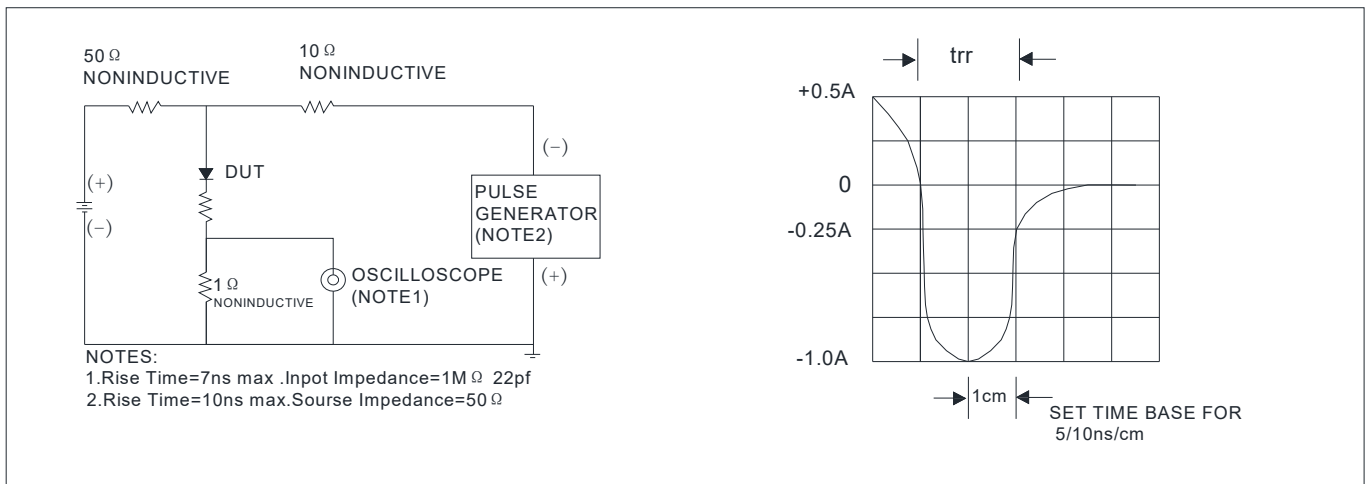


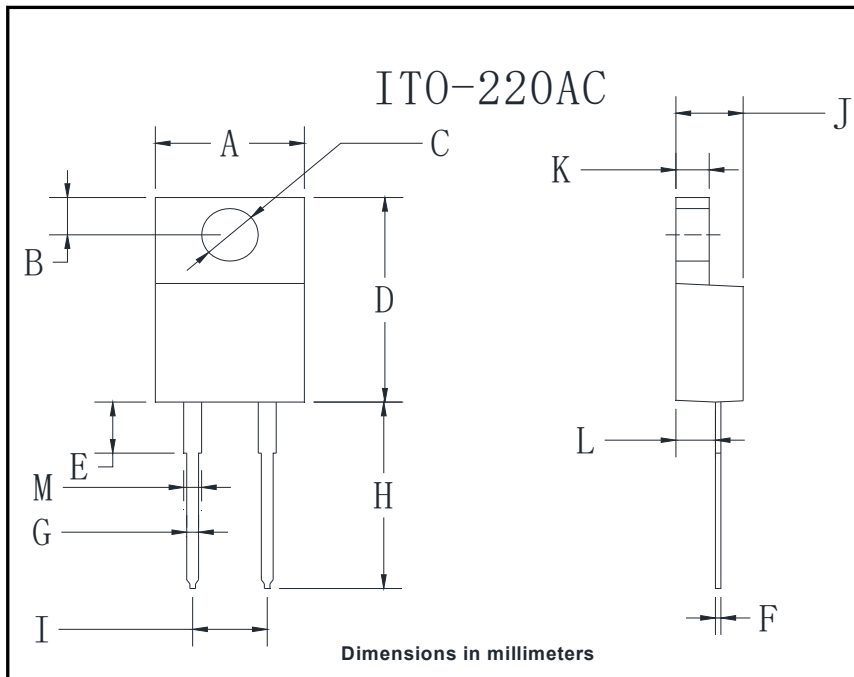
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





# MUR820F

## ■Outline Dimensions



ITO-220AC		
Dim	Min	Max
A	9.8	10.2
B	2.25	2.75
C	2.95	3.45
D	14.75	15.25
E	3.5	4.1
F	0.45	0.75
G	0.45	0.75
H	13.35	14.15
I	4.97	5.23
J	4.3	4.8
K	2.5	2.74
L	2.58	2.82
M	1.03	1.43



# MUR820F

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