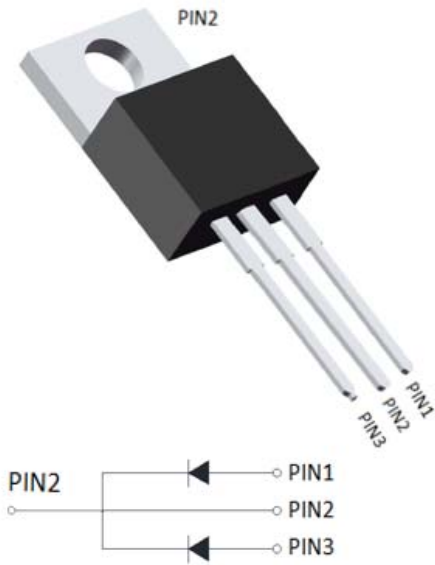


## Ultra-Fast Recovery Diodes 10A\*2 FRED



### 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

### Typical Applications

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

### Mechanical Data

- **Package:** TO-220AB  
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	MUR2040CT
Device marking code			MUR2040CT
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	400
Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)	I <sub>o</sub>	A	20
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	120
Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C,	I <sup>2</sup> t	A <sup>2</sup> s	60
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	50



# MUR2040CT-B1-W5094HF

## ■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=10.0A @ T_j=25^{\circ}C$	-	1.15	1.30
			$I_{FM}=10.0A @ T_j=150^{\circ}C$	-	0.9	1.0
DC reverse current at rated DC blocking voltage per diode	$I_{RRM1}$	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$	-	-	5
	$I_{RRM2}$		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	40	100
Reverse Recovery Time	$T_{rr}$	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$	-	25	35
			$T_j=25^{\circ}C$	-	33.5	-
			$T_j=125^{\circ}C$	-	54.8	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}C$	-	4.1	-
			$T_j=125^{\circ}C$	-	8.1	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}C$	-	68.3	-
			$T_j=125^{\circ}C$	-	226.7	-

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

PARAMETER		SYMBOL	UNIT	MUR2040CT
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	2.0
Thermal Resistance	Between junction and Air	$R_{\theta J-A}$	$^{\circ}C/W$	50

## ■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR2040CT	Approximate 1.88	50	1000	5000	Tube

## ■Characteristics (Typical)

FIG1:  $I_o$  -  $T_c$  Curve

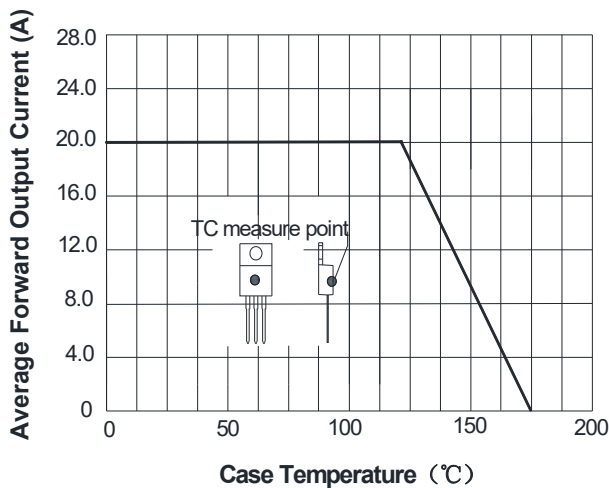
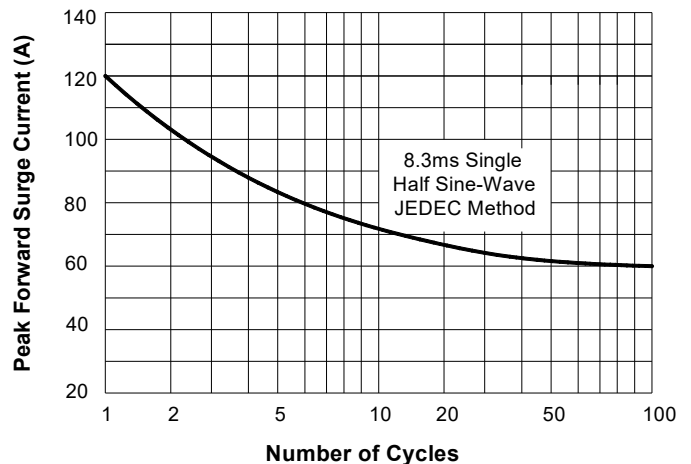


FIG2: Surge Forward Current Capability





# MUR2040CT-B1-W5094HF

FIG3: Forward Voltage

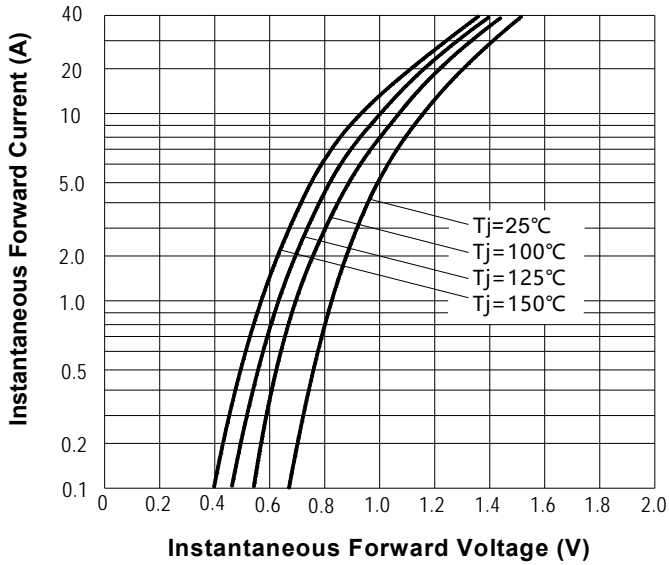


FIG.4: Instantaneous Reverse Characteristics

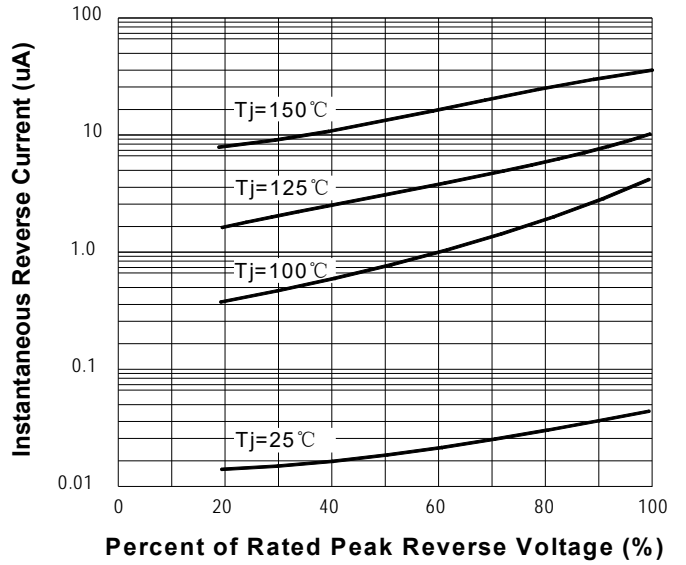
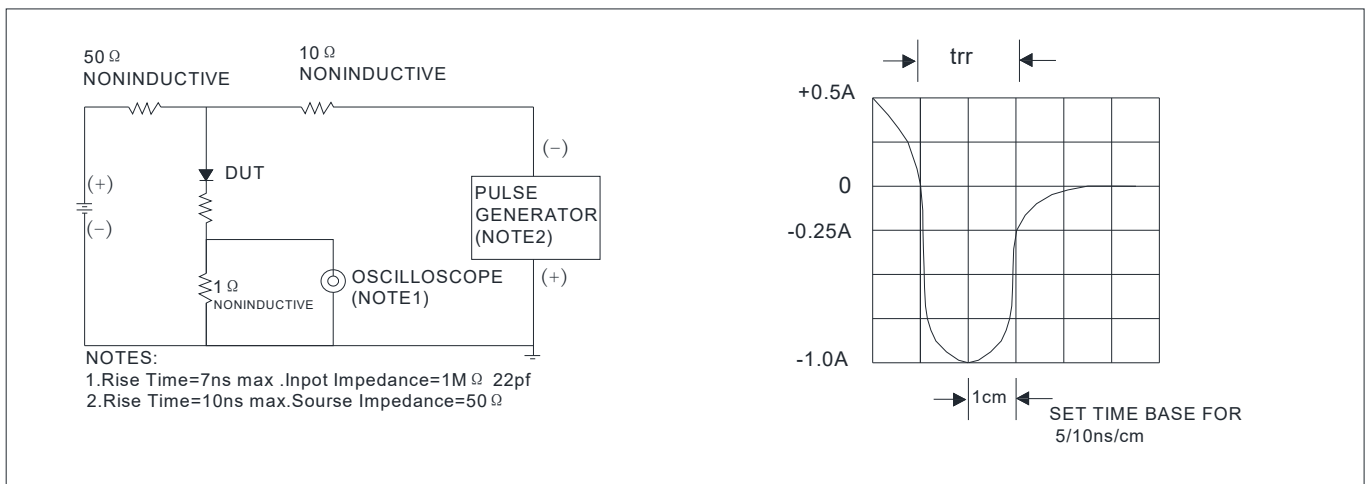


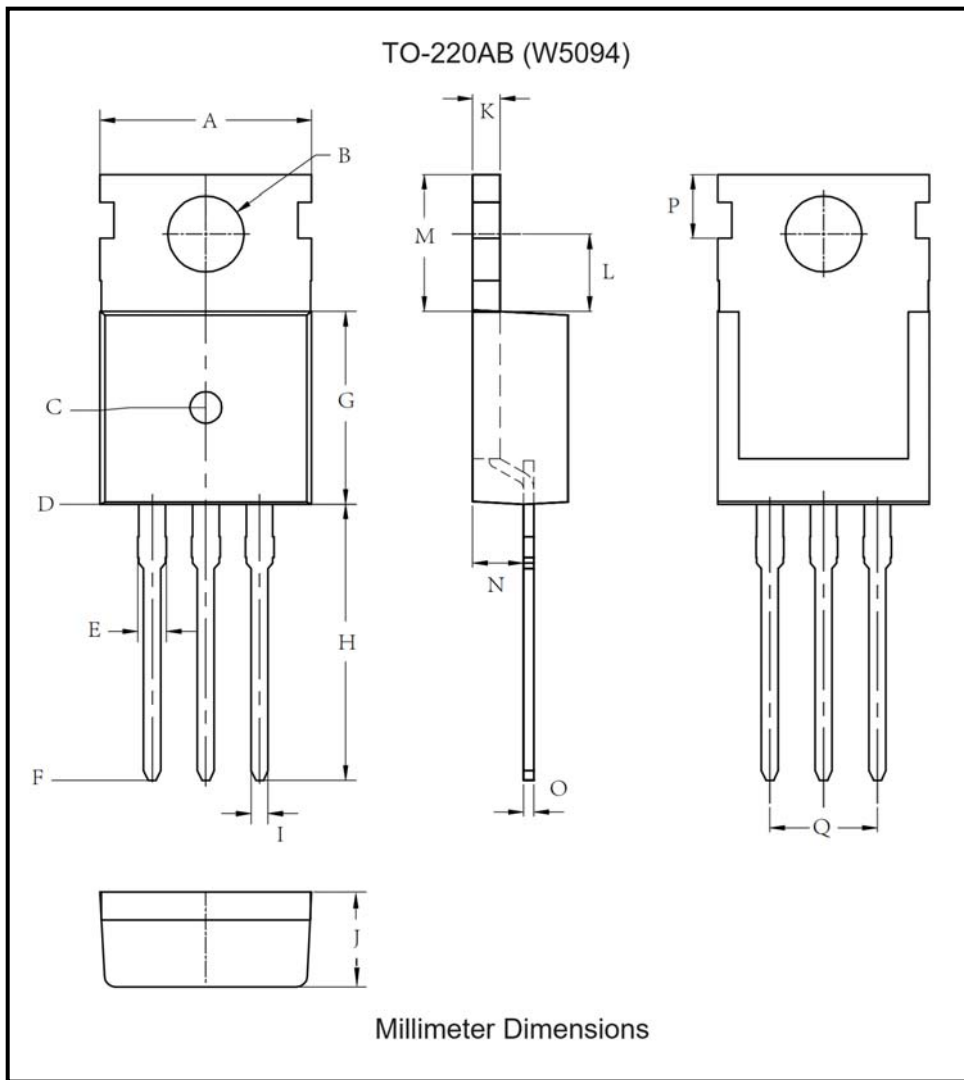
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





# MUR2040CT-B1-W5094HF

## ■Outline Dimensions



TO-220AB		
Dim	Min	Max
A	9.9	10.1
B	TYP 3.6	
C	8.06	8.46
D	12.67	13.07
E	1.28	1.42
F	25.7	26.3
G	9	9.4
H	12.93	13.33
I	TYP 0.8	
J	4.3	4.7
K	1.285	1.315
L	3.47	3.87
M	6.27	6.67
N	2.2	2.6
O	0.485	0.515
P	2.8	3.2
Q	TYP 5.08	



## MUR2040CT-B1-W5094HF

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