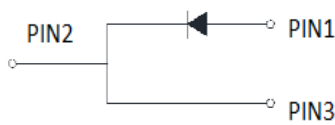


Ultra-Fast Recovery Diodes 10A FRED



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-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_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR1040
Device marking code			MUR1040
Repetitive Peak Reverse Voltage	V _{RRM}	V	400
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _o	A	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C	I _{FSM}	A	120
Current Squared Time @1ms≤t≤8.3ms T _j =25°C.	I ² t	A ² s	60
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C _j	pF	50



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■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	
			$T_j=25^{\circ}C$	-	30	-	
			$T_j=125^{\circ}C$	-	50	-	
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}C$	$I_F=10A$ $di/dt=-200A/us$ $V_{RM}=200V$	-	3.3	-
			$T_j=125^{\circ}C$		-	6.8	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}C$		-	50	-
			$T_j=125^{\circ}C$		-	170	-

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

PARAMETER		SYMBOL	UNIT	MUR1040
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
MUR1040	Approximate 1.8	50	1000	5000	Tube



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■ Characteristics (Typical)

FIG1: I_o - T_c Curve

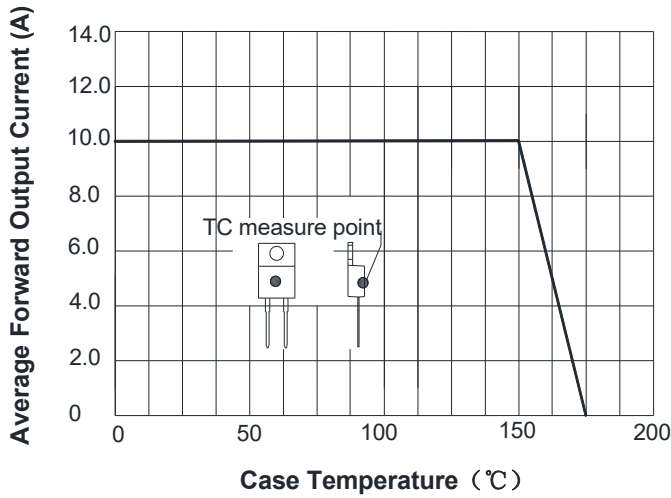


FIG2: Surge Forward Current Capability

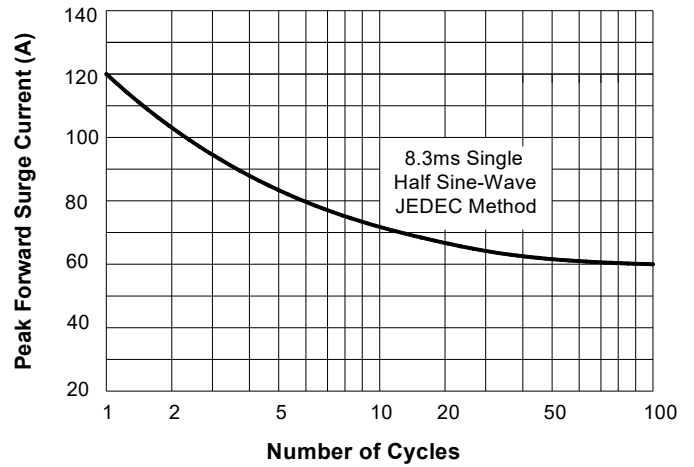


FIG3: Forward Voltage

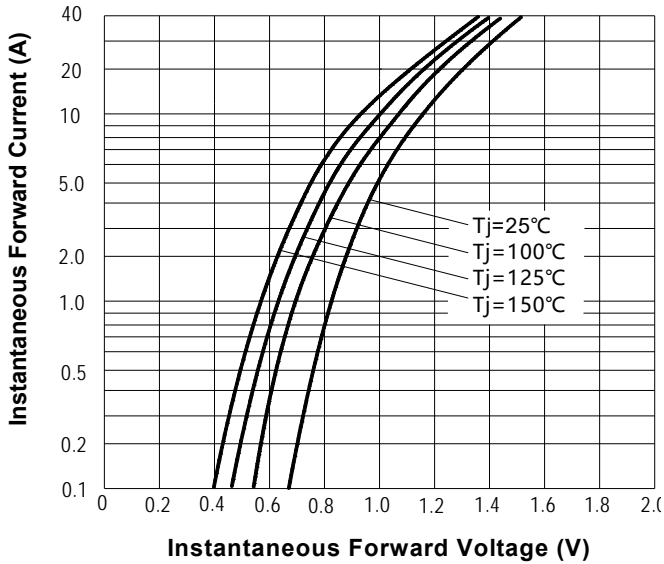


FIG4: Instantaneous Reverse Characteristics

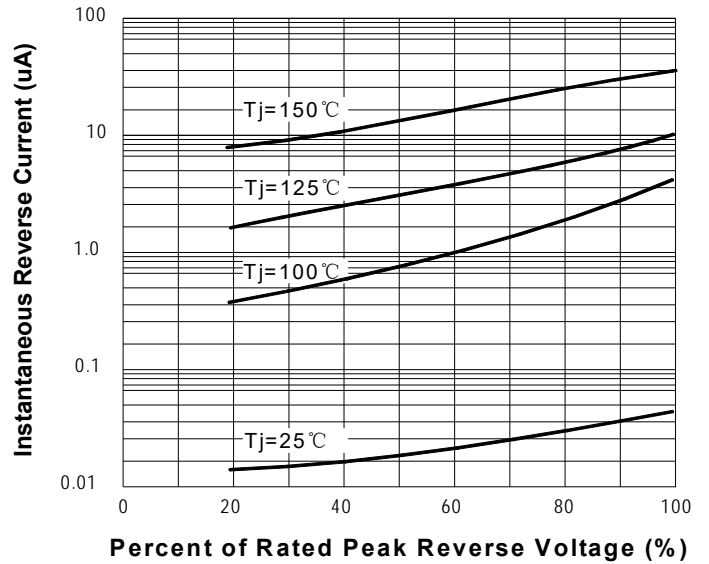
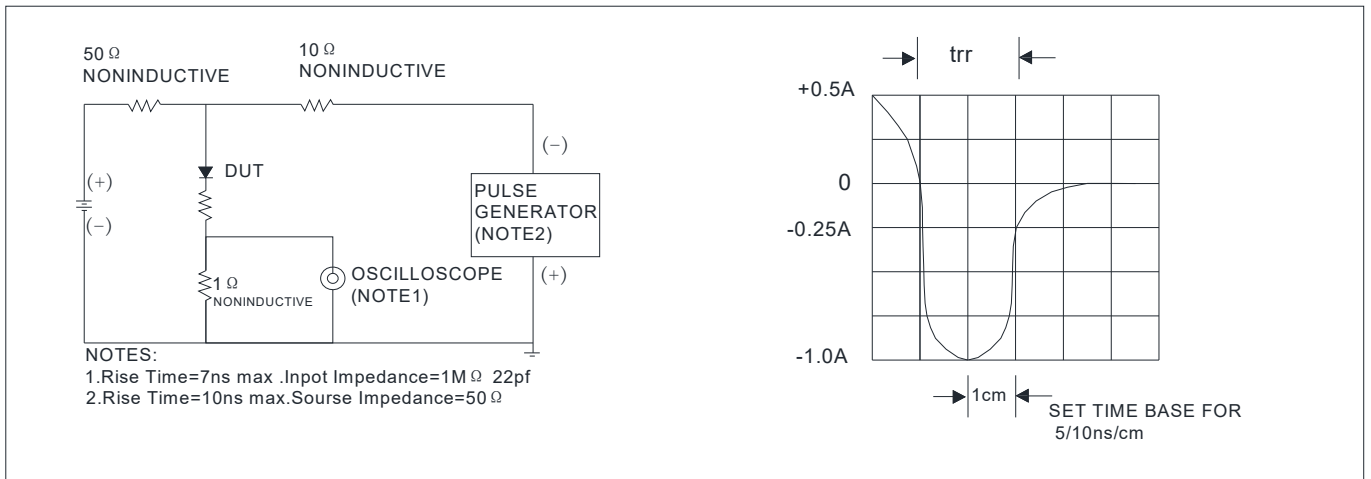


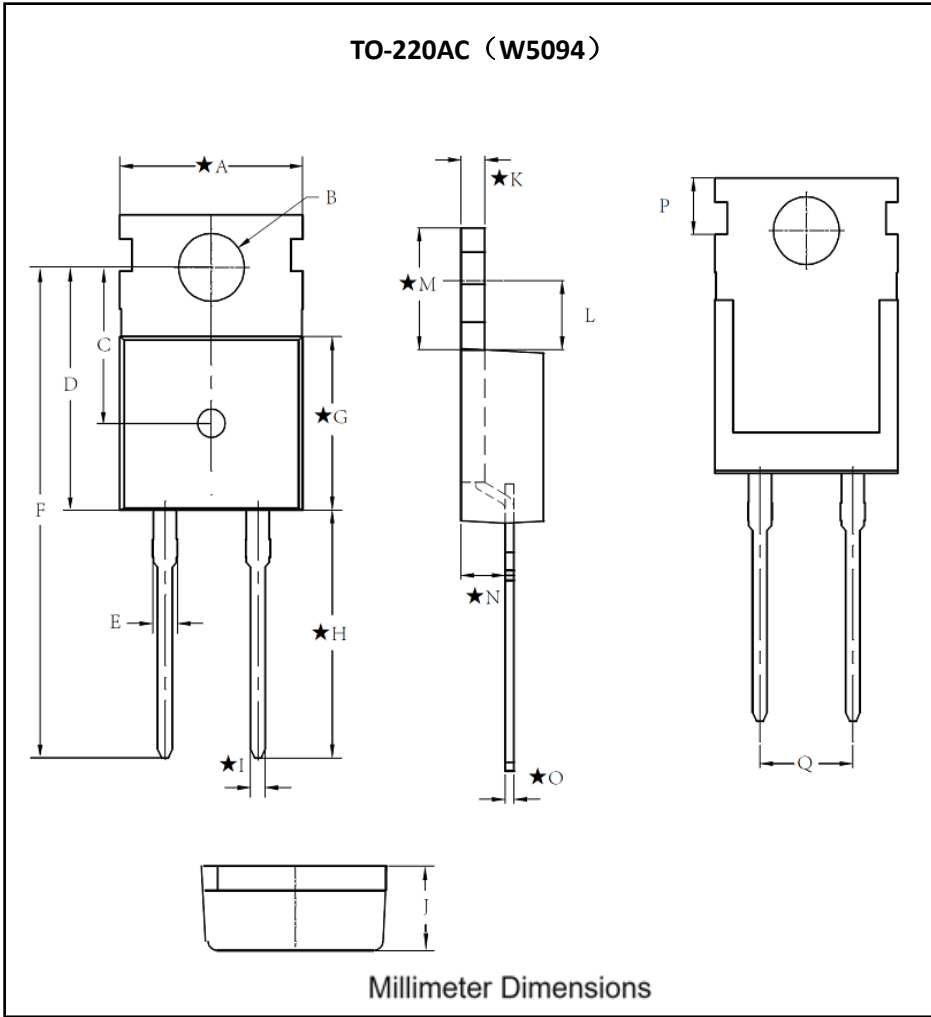
FIG5: Diagram of circuit and Testing wave form of reverse recovery time





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■Outline Dimensions



TO-220AC		
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	9.0	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	



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