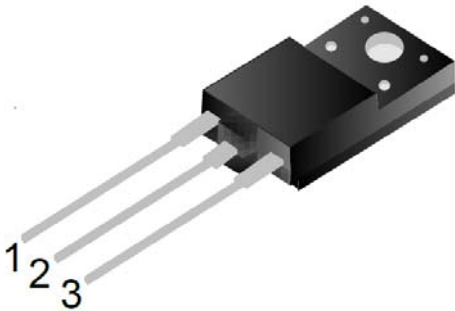


Ultra-Fast Recovery Diodes 10A*2 FRED



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-3PF
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	MUR2020FPT
Device marking code			MUR2020FPT
Repetitive Peak Reverse Voltage	V _{RRM}	V	200
Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1)	I _o	A	20
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
Single Pulse Avalanche Energy @ T _p =40uS, T _j =25°C,L=15mH	EAS	mJ	245
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C _j	pF	150



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■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=10.0A$ @ $T_j=25^{\circ}C$	-	0.90	1.0
			$I_{FM}=10.0A$ @ $T_j=150^{\circ}C$	-	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}		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	30	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
			$T_j=25^{\circ}C$	-	20	-
			$T_j=125^{\circ}C$	-	35	-
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}C$	-	3.0	-
			$T_j=125^{\circ}C$			
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}C$	-	30	-
			$T_j=125^{\circ}C$	-	100	-

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

PARAMETER		SYMBOL	UNIT	MUR2020FPT
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	3

■Characteristics (Typical)

FIG1: I_o - T_c Curve

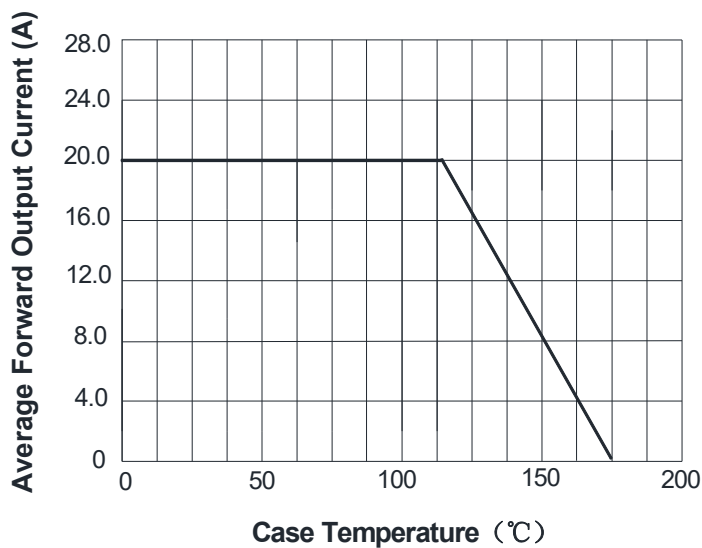


FIG2: Surge Forward Current Capability

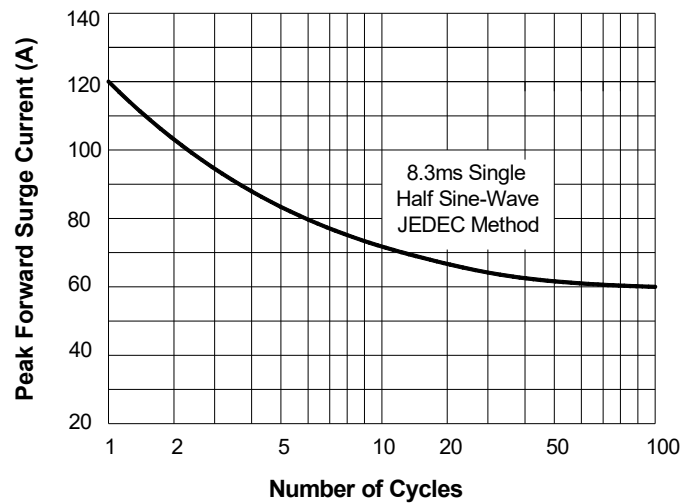


FIG3: Forward Voltage

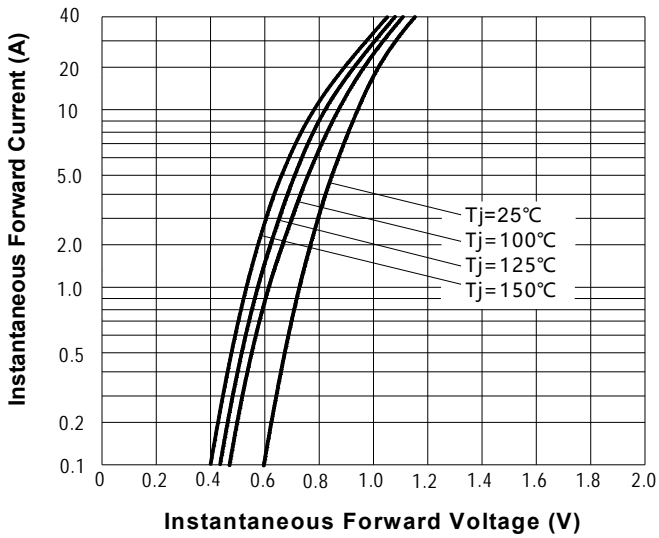


FIG.4: Instantaneous Reverse Characteristics

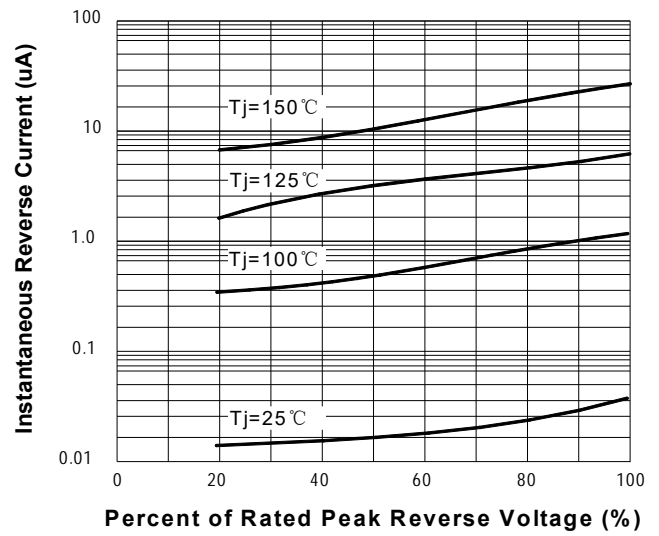
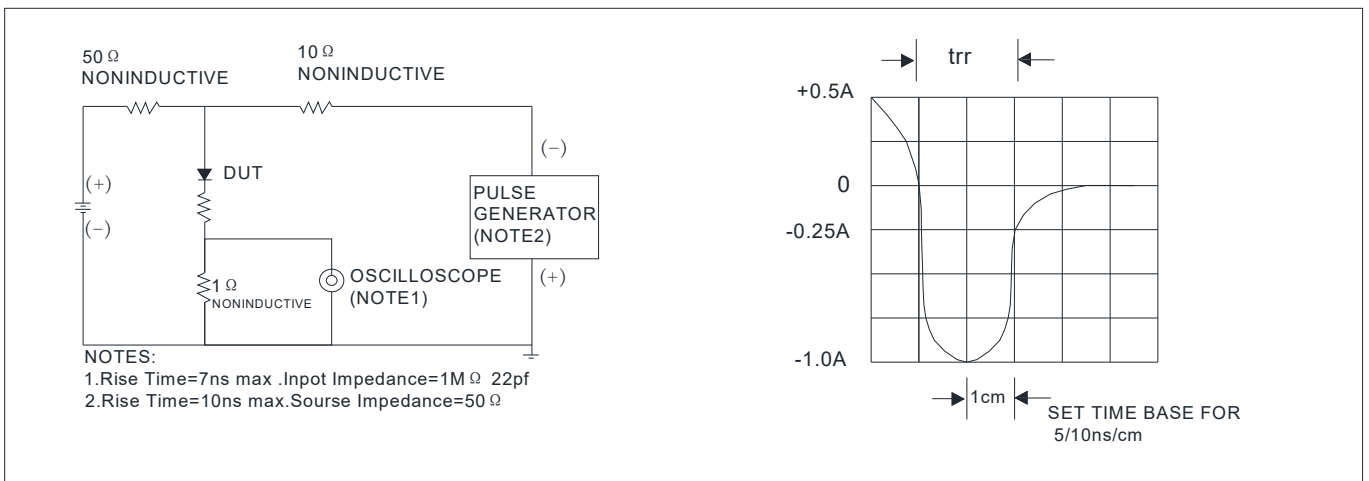


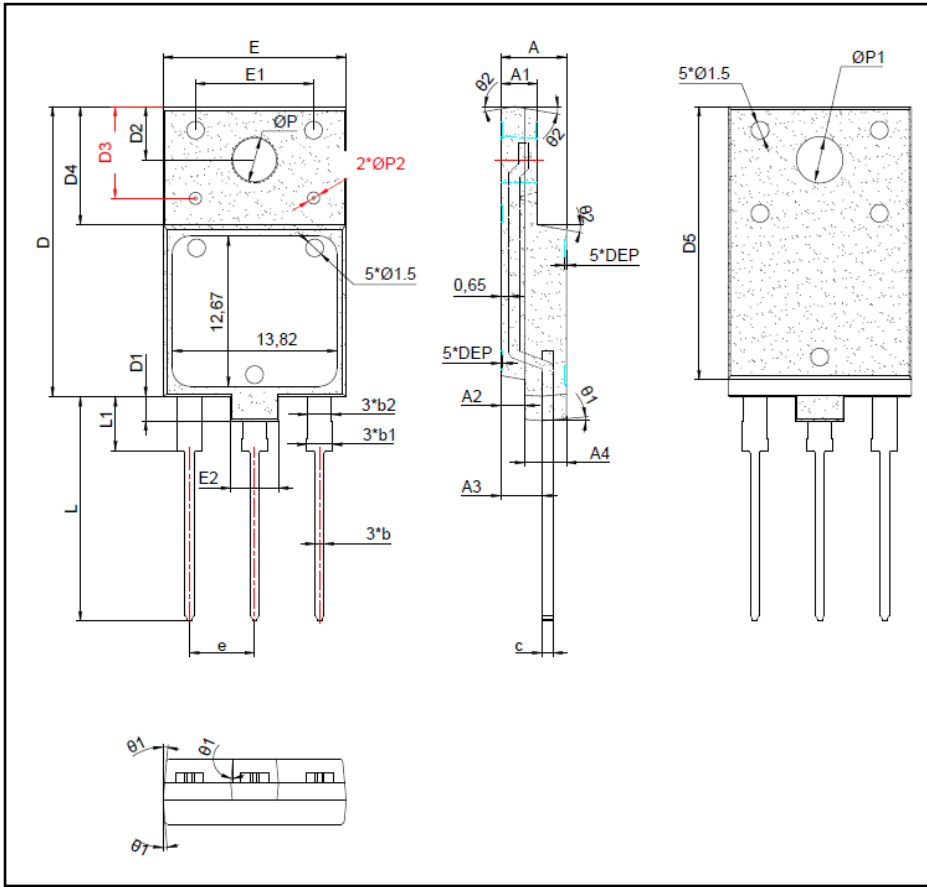
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





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■Outline Dimensions



TO-3PF		
Dim	Min	Max
A	5.30	5.70
A1	2.85	3.25
A2	1.85	2.15
A3	3.30	3.60
A4	3.35	3.65
b	0.68	0.83
b1	2.06	3.26
b2	1.92	2.08
c	0.82	0.98
D	24.20	24.60
D1	1.85	2.25
D2	3.35	4.65
D3	7.55	7.85
D4	9.76	10.16
D5	22.75	23.25
E	15.15	15.55
E1	9.75	10.25
E2	3.85	4.15
e	5.40	5.50
L	18.70	19.10
L1	4.40	4.70
ØP	3.57	3.77
ØP1	3.80	4.00
ØP2	0.90	1.10
θ 1	2°	8°
θ 2	7°	13°
DEP	0.00	0.15



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