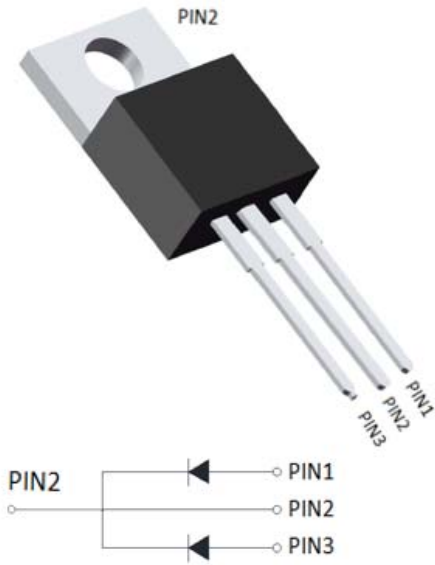


Ultra-Fast Recovery Diodes 20A FRED



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_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURS2030CTS
Device marking code			MURS2030CTS
Repetitive Peak Reverse Voltage	V _{RRM}	V	300
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 _a =25°C	I _{FSM}	A	150
Current Squared Time @1ms≤t≤8.3ms T _j =25°C,	I ² t	A ² s	93.37
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C _j	pF	93



MURS2030CTS

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=10.0A$ @ $T_j=25^{\circ}C$	-	1.20	1.40	
			$I_{FM}=10.0A$ @ $T_j=125^{\circ}C$		0.95	1.20	
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$	-	-	20	
	I_{RRM2}		$V_{RM}=V_{RRM}$ $T_j=125^{\circ}C$	-	-	300	
Reverse Recovery Time	T_{RR}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$	-	17	25	
			$T_j=25^{\circ}C$	-	37	-	
			$T_j=125^{\circ}C$	-	46	-	
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}C$	$I_F=10A$ $di/dt=-200A/us$ $V_{RM}=200V$	-	2.25	-
			$T_j=125^{\circ}C$		-	5.54	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}C$		-	41	-
			$T_j=125^{\circ}C$		-	128	-

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

PARAMETER		SYMBOL	UNIT	MURS2030CTS
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	2.5
	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
MURS2030CTS	Approximate 1.6	50	1000	5000	Tube

■ Characteristics (Typical)

FIG1: I_o -T_c Curve

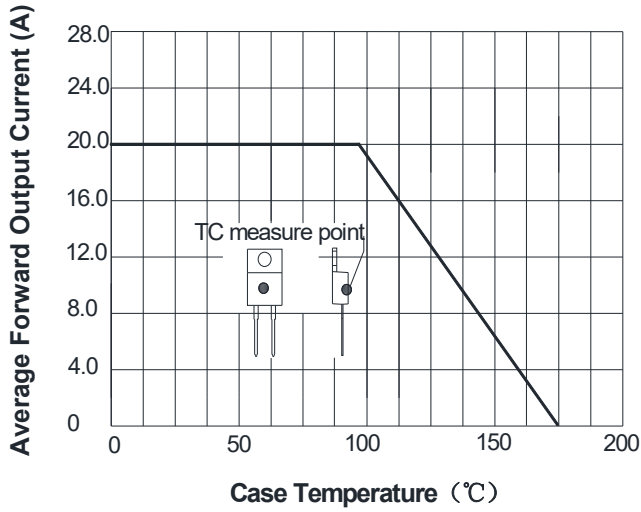


FIG2: Surge Forward Current Capability

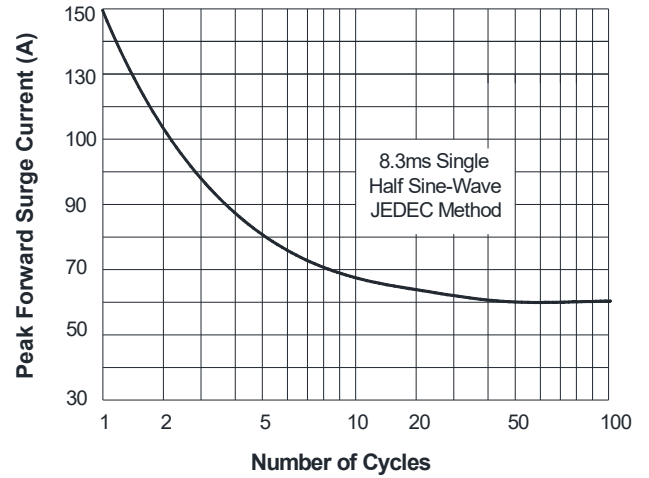


FIG3: Forward Voltage

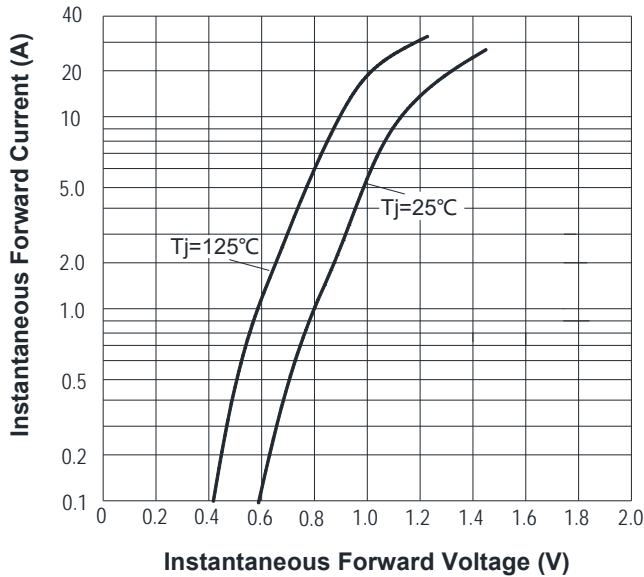


FIG.4: Instantaneous Reverse Characteristics

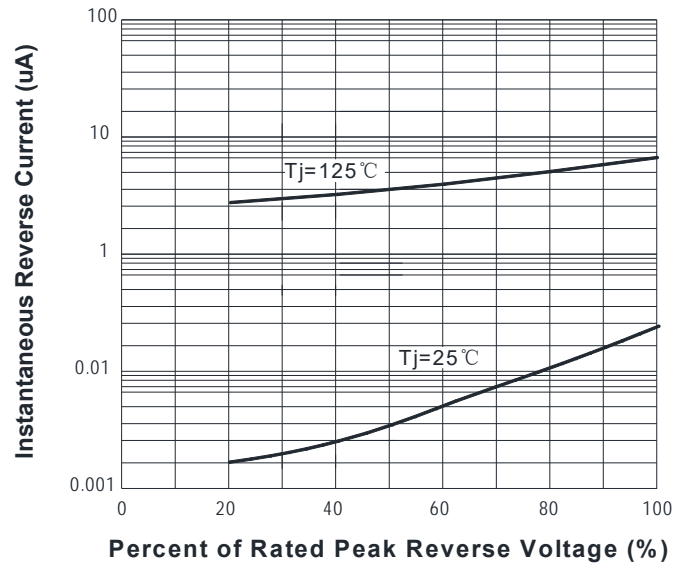
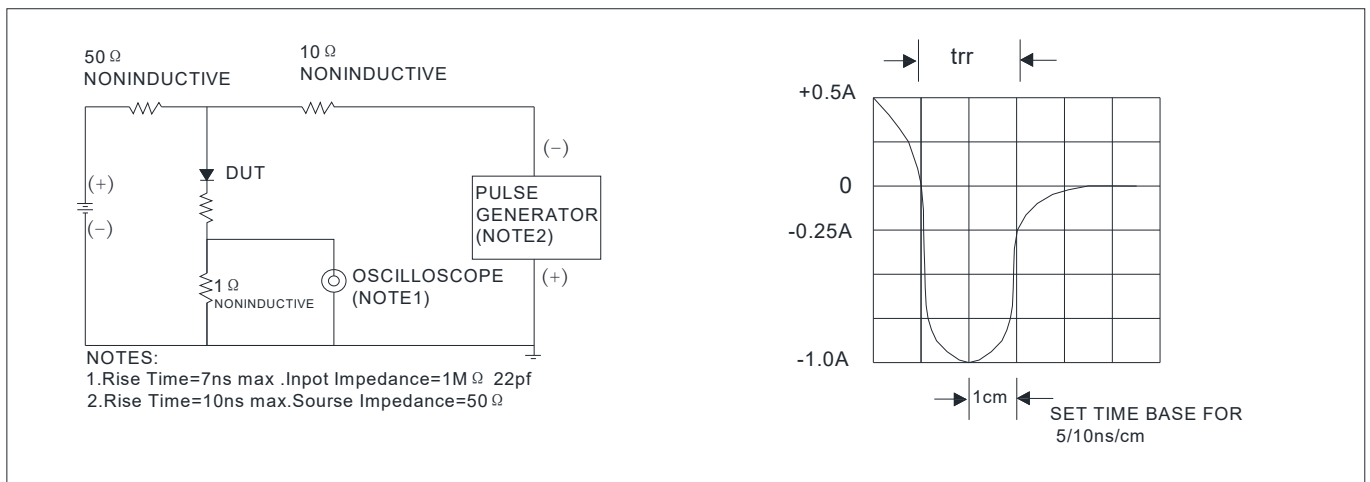


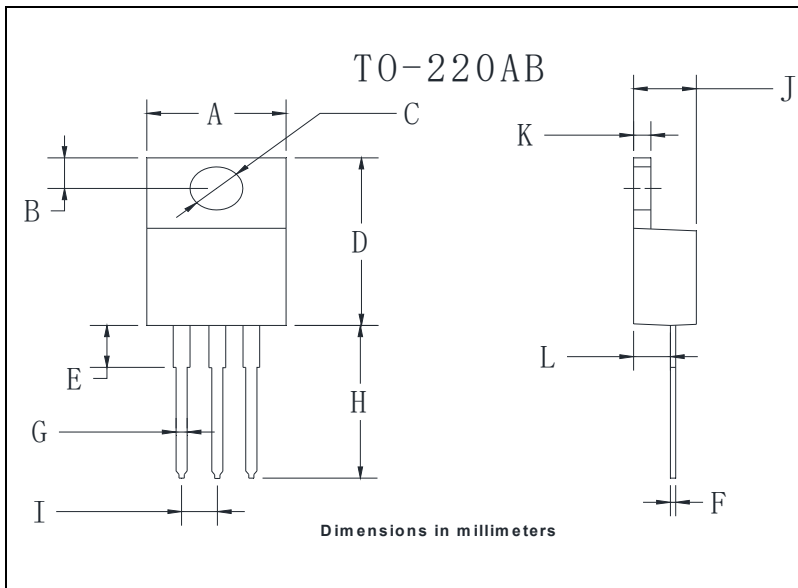
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





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■Outline Dimensions



TO-220AB		
Dim	Min	Max
A	9.95	10.35
B	2.55	2.95
C	3.8	4.0
D	14.95	15.25
E	3.75	4.25
F	0.26	0.5
G	0.68	0.94
H	13.4	13.9
I	2.35	2.65
J	4.38	4.78
K	1.14	1.4
L	2.37	2.79



MURS2030CTS

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