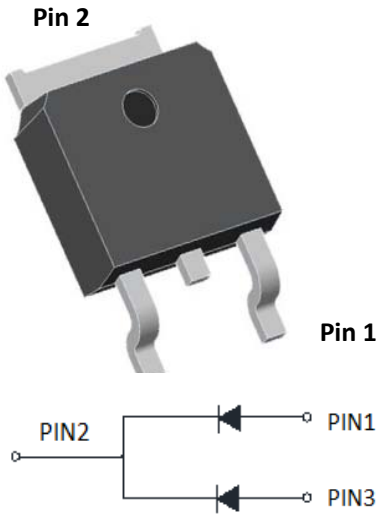
Ultra-Fast Recovery Diodes 5A*2 FRED



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-252
  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 (Tj=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR1020CD
Device marking code			MUR1020CD
Repetitive Peak Reverse Voltage	V_{RRM}	V	200
Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1)	I_O	A	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Tj=25℃	I_{FSM}	A	50
Current Squared Time @1ms≤t≤8.3ms Tj=25℃,	I^2t	A^2s	10
Storage Temperature	Tstg	℃	-55 ~ +175
Junction Temperature	Tj	℃	-55 ~ +175
Typical Junction capacitance @4V,1MHz	Cj	pF	50

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	I_{FM}=5.0A @Tj=25℃		-	0.90	1.0
			I_{FM}=5.0A @Tj=150℃			0.78	0.9
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	V_{RM}=V_{RRM} Tj=25℃		-	-	5
	I_{RRM2}		V_{RM}=V_{RRM} Tj=150℃		-	25	50
Reverse Recovery Time	Trr	ns	I_F=0.5A I_{RM}=1A I_{RR}=0.25A Tj=25℃		-	25	35
			Tj=25℃	I_F=5A di/dt=-200A/us V_{RM}=100V	-	17.4	-
			Tj=125℃		-	29.4	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	3.11	-
			Tj=125℃		-	5.43	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	29.64	-
			Tj=125℃		-	80	-

■Thermal Characteristics （Tj=25℃ Unless otherwise specified）

PARAMETER		SYMBOL	UNIT	MUR1020CD
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	℃/W	5.0
Thermal Resistance	Between junction and Air	$R_{\theta J-A}$	℃/W	50

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR1020CD	Approximate 0.32	2500	2500	25000	Reel

■Characteristics (Typical)

FIG1:Io -Tc Curve

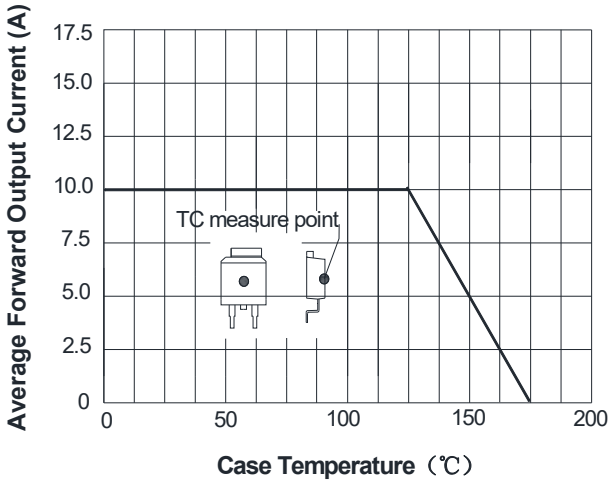


FIG2:Surge Forward Current Capability

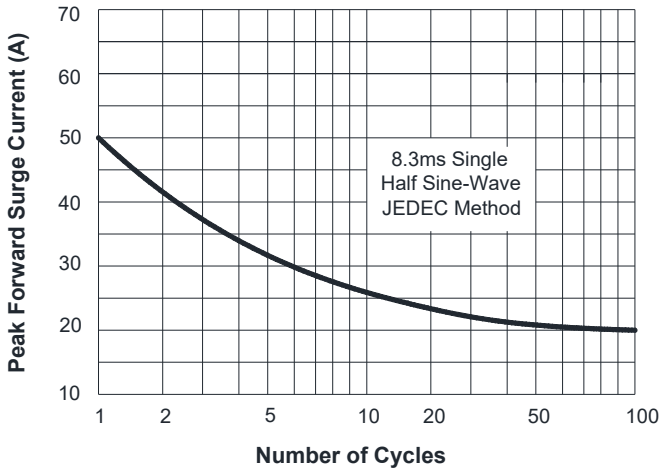


FIG3: Forward Voltage

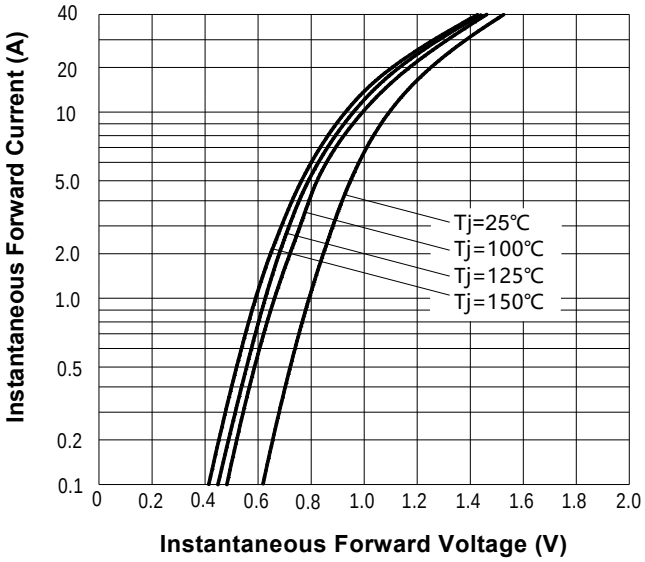


FIG.4: Instantaneous Reverse Characteristics

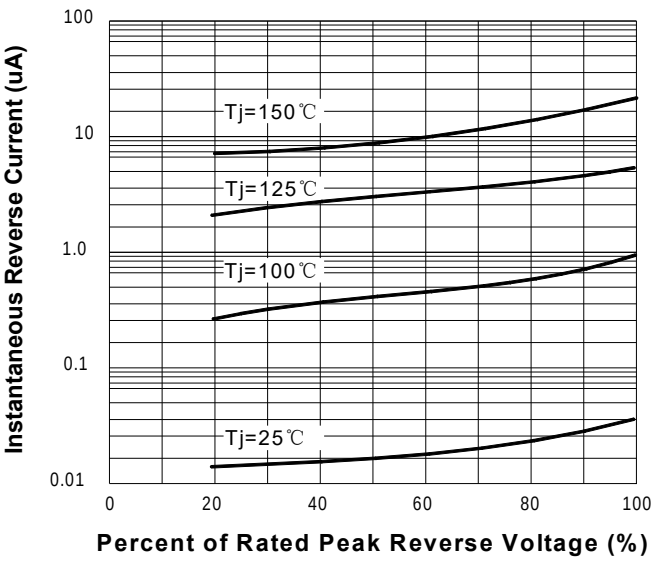
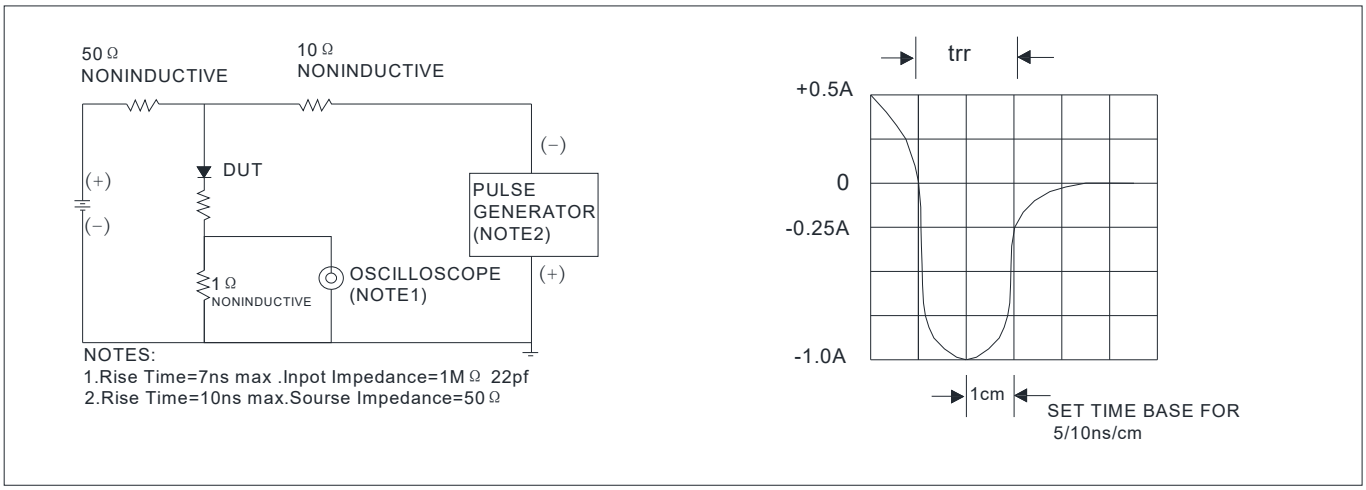
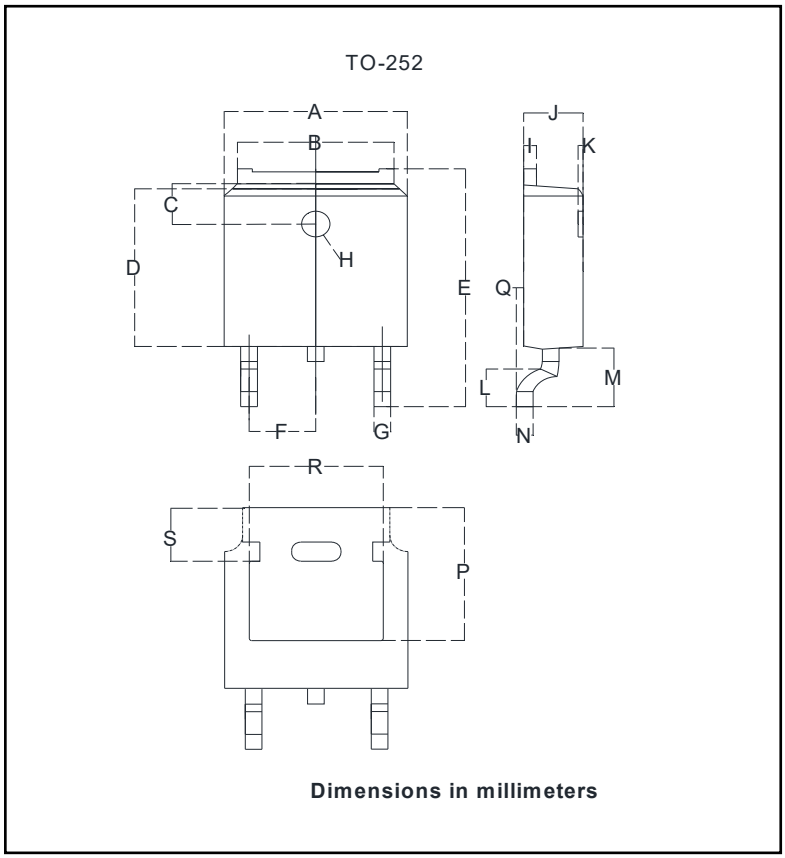


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

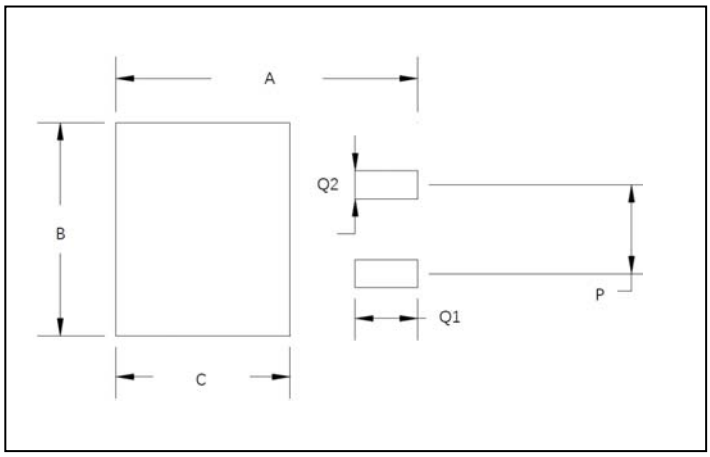


■Outline Dimensions



TO-252		
Dim	Min	Max
A	6.500	6.700
B	5.100	5.460
C	1.400	1.800
D	6.000	6.200
E	10.000	10.400
F	2.166	2.366
G	0.660	0.860
H	Φ1.050	Φ1.350
I	0.460	0.580
J	2.200	2.400
K	0	0.300
L	0.890	2.290
M	2.730	3.080
N	0.430	0.580
P	5.15	5.45
Q	0	0.2
R	4.50	5.10
S	1.60	2.40

■ Suggested Pad Layout



Dim	Millimeters
A	11.4
B	6.74
C	6.23
P	4.56
Q1	2.28
Q2	1.52

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.