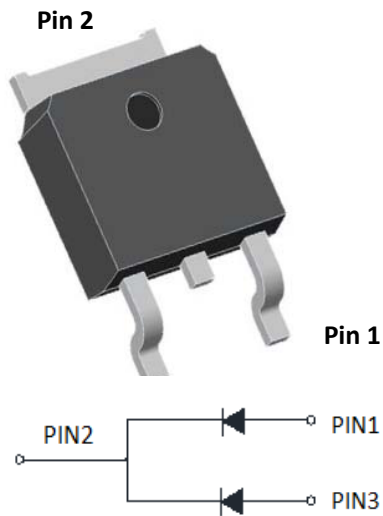


## Ultra-Fast Recovery Diodes 5A\*2 FRED



### 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 (T<sub>j</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR1020CD
Device marking code			MUR1020CD
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	200
Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)	I <sub>O</sub>	A	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	50
Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C,	I <sup>2</sup> t	A <sup>2</sup> s	10
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



# MUR1020CD

## ■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=5.0A @T_j=25^{\circ}C$	-	0.90	1.0
			$I_{FM}=5.0A @T_j=150^{\circ}C$		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
	$I_{RRM2}$		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$	-	25	50
Reverse Recovery Time	$T_{rr}$	ns	$I_F=0.5A I_{RM}=1A$ $I_{RR}=0.25A T_j=25^{\circ}C$	-	25	35
			$T_j=25^{\circ}C$	-	17.4	-
			$T_j=125^{\circ}C$	-	29.4	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}C$	-	3.11	-
			$T_j=125^{\circ}C$	-	5.43	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}C$	-	29.64	-
			$T_j=125^{\circ}C$	-	80	-

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

PARAMETER		SYMBOL	UNIT	MUR1020CD
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	5.0
Thermal Resistance	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
MUR1020CD	Approximate 0.32	2500	2500	25000	Reel

## ■Characteristics (Typical)

FIG1:  $I_o - T_c$  Curve

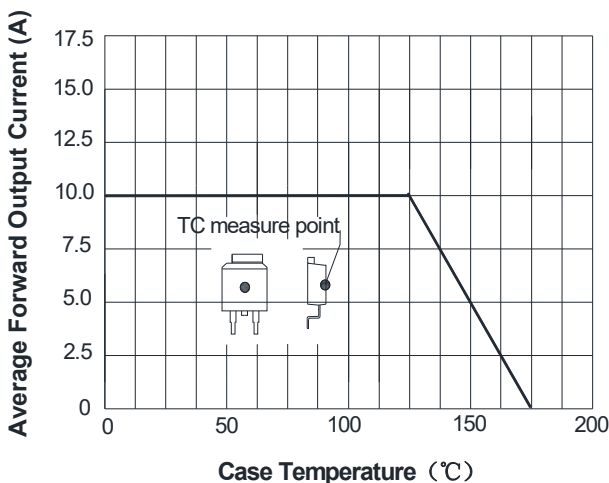
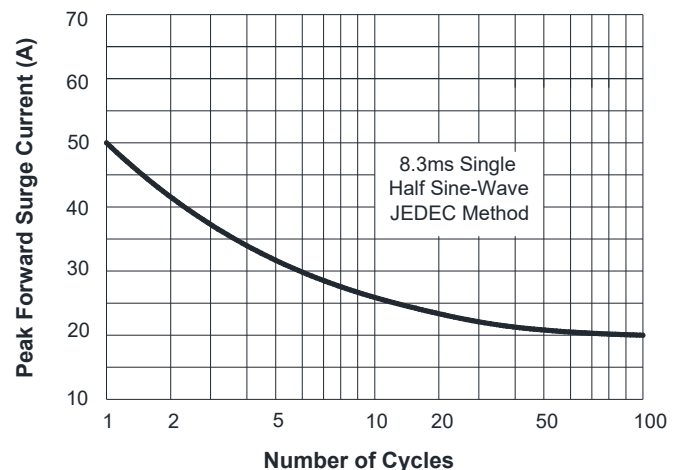


FIG2: Surge Forward Current Capability





# MUR1020CD

FIG3: Forward Voltage

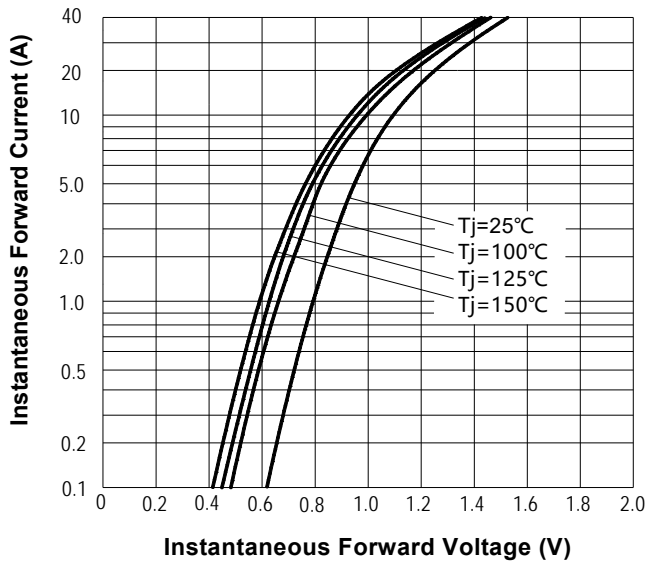


FIG.4: Instantaneous Reverse Characteristics

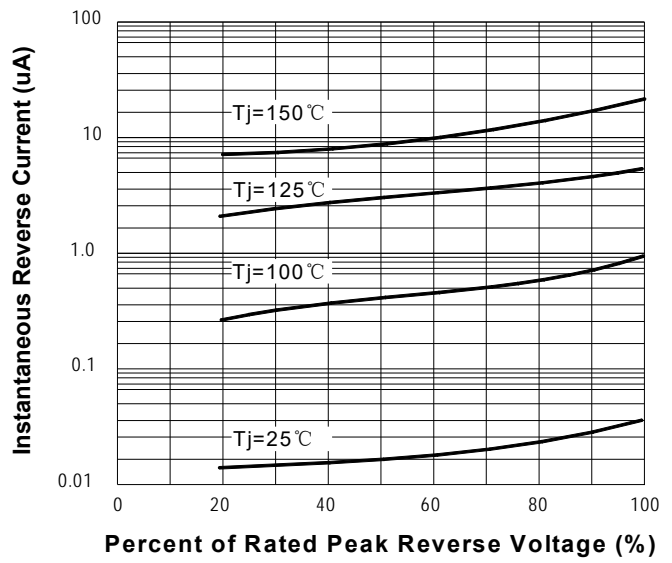
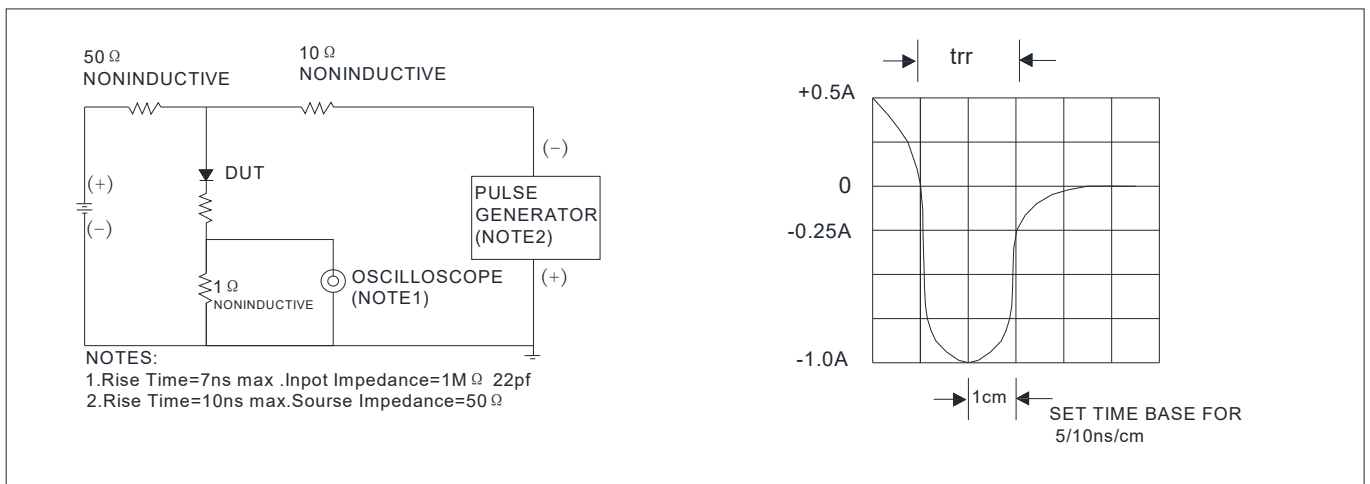


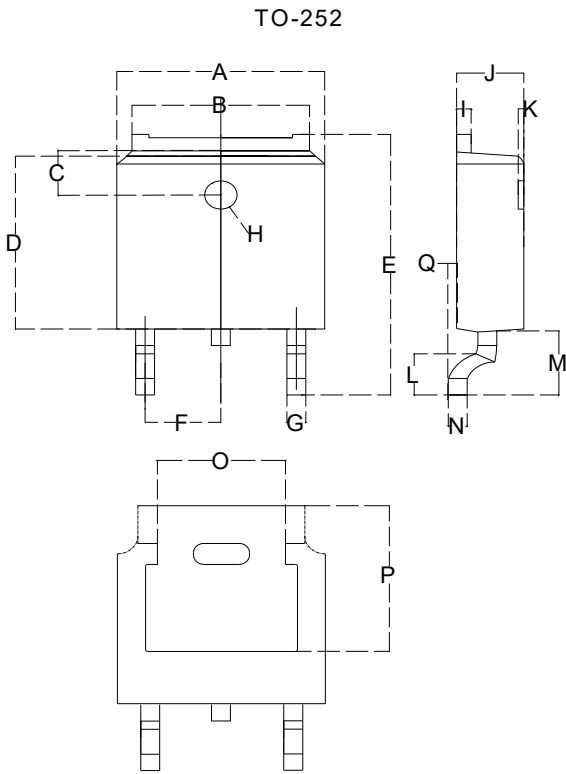
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





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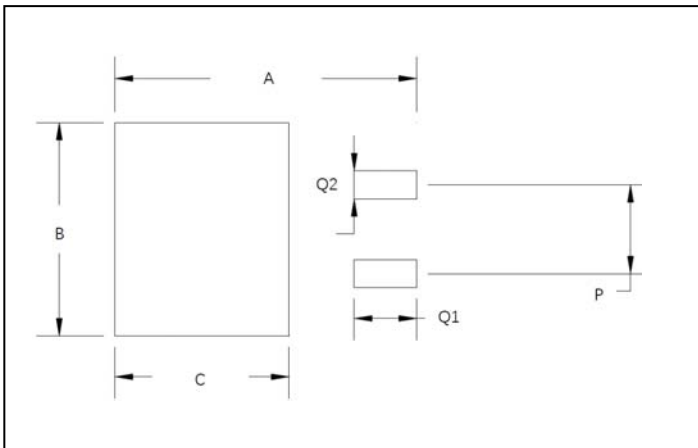
## ■ Outline Dimensions



TO-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	Φ 1.050	Φ 1.350
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
O	3.800	4.600
P	5.15	5.45
Q	0	0.2

Dimensions in millimeters

## ■ Suggested Pad Layout



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



## MUR1020CD

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