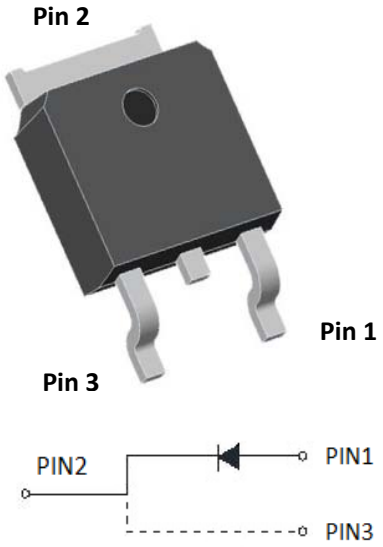
Ultra-Fast Recovery Diodes 10A FRED



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-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_j=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	MURL1060D
Device marking code			MURL1060D
Repetitive Peak Reverse Voltage	V_{RRM}	V	600
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℃	I_{FSM}	A	100
Current Squared Time @1ms≤t≤8.3ms Tj=25℃，	I^2t	A^2s	41
Storage Temperature	T_{stg}	℃	-55 ~ +175
Junction Temperature	T_j	℃	-55 ~ +175
Typical Junction capacitance @4V,1MHz	Cj	pF	115

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	IFM=10.0A @Tj=25℃		-	1.15	1.3
			IFM=10.0A @Tj=150℃		-	-	1.1
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	VRM=VRRM Tj=25℃		-	-	5.0
	I_{RRM2}		VRM=VRRM Tj=150℃		-	25	200
Reverse Recovery Time	Trr	ns	IF=0.5A IRM=1A IRR=0.25A Tj=25℃		-	42	75
			Tj=25℃	IF=10A di/dt=-200A/us V_{RM}=200V	-	160	-
			Tj=125℃		-	250	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	6.5	-
			Tj=125℃		-	10.0	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	565	-
			Tj=125℃		-	1250	-

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

PARAMETER		SYMBOL	UNIT	MURL1060D
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
MURL1060D	Approximate 0.31	2500	2500	25000	Reel

■Characteristics (Typical)

FIG1:Io -Tc Curve

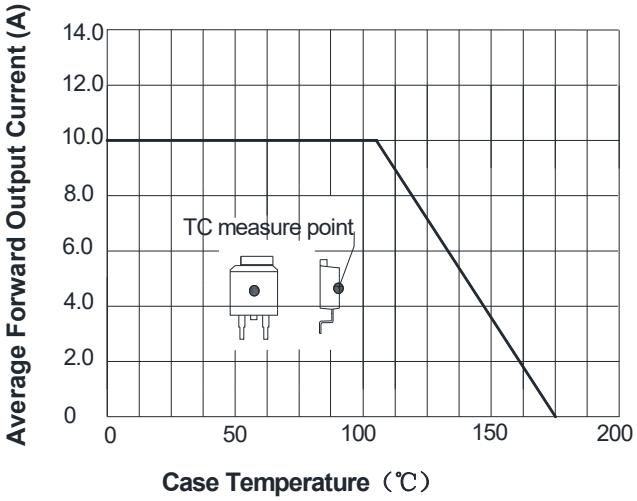


FIG2:Surge Forward Current Capability

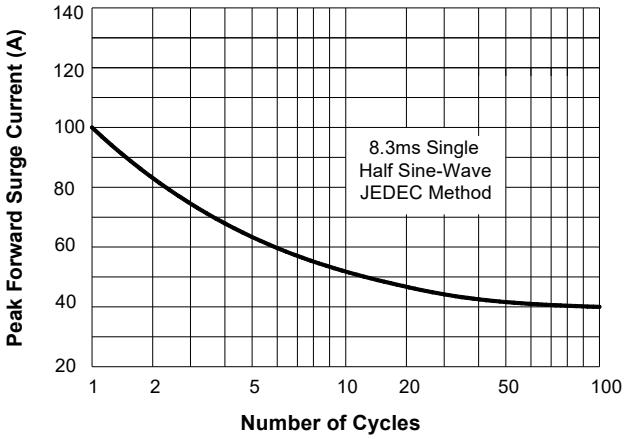


FIG3: Forward Voltage

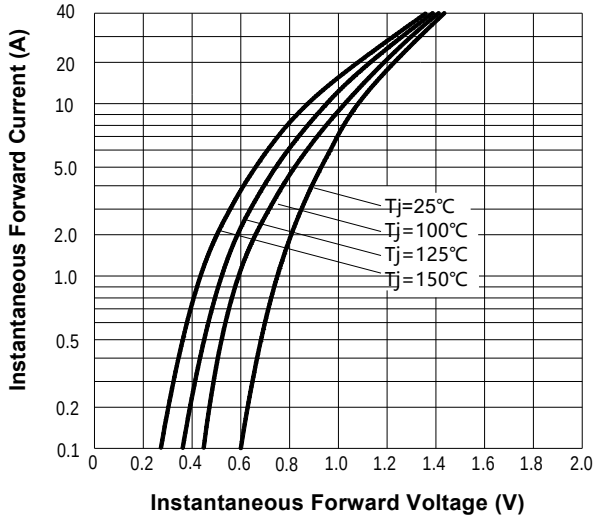


FIG.4: Instantaneous Reverse Characteristics

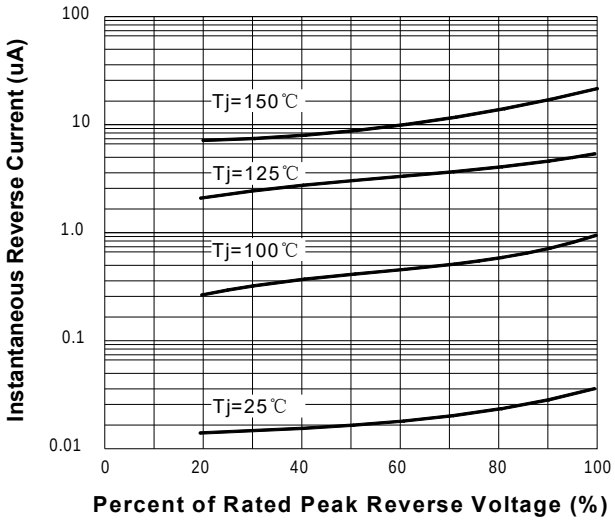
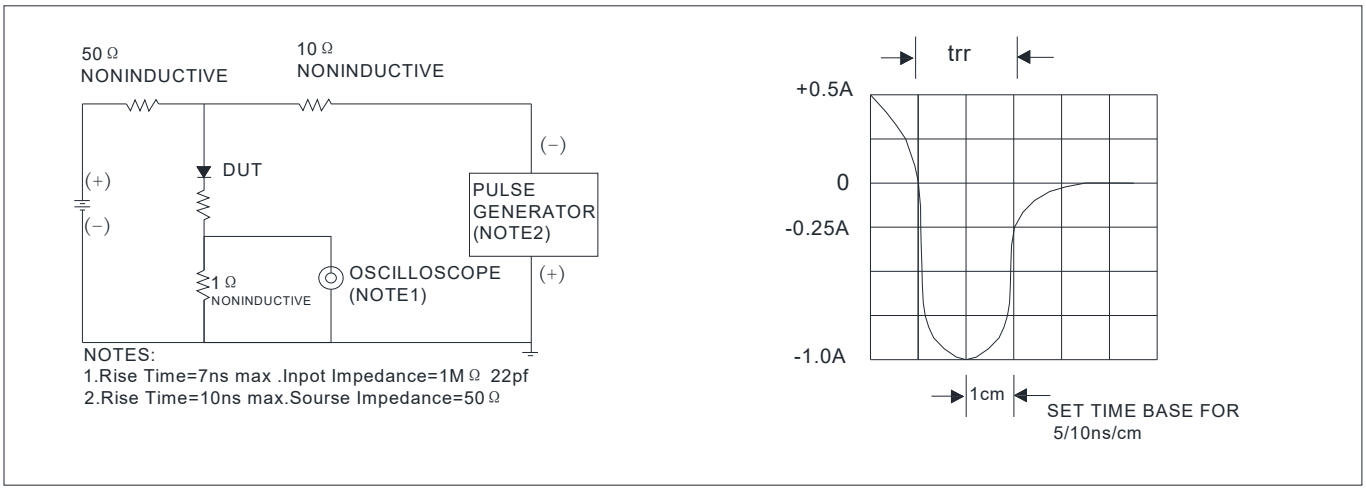
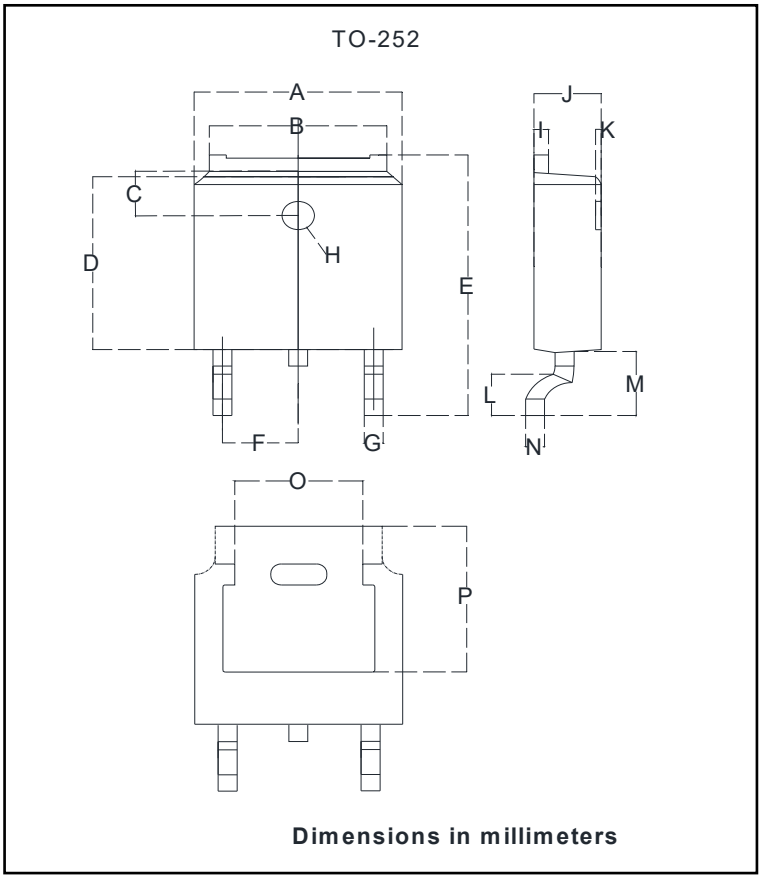


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

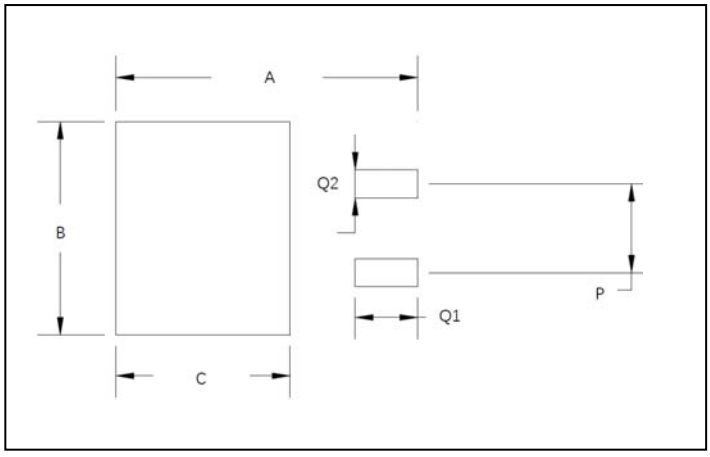


■Outline Dimensions



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
O	4.20	4.95
P	5.15	5.45

■ Suggested Pad Layout



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

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