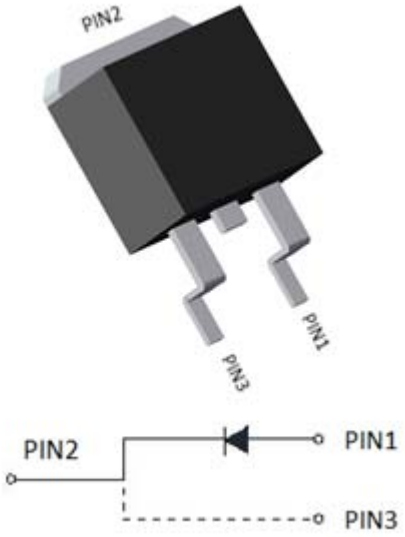
Ultra-Fast Recovery Diodes 30A FRED



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-263
  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	MURB3060L
Device marking code			MURB3060L
Repetitive Peak Reverse Voltage	V_{RRM}	V	600
Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1)	I_O	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25℃	I_{FSM}	A	300
Current Squared Time @1ms≤t≤8.3ms Tj=25℃,	I^2t	A^2s	373
Single Pulse Avalanche Energy @ Tp=40us, Tj=25℃,L=15mH	E_{AS}	mJ	210
Storage Temperature	Tstg	℃	-55 ~ +175
Junction Temperature	Tj	℃	-55 ~ +175
Typical Junction capacitance @4V,1MHz	Cj	pF	160

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	I_{FM}=30.0A @Tj=25℃		-	2.0	2.50
			I_{FM}=30.0A @Tj=125℃			1.65	2.0
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	V_{RM}=V_{RRM} Tj=25℃		-	-	5.0
	I_{RRM2}		V_{RM}=V_{RRM} Tj=125℃		-	-	200
Reverse Recovery Time	Trr	ns	I_F=0.5A I_{RM}=1A I_{RR}=0.25A Tj=25℃		-	28	50
			Tj=25℃	I_F=30A di/dt=-200A/us V_{RM}=400V	-	60.5	-
			Tj=125℃		-	96.98	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	3.53	-
			Tj=125℃		-	11.3	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	106.7	-
			Tj=125℃		-	537.25	-

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

PARAMETER		SYMBOL	UNIT	MURB3060L
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	℃/W	1.3
	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
MURB3060L	Approximate 1.43	50	2000	8000	Tube
MURB3060L	Approximate 1.43	1000	2000	10000	Reel

■ **Characteristics**(Typical)

FIG1:Io -Tc Curve

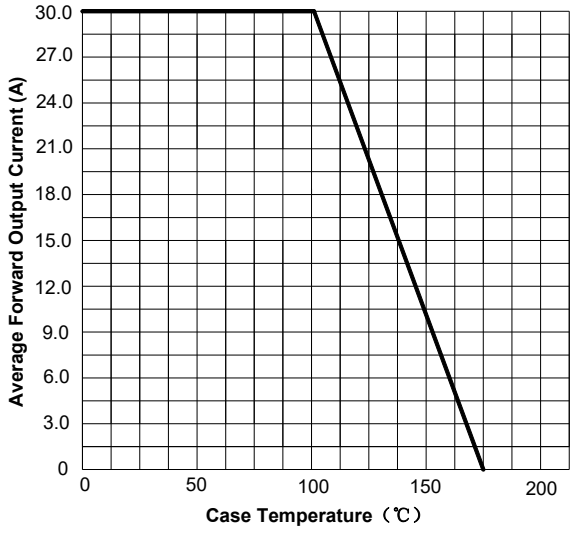


FIG2:Surge Forward Current Capability

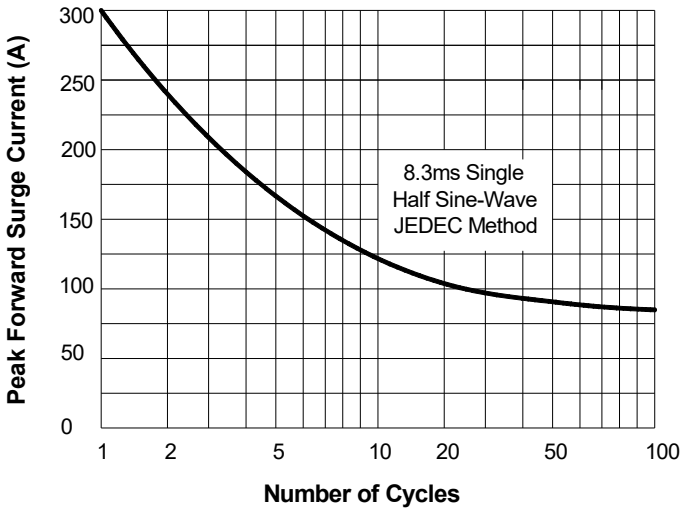


FIG3: Forward Voltage

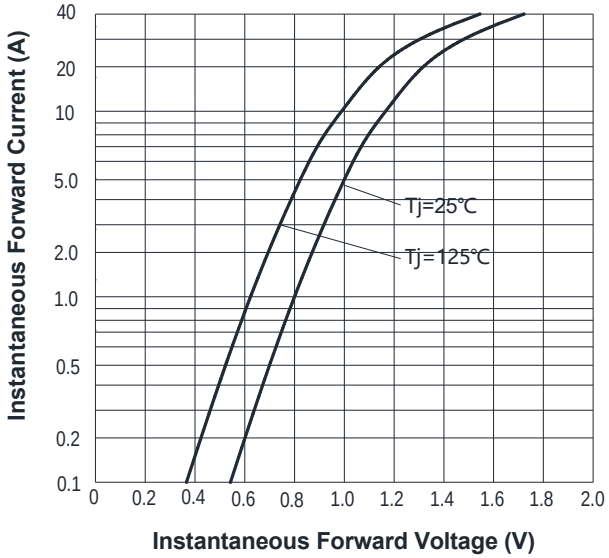


FIG.4: Instantaneous Reverse Characteristics

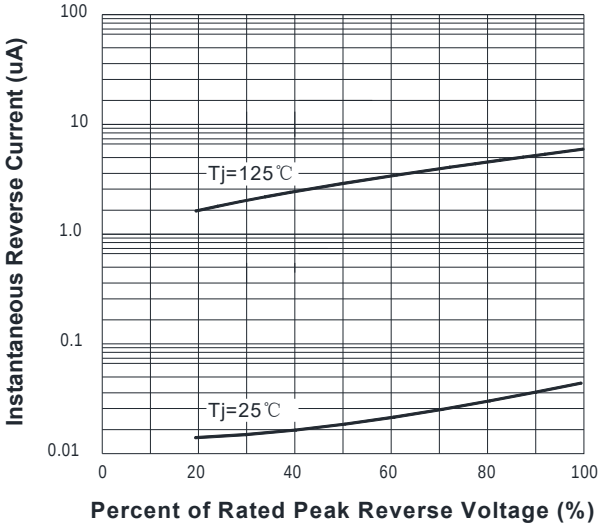
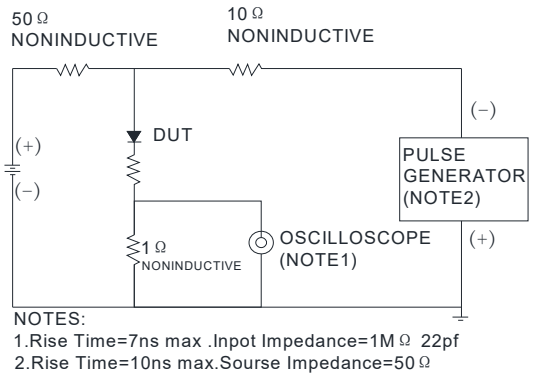
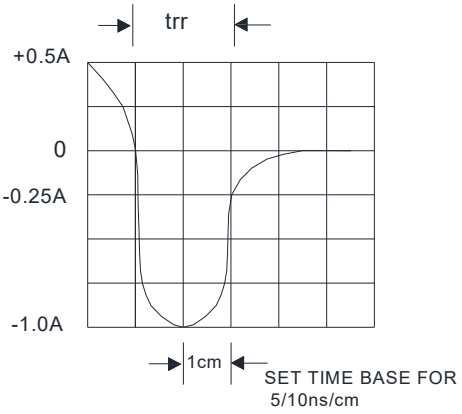
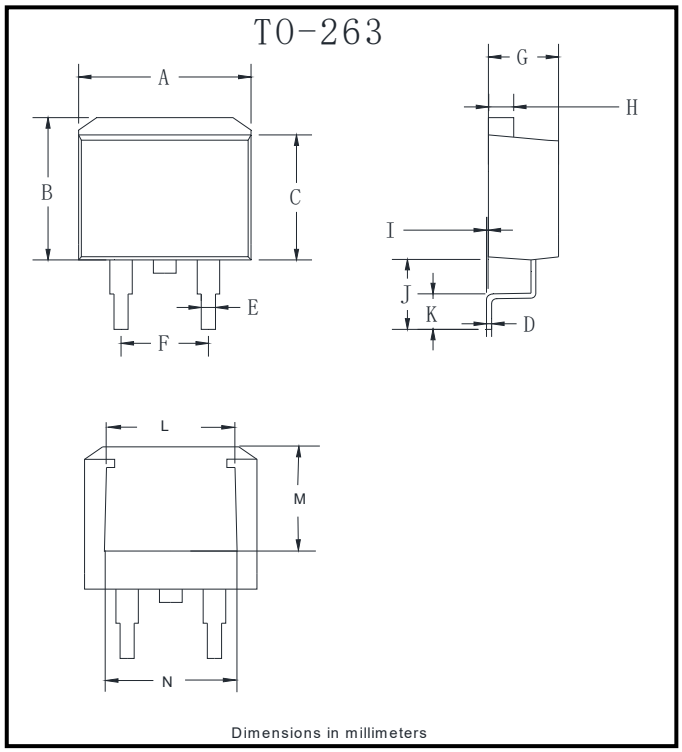


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



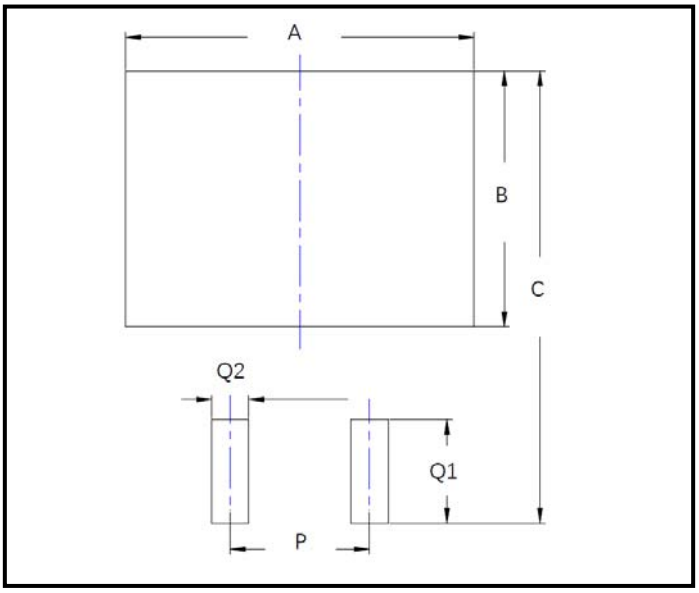


■ Outline Dimensions



TO-263		
Dim	Min	Max
A	9.5	11.5
B	9.7	10.5
C	8.4	9.0
D	0.28	0.64
E	0.68	0.94
F	4.55	5.6
G	4.04	5.10
H	1.14	1.4
I	0	0.2
J	4.9	6.05
K	1.79	2.79
L	7.3	7.9
M	6.2	6.8
N	7.6	8.2

■ Suggested Pad Layout



Dim	Millimeters
A	12.7
B	9.4
C	16.6
P	5.08
Q1	3.8
Q2	1.35

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