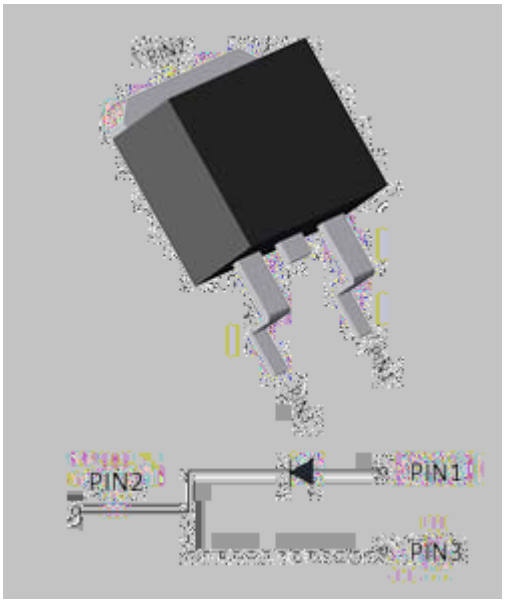
Ultra-Fast Recovery Diodes 30A FRED



Features

- High frequency operation
- High surge forward current capability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Solder dip 275 °C max. 7 s, per JESD 22-B106

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	MURB30120L
Device marking code			MURB30120L
Repetitive Peak Reverse Voltage	V_{RRM}	V	1200
Average Rectified Output Current @60Hz half sine-wave, R-load, Tc(FIG.1)	Io	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Tj=25	I_{FSM}	A	210
Current Squared Time @1ms≤t≤8.3ms Tj=25	I^2t	$A^2s.$	183
Single Pulse Avalanche Energy @ Tp=40us,Tj=25 ,L=15mH	E_{AS}	mJ	2.7
Storage Temperature	Tstg		-55 ~ +175
Junction Temperature	Tj		-55 ~ +175
Typical Junction capacitance @4V,1MHz	Cj	pF	97

■Electrical Characteristics Tj=25 Unless otherwise specified

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
instantaneous forward voltage drop per diode	V_{FM}	V	I_{FM}=30.0A Tj=25		-	2.8	3.3
			I_{FM}=30.0A Tj=125		-	2.1	2.8
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		-	38	70
			Tj=25	I_F=30A di/dt=-200A/us V_{RM}=400V	-	185	-
			Tj=125		-	272	-
Peak recovery current	I_{RRM}	A	Tj=25		-	5.4	-
			Tj=125		-	12.6	-
Reverse recovery charge	Qrr	nC	Tj=25		-	509	-
			Tj=125		-	1722	-

■Thermal Characteristics Tj=25 Unless otherwise specified

PARAMETER		SYMBOL	UNIT	MURB30120L
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
MURB30120L	Approximate 1.43	50	2000	8000	Tube
MURB30120L	Approximate 1.43	1000	2000	10000	Reel

■Characteristics (Typical)

FIG1:Io -Tc Curve

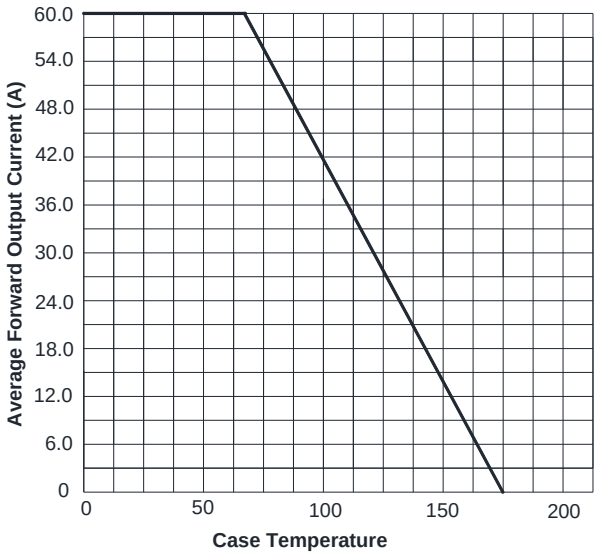


FIG2:Surge Forward Current Capability

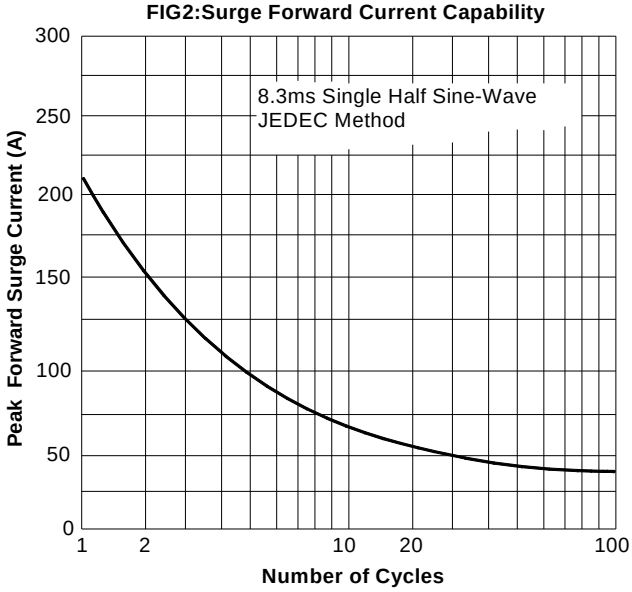


FIG3: Forward Voltage

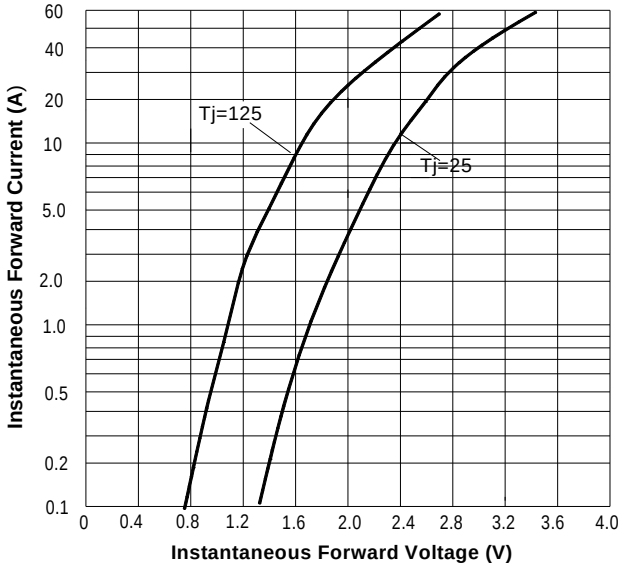


FIG4: Typical Reverse Characteristics

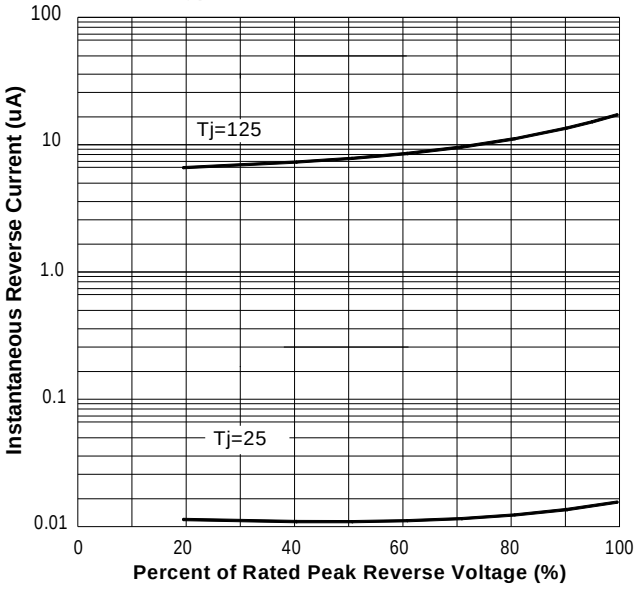
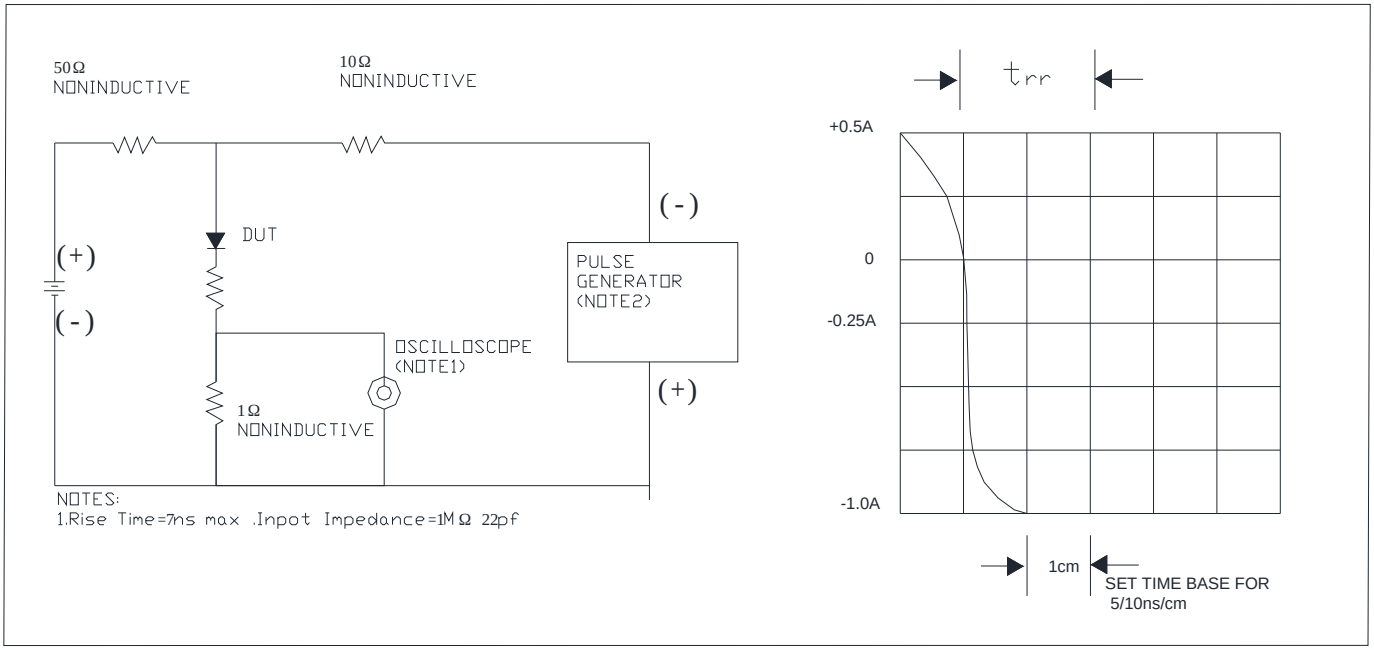
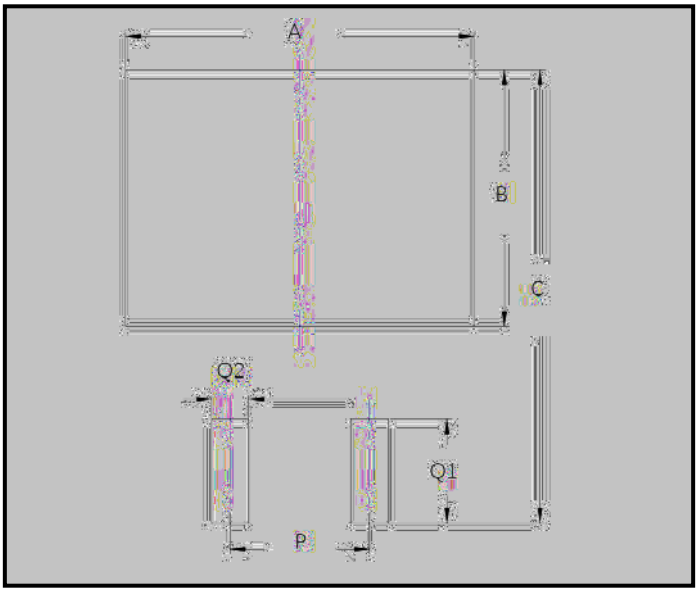


FIG.5 Diagram of circuit and Testing wave form of reverse recovery time



■ 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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