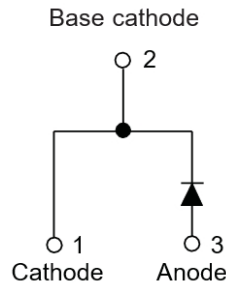


Ultra-Fast Recovery Diodes 30A FRED



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-247AC
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°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR30120PL
Device marking code			MUR30120PL
Repetitive Peak Reverse Voltage	VRRM	V	1200
Average Rectified Output Current @60Hz half sine-wave, R-load, T _a (FIG.1)	I _o	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C	I _{FSM}	A	210
Current Squared Time @1ms≤t≤8.3ms T _j =25°C	I ² t	A ² s.	183
Single Pulse Avalanche Energy @ T _p =40uS, T _j =25°C, L=15mH	EAS	mJ	2.7
Storage Temperature	T _{stg}	°C	-55 ~ +175
Junction Temperature	T _j	°C	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C _j	pF	97



MUR30120PL

■Electrical Characteristics (T_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	V _{FM}	V	I _{FM} =30.0A T _j =25°C	-	2.8	3.3
			I _{FM} =30.0A T _j =125°C	-	2.1	2.8
DC reverse current at rated DC blocking voltage per diode	I _{RRM1}	μA	V _{RM} =V _{RRM} T _j =25°C	-	-	5.0
	I _{RRM2}		V _{RM} =V _{RRM} T _j =125°C	-	-	200
Reverse Recovery Time	T _{rr}	ns	I _F =0.5A I _{RM} =1A I _{RR} =0.25A T _j =25°C	-	38	70
			T _j =25°C	-	206	-
			T _j =125°C	-	255	-
Peak recovery current	I _{RRM}	A	T _j =25°C	-	4.25	-
			T _j =125°C	-	9.10	-
Reverse recovery charge	Q _{rr}	nC	T _j =25°C	-	434	-
			T _j =125°C	-	1713	-

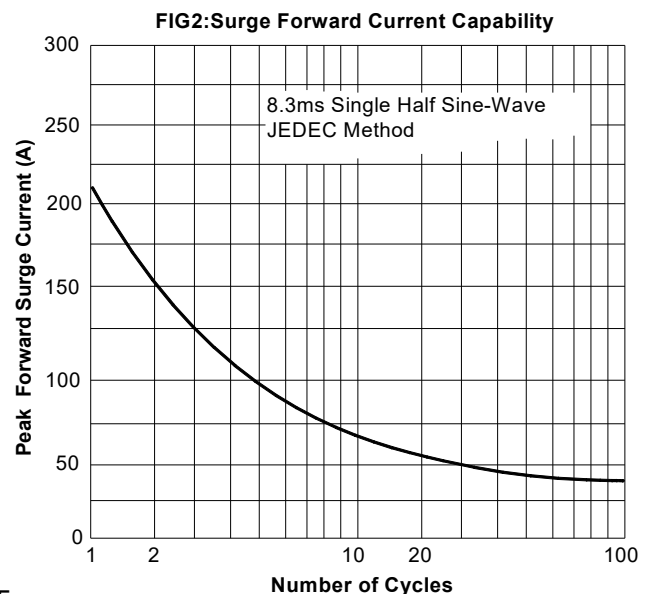
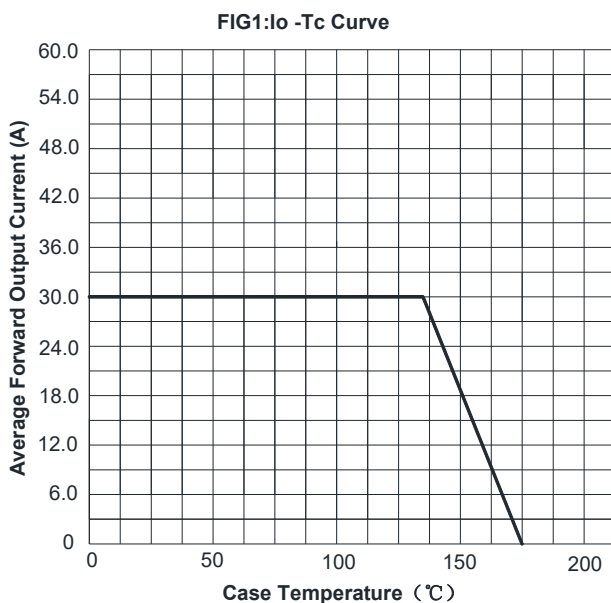
■Thermal Characteristics (T_j=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR30120PL
Thermal Resistance	Between junction and case	R _{θJC}	°CW	0.4

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR30120PL	Approximate 6.0	30	360	1800	Tube

■Characteristics (Typical)





MUR30120PL

FIG3: Forward Voltage

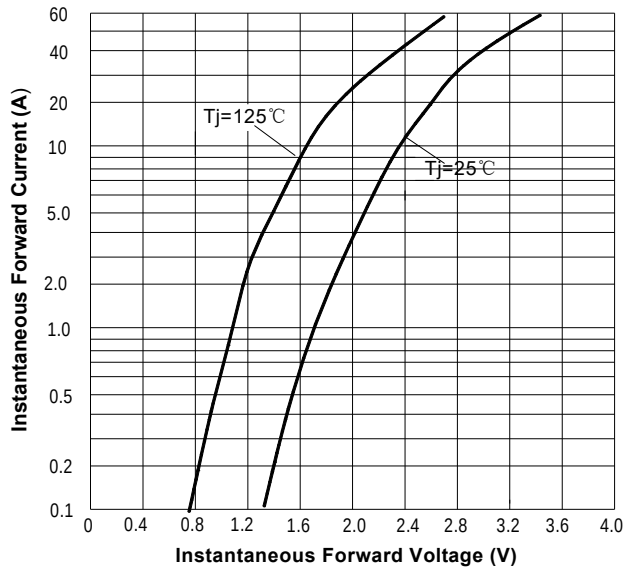


FIG4: Typical Reverse Characteristics

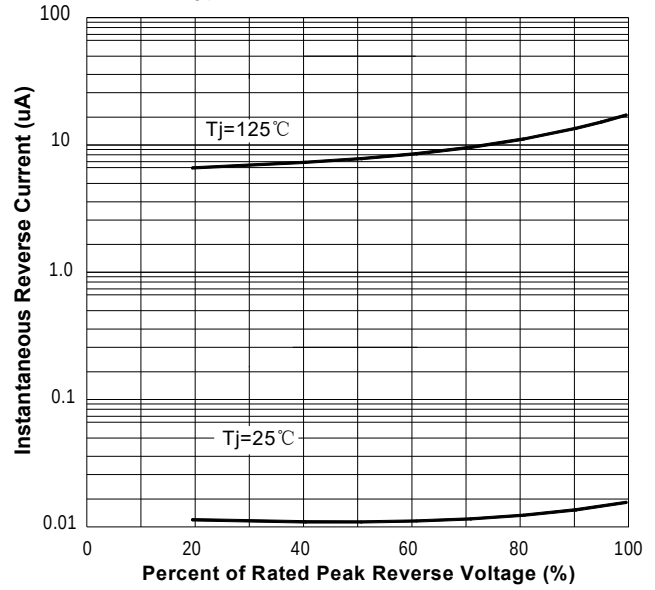
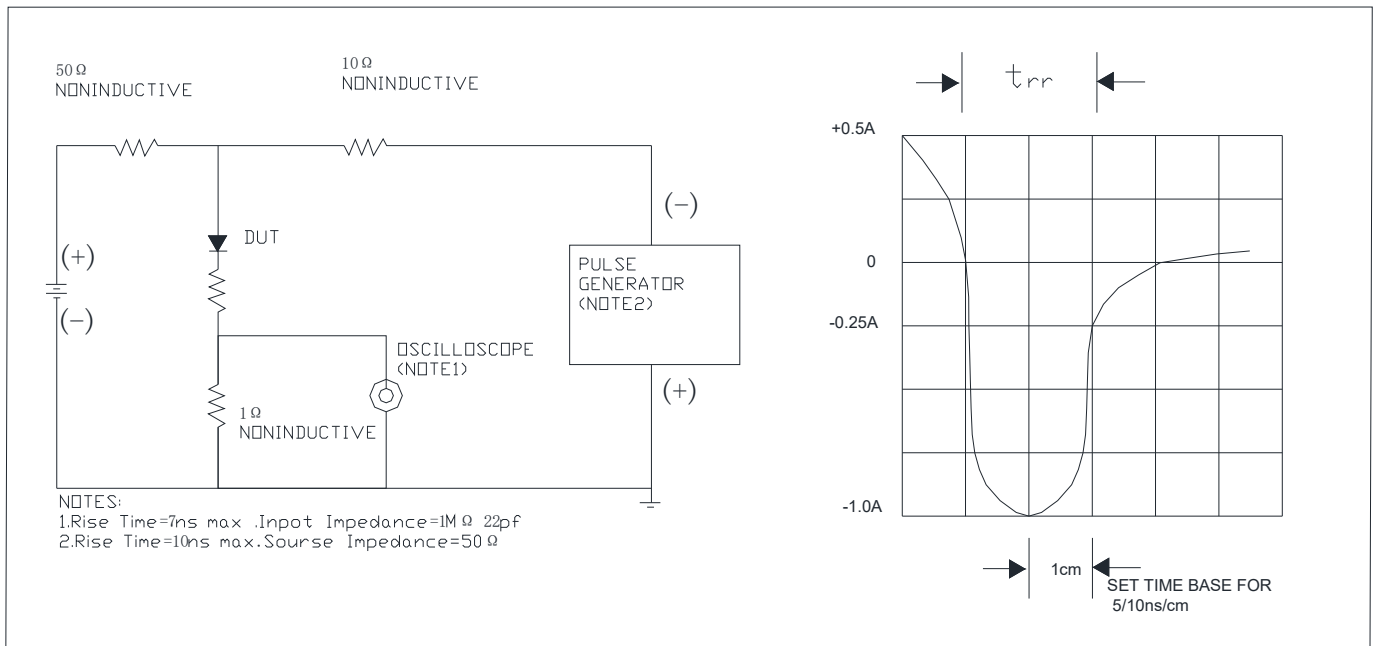


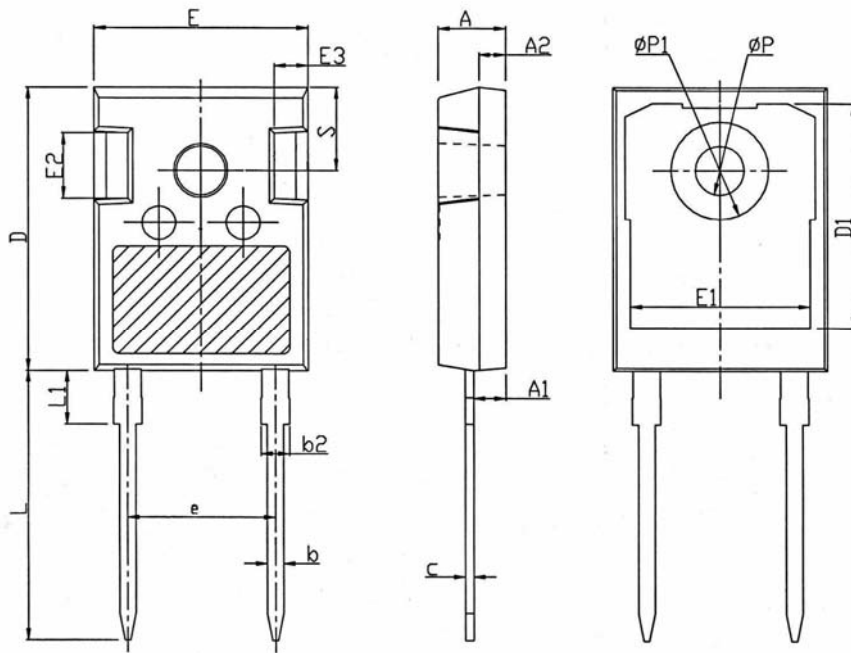
FIG.5 Diagram of circuit and Testing wave form of reverse recovery time





MUR30120PL

■Outline Dimensions



TO-247AC		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.11	1.36
b2	1.91	2.21
c	0.51	0.75
D	20.70	21.30
D1	16.25	16.85
E	15.50	16.10
E1	13.00	13.60
E2	4.80	5.20
E3	2.30	2.70
e	10.88BSC	
L	19.62	20.22
L1	-	4.30
Ø P	3.40	3.80
Ø P1	-	7.30
S	6.15BSC	



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