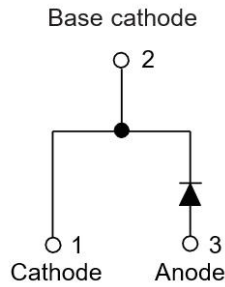
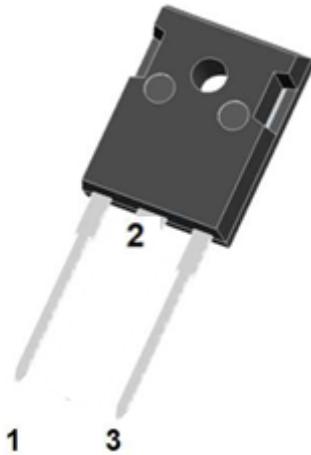


Ultra-Fast Recovery Diodes 30A FRED



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 ($T_j=25^\circ\text{C}$ 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_c (FIG.1)	I_o	A	30
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, $T_j=25^\circ\text{C}$	IFSM	A	210
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ $T_j=25^\circ\text{C}$	I^2t	A^2s .	183
Single Pulse Avalanche Energy @ $T_p=40\mu\text{s}$, $T_j=25^\circ\text{C}$, $L=15\text{mH}$	EAS	mJ	2.7
Storage Temperature	T_{stg}	$^\circ\text{C}$	-55 ~ +175
Junction Temperature	T_j	$^\circ\text{C}$	-55 ~ +175
Typical Junction capacitance @4V,1MHz	C_j	pF	97



MUR30120PL-B1-W5094HF

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	VFM	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}	uA	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	I _F =30A di/dt=-200A/us V _{RM} =960V	-	9.10
Reverse recovery charge	Q _{rr}	nC	T _j =25°C	-	434	-
			T _j =125°C	-	1713	-

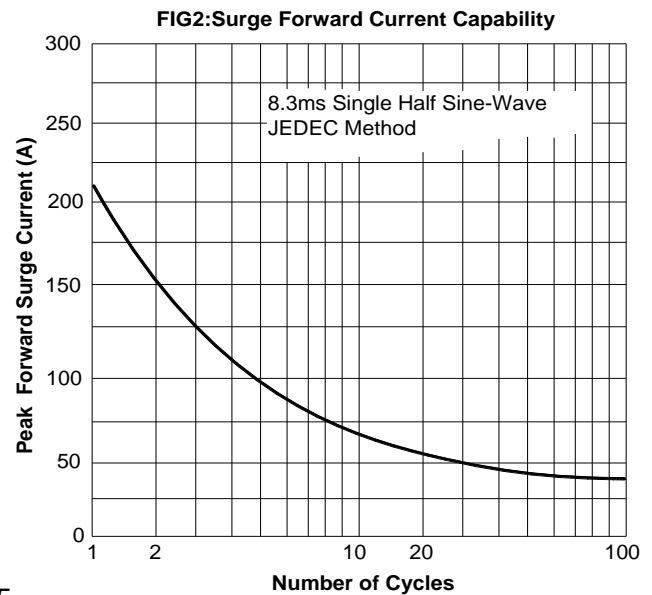
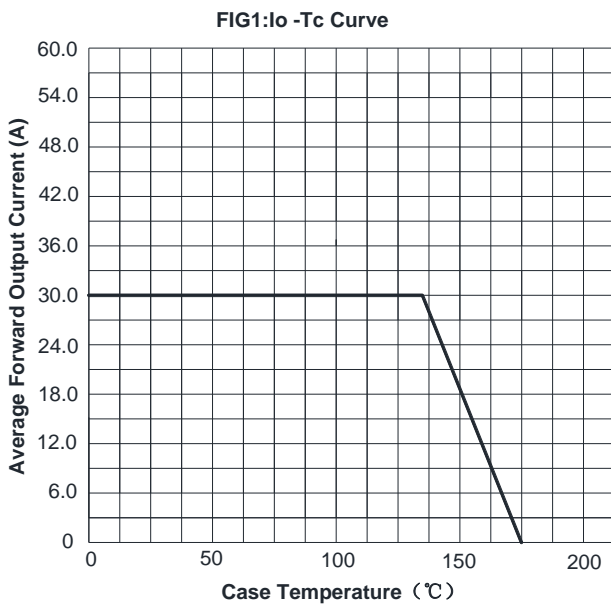
■Thermal Characteristics (T_j=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR30120PL
Thermal Resistance	Between junction and case	R _{θJ-C}	°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-B1-W5094HF

FIG3: Forward Voltage

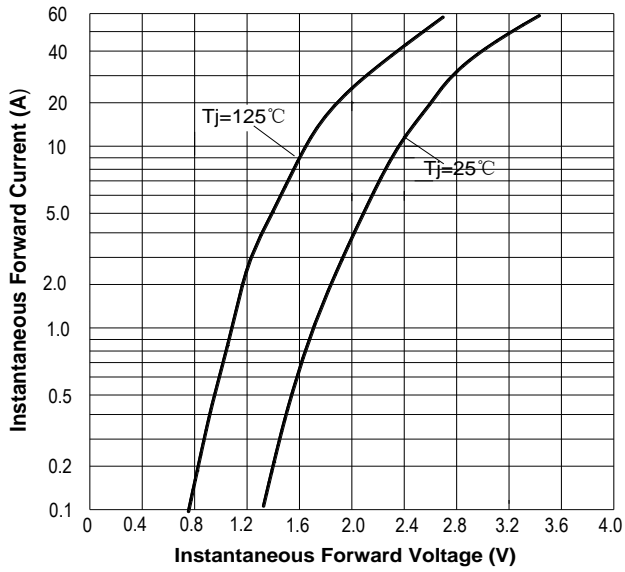


FIG4: Typical Reverse Characteristics

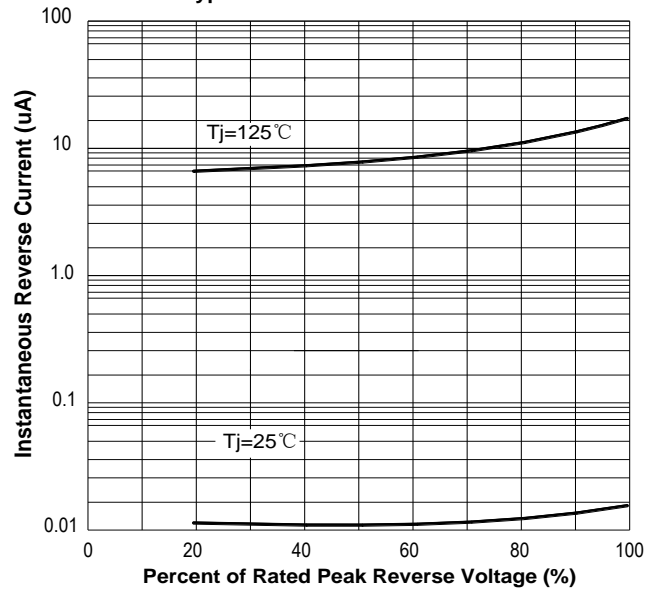
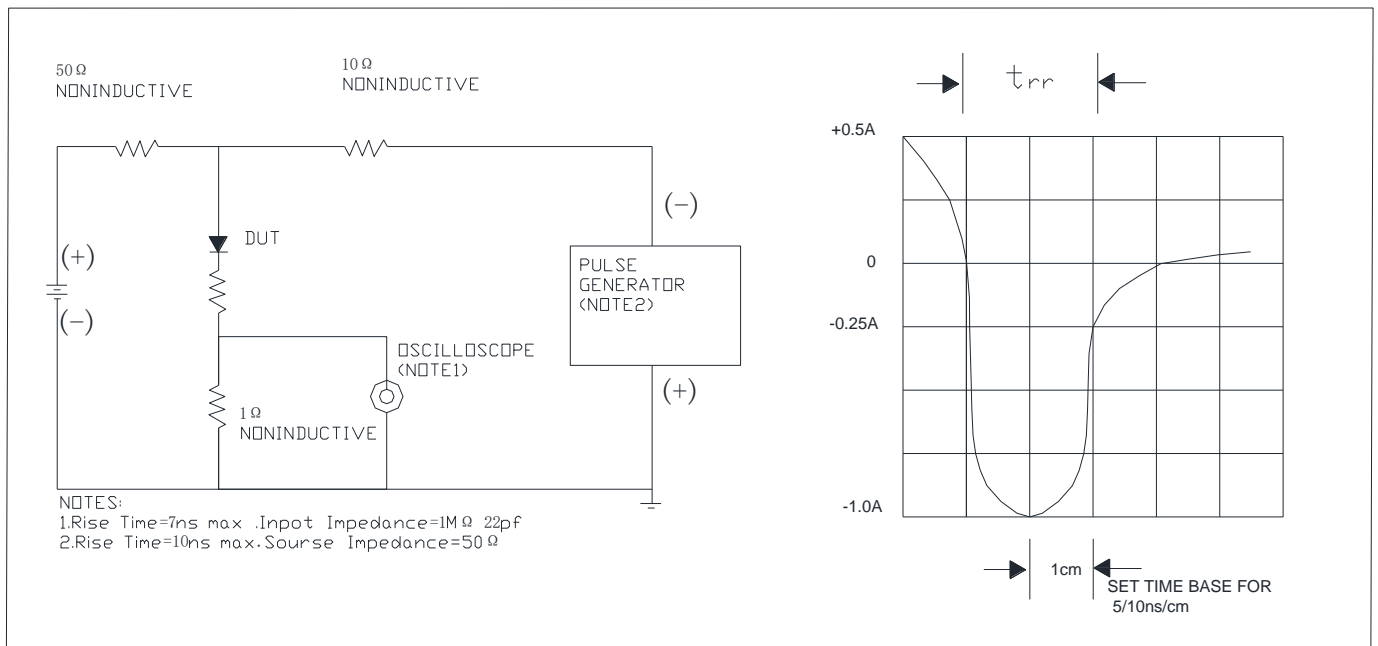


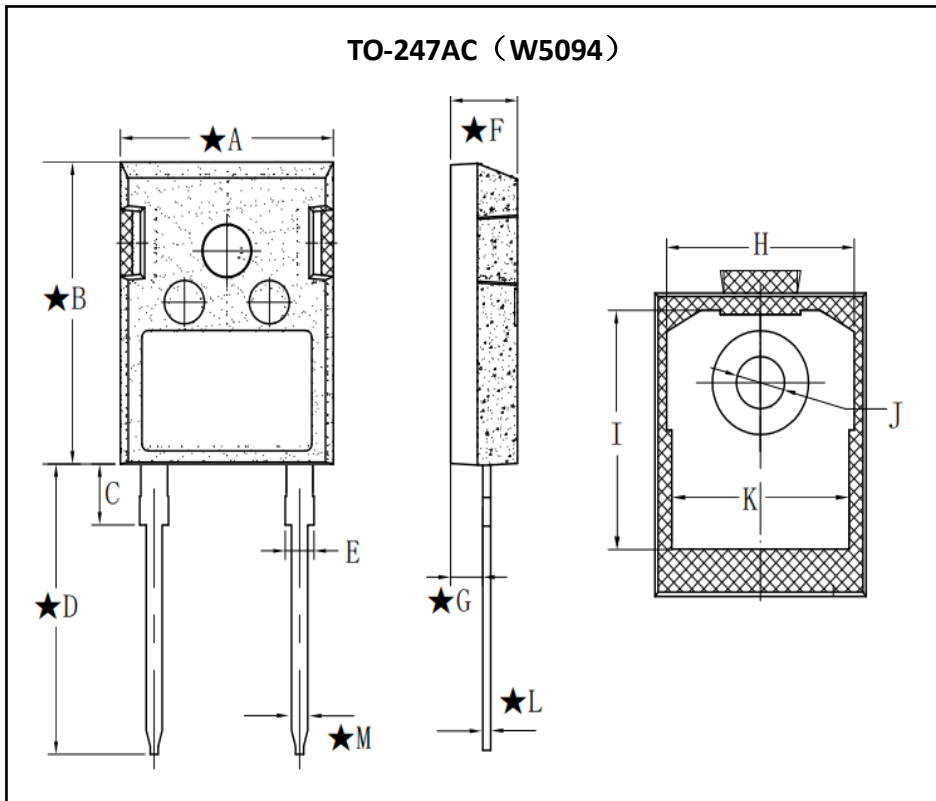
FIG.5 Diagram of circuit and Testing wave form of reverse recovery time





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■ Outline Dimensions



TO-247AC		
Dim	Min	Max
A	15.72	16.12
B	20.7	21.1
C	4.02	4.42
D	19.9	20.3
E	2.0	2.3
F	4.8	5.2
G	2.3	2.5
H	TYP 14.02	
I	TYP 16.55	
J	3.5	3.7
K	TYP 13.26	
L	0.58	0.62
M	1.15	1.25



MUR30120PL-B1-W5094HF

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