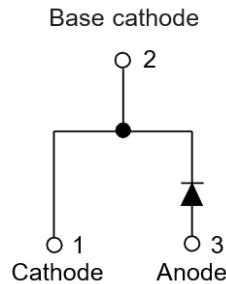


Ultra-Fast Recovery Diodes 60A FRED



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	MUR60120PL
Device marking code			MUR60120PL
Repetitive Peak Reverse Voltage	VRRM	V	1200
Average Rectified Output Current @60Hz half sine-wave, R-load, T_c (FIG.1)	I_o	A	60
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, $T_j=25^{\circ}\text{C}$	IFSM	A	450
Current Squared Time @1ms $\leq t \leq$ 8.3ms $T_j=25^{\circ}\text{C}$	I^2t	A ² s.	664
Single Pulse Avalanche Energy @ $T_p=40\mu\text{s}$, $T_j=25^{\circ}\text{C}$, $L=15\text{mH}$	EAS	mJ	7.5
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	170



MUR60120PL

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	
instantaneous forward voltage drop per diode	VFM	V	IFM=60.0A Tj=25°C	-	3.0	3.3	
			IFM=60.0A Tj=125°C	-	2.3	2.8	
DC reverse current at rated DC blocking voltage per diode	I _{RRM1}	uA	V _{RM} =V _{R_{RM}} Tj=25°C	-	-	5.0	
	I _{RRM2}		V _{RM} =V _{R_{RM}} Tj=125°C	-	-	200	
Reverse Recovery Time	T _{rr}	ns	I _F =0.5A I _{RM} =1A I _{RR} =0.25A Tj=25°C	-	45	70	
			Tj=25°C	-	230	-	
			Tj=125°C	-	291	-	
Peak recovery current	I _{RRM}	A	Tj=25°C	I _F =60A di/dt=-200A/us V _{RM} =960V	5.96	-	
			Tj=125°C		12.73	-	
Reverse recovery charge	Q _{rr}	nC	Tj=25°C		-	624	-
			Tj=125°C		-	2718	-

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

PARAMETER	SYMBOL	UNIT	MUR60120PL
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
MUR60120PL	Approximate 6.0	30	360	1800	Tube

■Characteristics (Typical)

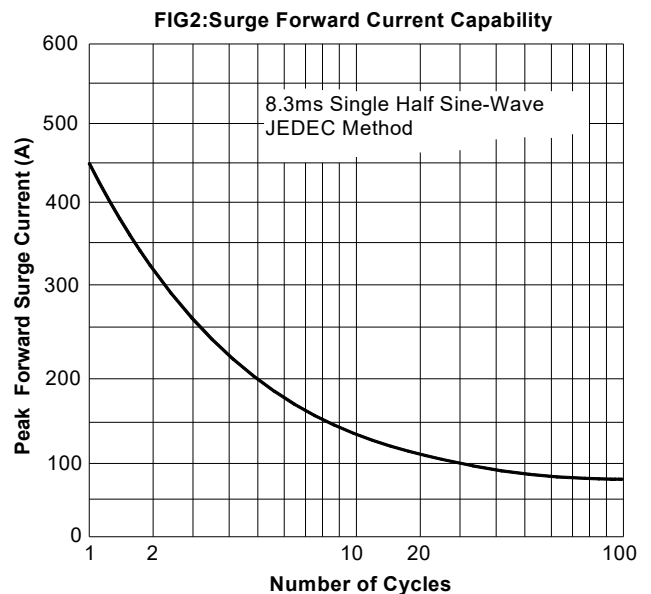
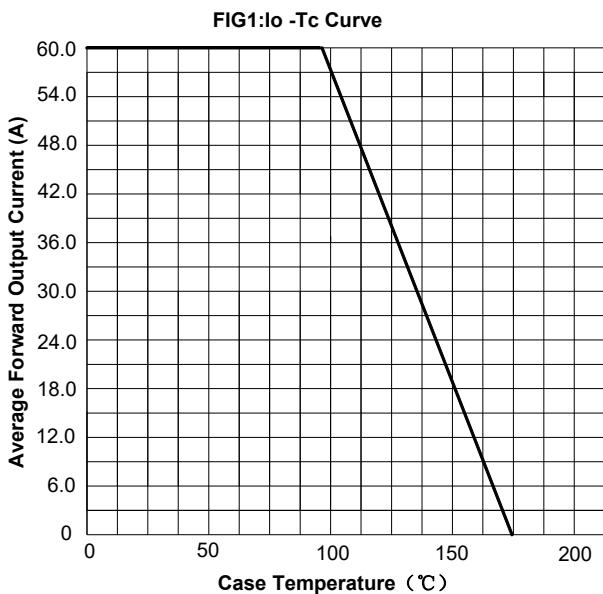


FIG3: Forward Voltage

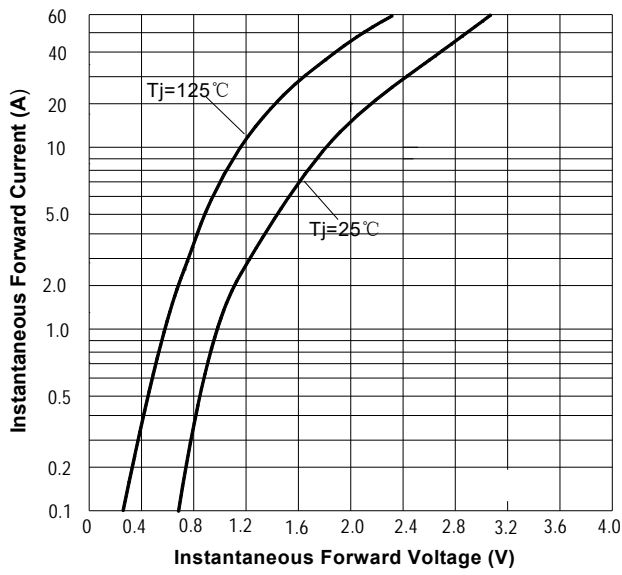


FIG4: Typical Reverse Characteristics

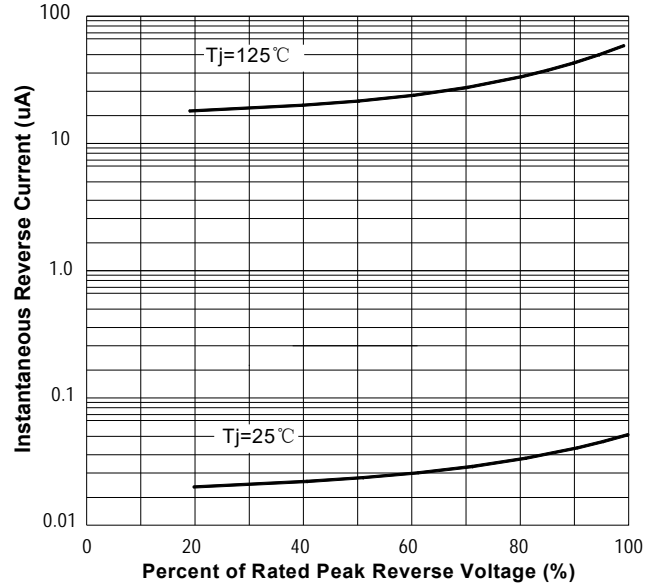
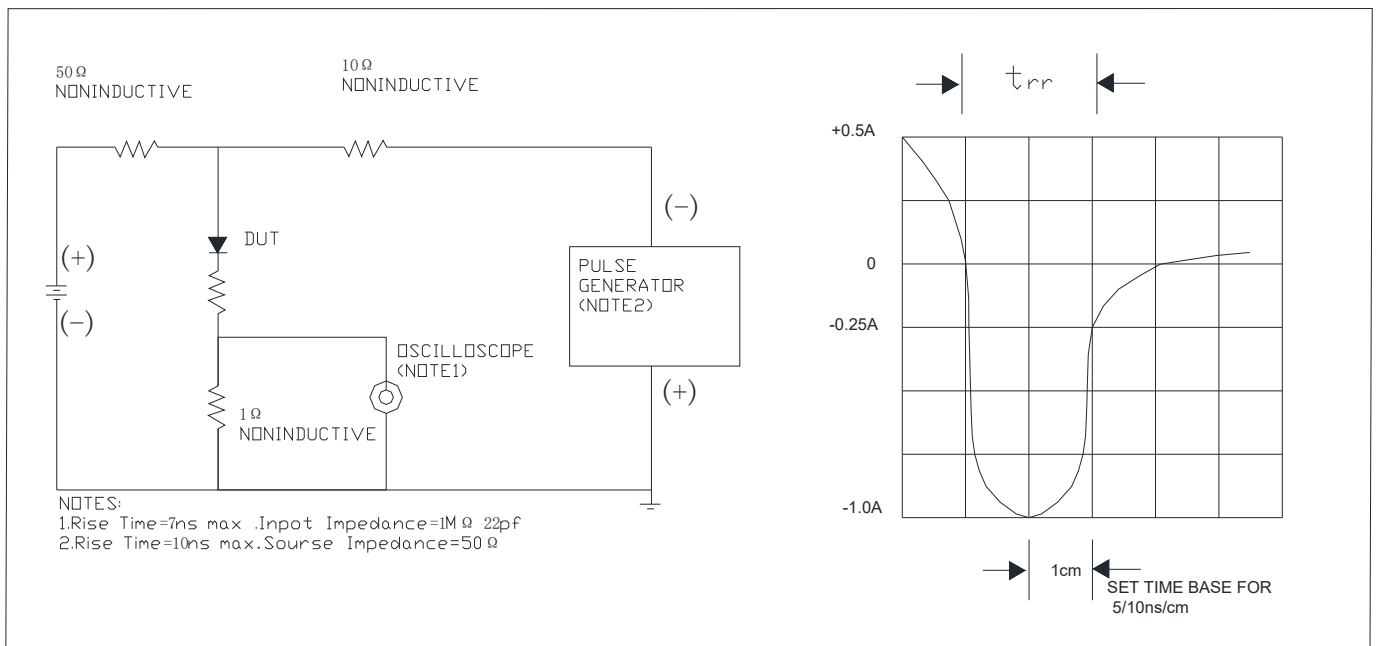


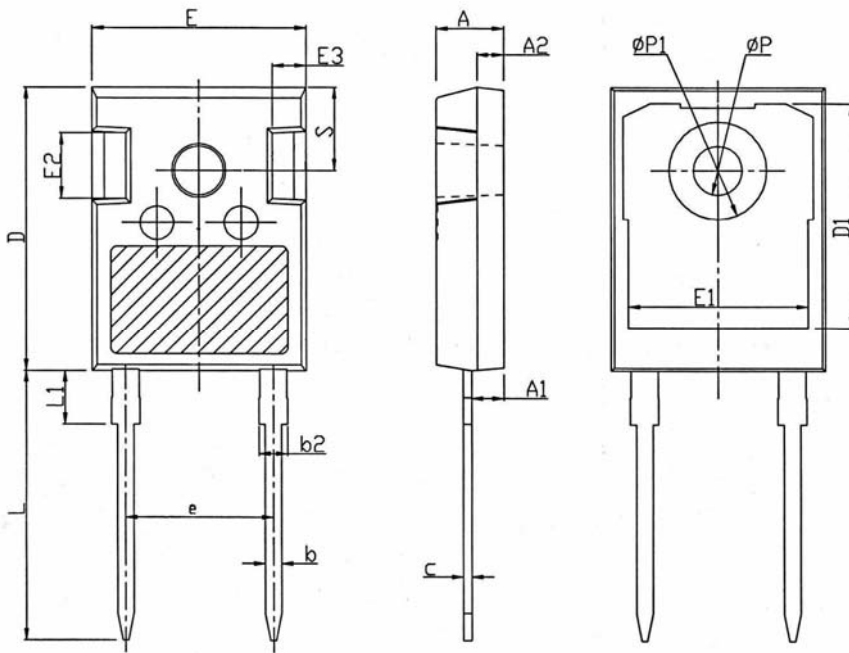
FIG.5 Diagram of circuit and Testing wave form of reverse recovery time





MUR60120PL

■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
ϕP	3.40	3.80
$\phi P1$	-	7.30
S	6.15BSC	



MUR60120PL

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