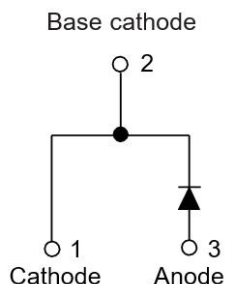


Ultra-Fast Recovery Rectifier Diodes



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, -
- **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	MUR15120PL
Device marking code			MUR15120PL
Repetitive Peak Reverse Voltage	VRRM	V	1200
Average Rectified Output Current @60Hz half sine-wave, R-load, T_c (FIG.1)	I_o	A	15
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, $T_j=25^{\circ}\text{C}$	IFSM	A	110
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ $T_j=25^{\circ}\text{C}$	I^2t	$\text{A}^2\text{s.}$	50.21
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	55

MUR15120PL

■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} =15.0A @T _j =25°C	-	2.40	3.20
			I _{FM} =15.0A @T _j =125°C		1.90	2.50
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
	I _{RRM3}		V _{RM} =V _{RRM} T _j =150°C	-	-	500
Reverse Recovery Time	T _{rr}	ns	I _F =0.5A I _{RM} =1A I _{RR} =0.25A T _j =25°C	-	37	60
			T _j =25°C	-	220	-
			T _j =125°C	-	324	-
Peak recovery current	I _{RRM}	A	T _j =25°C	-	4	-
			T _j =125°C	-	9	-
Reverse recovery charge	Q _{rr}	nC	T _j =25°C	-	481	-
			T _j =125°C	-	1508	-

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

PARAMETER		SYMBOL	UNIT	MUR15120PL
Thermal Resistance	Between junction and case	R _{θJ-C}	°CW	1.0
	Between junction and Air	R _{θJ-A}	°CW	45

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR15120PL	Approximate 6.0	30	360	1800	Tube

■ Characteristics (Typical)

FIG1: I_o - T_c Curve

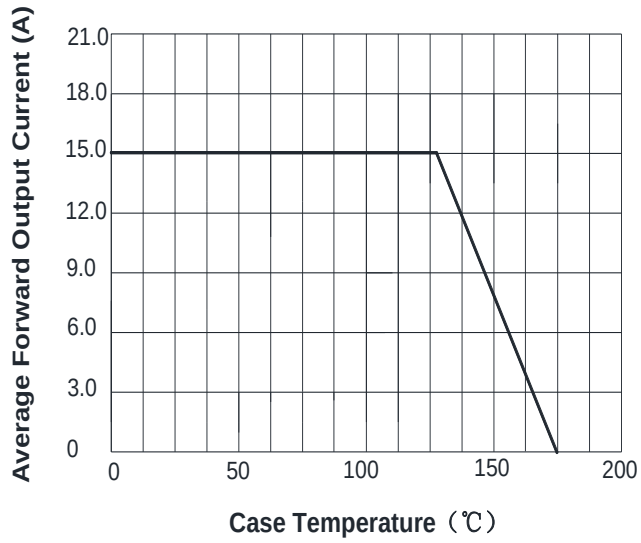


FIG2: Surge Forward Current Capability

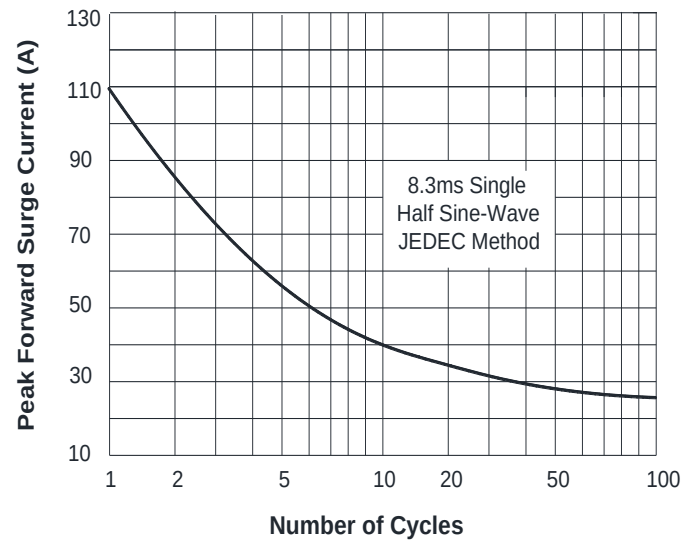


FIG3: Forward Voltage

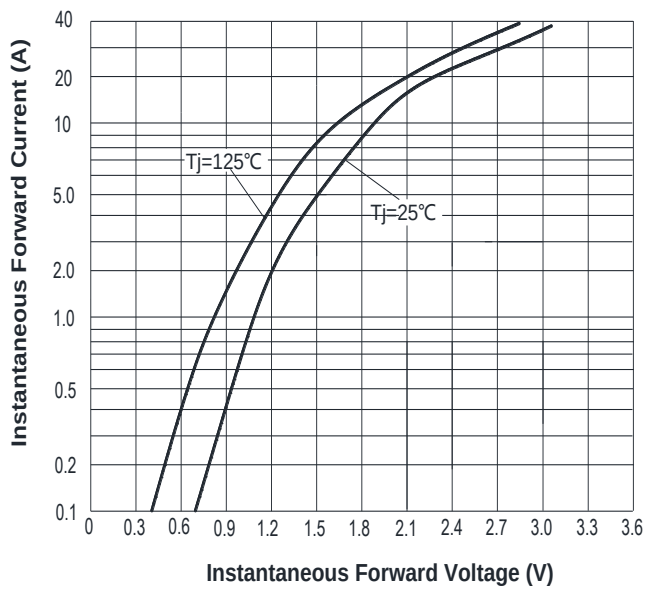


FIG4: Instantaneous Reverse Characteristic

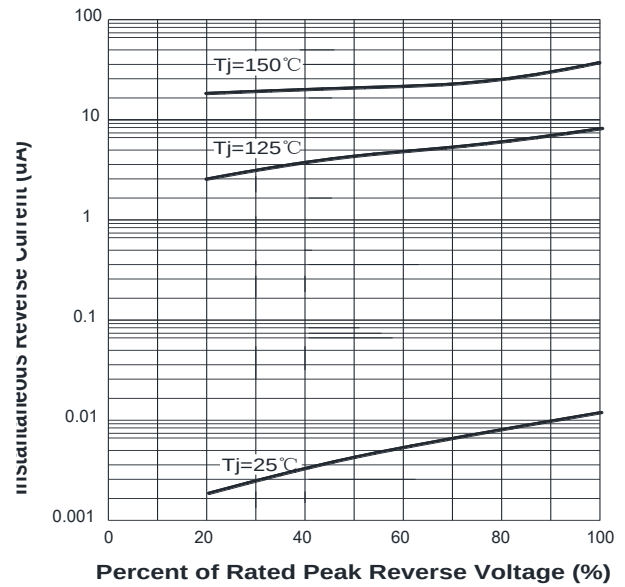
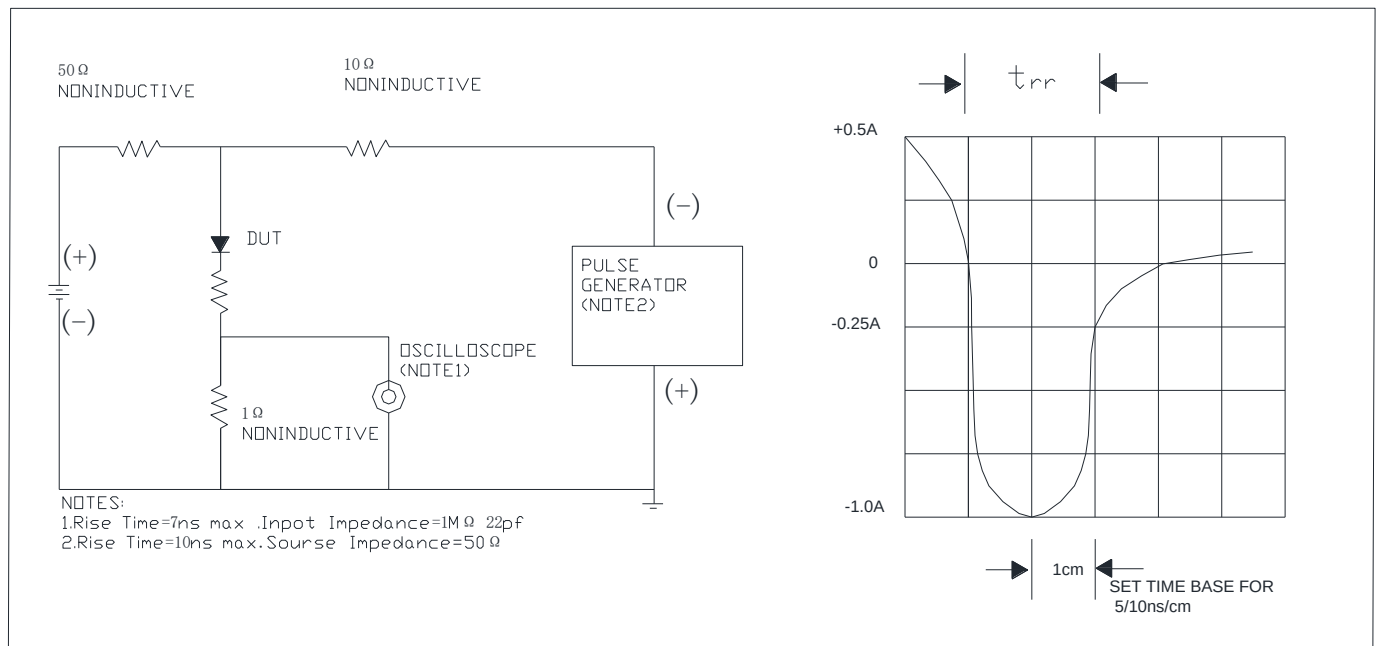
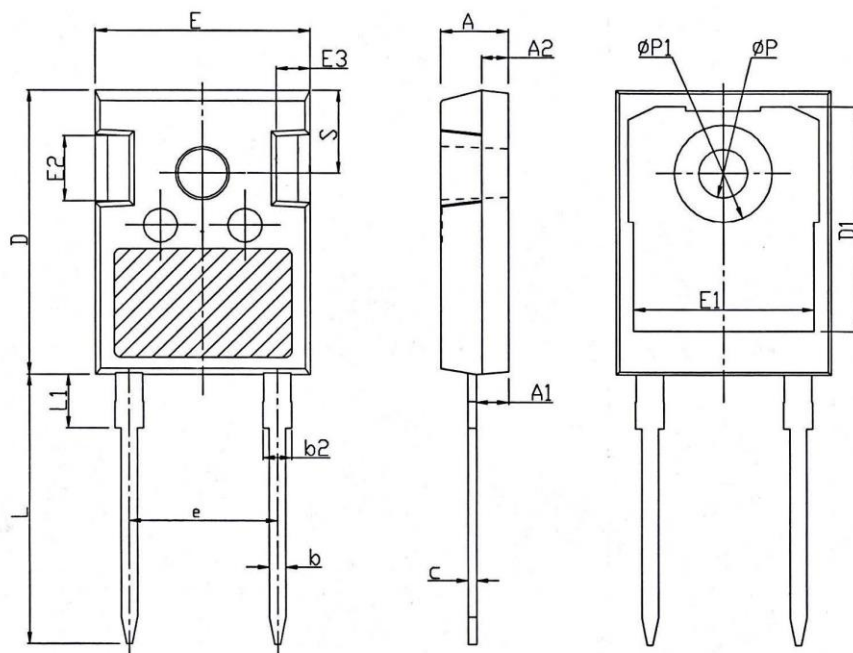


FIG.5 Diagram of circuit and Testing wave form of reverse recovery time



■ 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
φ P	3.40	3.80
φ P1	-	7.30
S	6.15BSC	

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