4A, 200V - 600V Ultra Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- Ultra fast recovery time for high efficiency
- Excellent high temperature switching
- Glass passivated chip junction
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

- Case: DO-201AD
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 1.20g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	4	A
V_{RRM}	200 - 600	V
I_{FSM}	125	A
$T_{J\,MAX}$	175	°C
Package	DO-201AD	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-201AD

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER	**SYMBOL**	**MUR420**	**MUR440**	**MUR460**	**UNIT**
Marking code on the device		MUR420	MUR440	MUR460	
Repetitive peak reverse voltage	V_{RRM}	200	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	280	420	V
Forward current	I_F	4			A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	125			A
Junction temperature	T_J	-55 to +175			°C
Storage temperature	T_{STG}	-55 to +175			°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	15	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	28	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)	MUR420	I_F = 4A, T_J = 25°C	V_F	-	0.89	V
	MUR440 MUR460			-	1.28	V
Reverse current @ rated V_R(2)	MUR420	T_J = 25°C	I_R	-	5	μA
	MUR440 MUR460			-	10	μA
	MUR420	T_J = 125°C		-	150	μA
	MUR440 MUR460			-	250	μA
Junction capacitance		1MHz, V_R = 4.0V	C_J	65	-	pF
Reverse recovery time	MUR420	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	25	ns
	MUR440 MUR460			-	50	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE(1)(2)	PACKAGE	PACKING
MUR4x	DO-201AD	1,250 / Tape & Reel
MUR4x A0G	DO-201AD	500 / Ammo box
MUR4xH	DO-201AD	1,250 / Tape & Reel
MUR4xHA0G	DO-201AD	500 / Ammo box

Notes:

1. "x" defines voltage from 200V (MUR420) to 600V (MUR460)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

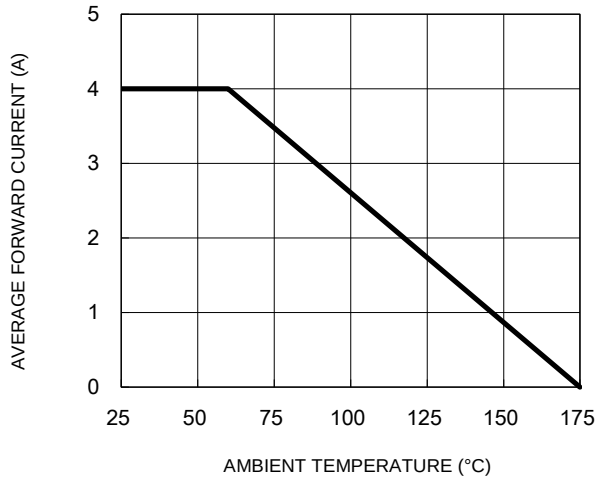


Fig.2 Typical Junction Capacitance

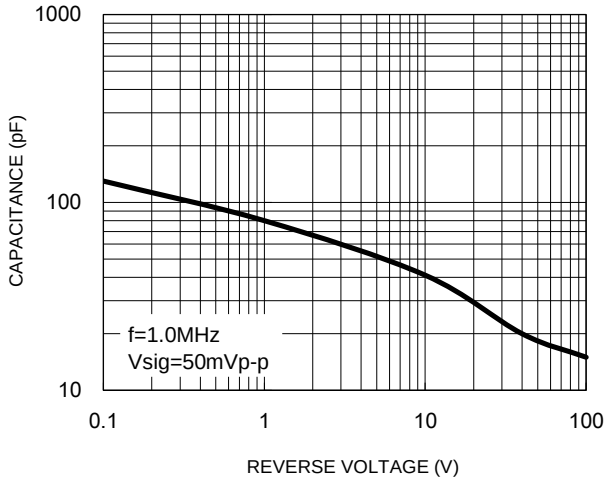


Fig.3 Typical Reverse Characteristics

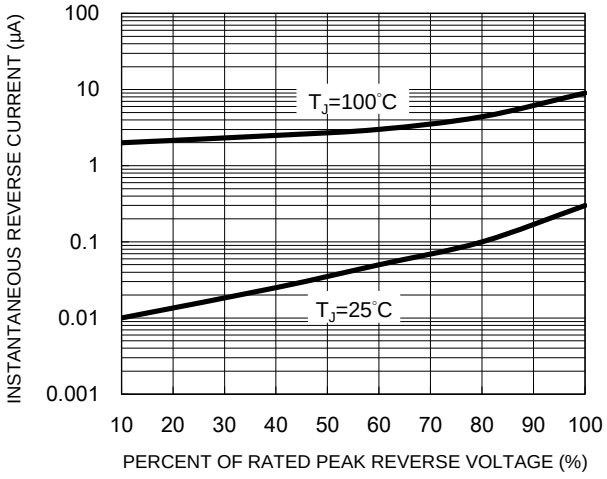


Fig.4 Typical Forward Characteristics

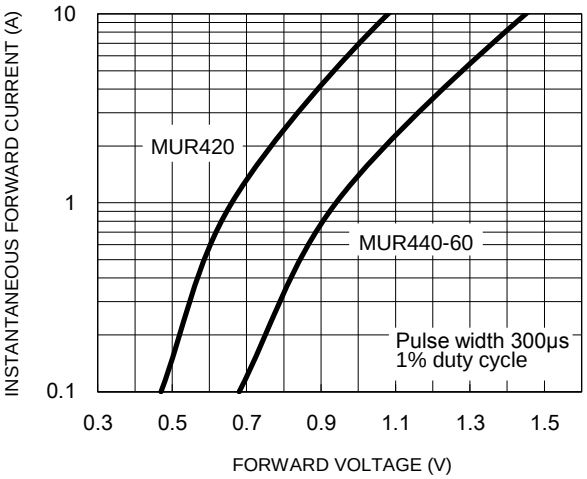
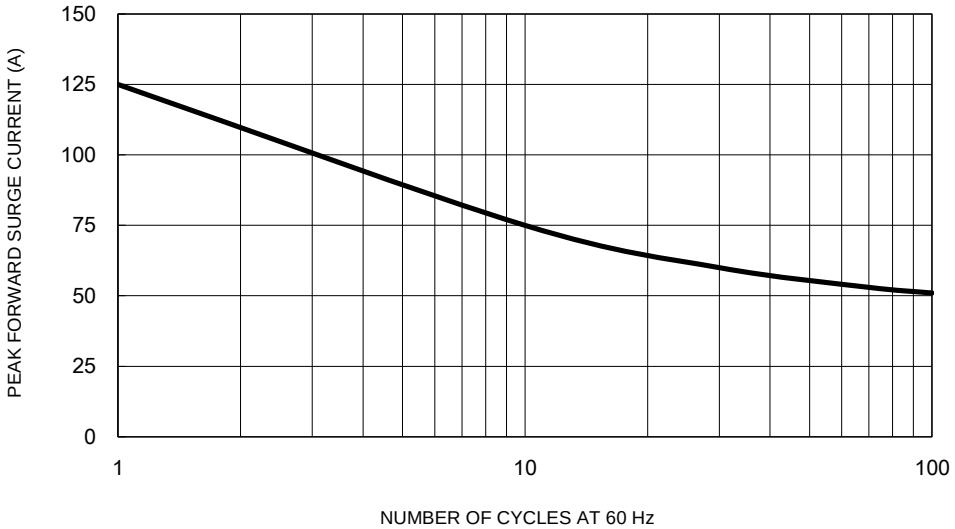


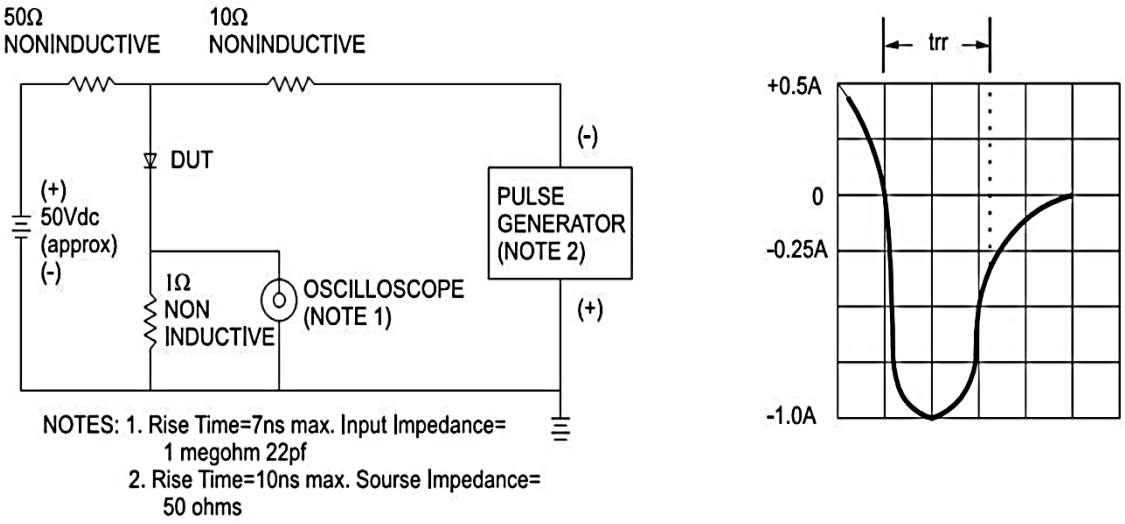
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

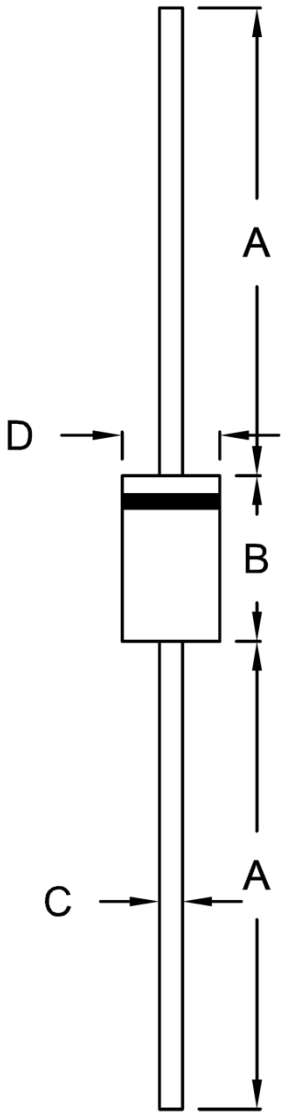
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

DO-201AD



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.50	9.50	0.335	0.374
C	1.20	1.30	0.047	0.051
D	5.00	5.60	0.197	0.220

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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