3A, 50V - 1000V Fast Recovery Rectifier

FEATURES

- AEC-Q101 qualified available
- High current capability, Low V_F
- High reliability
- High surge current capability
- Low power loss, high efficiency
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

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	3	A
V_{RRM}	50 - 1000	V
I_{FSM}	125	A
$T_{J\ MAX}$	150	°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	FR 301G	FR 302G	FR 303G	FR 304G	FR 305G	FR 306G	FR 307G	UNIT
Marking code on the device		FR 301G	FR 302G	FR 303G	FR 304G	FR 305G	FR 306G	FR 307G	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	I_F	3							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 +150							°C
Storage temperature	T_{STG}	-55 to +150							°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	35	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)		I_F = 3A, T_J = 25°C	V_F	-	1.3	V
Reverse current @ rated V_R(2)		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	100	μA
Junction capacitance		1MHz, V_R = 4.0V	C_J	30	-	pF
Reverse recovery time	FR301G FR302G FR303G FR304G	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	150	ns
	FR305G			-	250	ns
	FR306G FR307G			-	500	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE(1)(2)	PACKAGE	PACKING
FR3xG	DO-201AD	1,250 / Tape & Reel
FR3xG A0G	DO-201AD	500 / Ammo box
FR3xGH	DO-201AD	1,250 / Tape & Reel
FR3xGHA0G	DO-201AD	500 / Ammo box

Notes:

1. "x" defines voltage from 50V (FR301G) to 1000V (FR307G)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

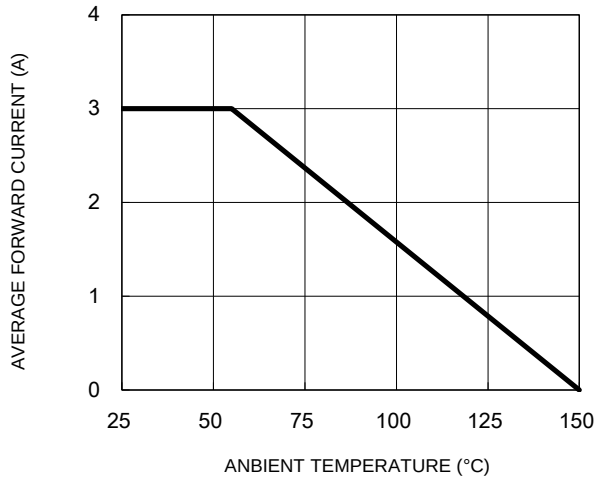


Fig.2 Typical Junction Capacitance

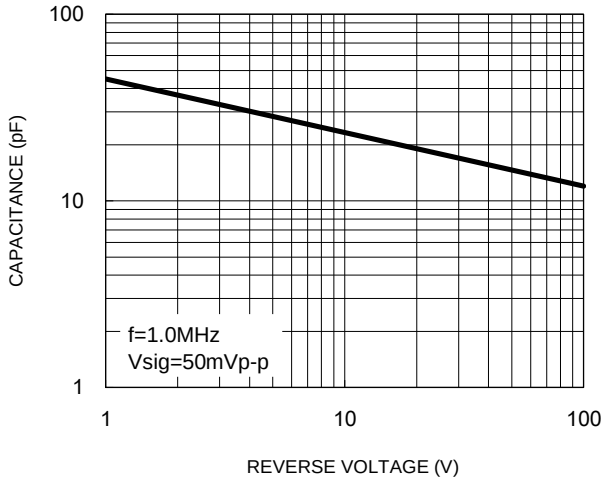


Fig.3 Typical Reverse Characteristics

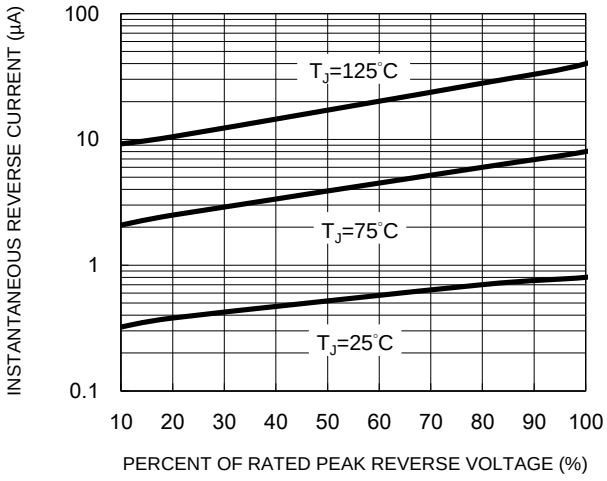


Fig.4 Typical Forward Characteristics

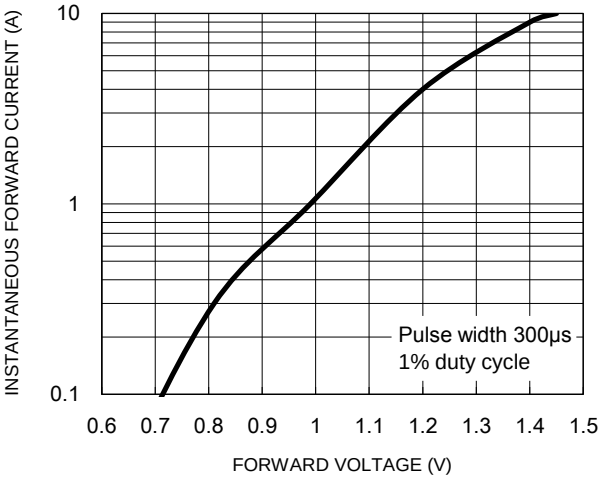
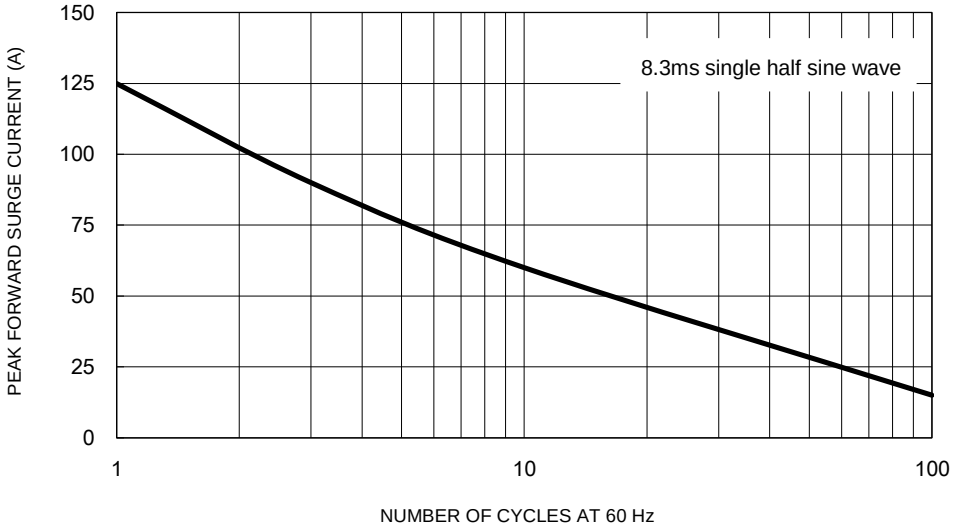


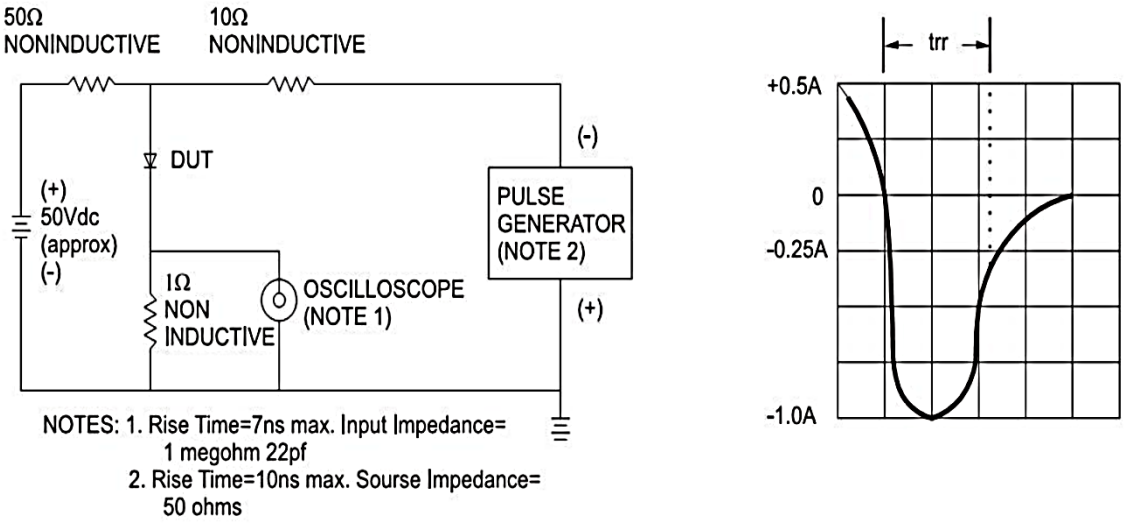
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

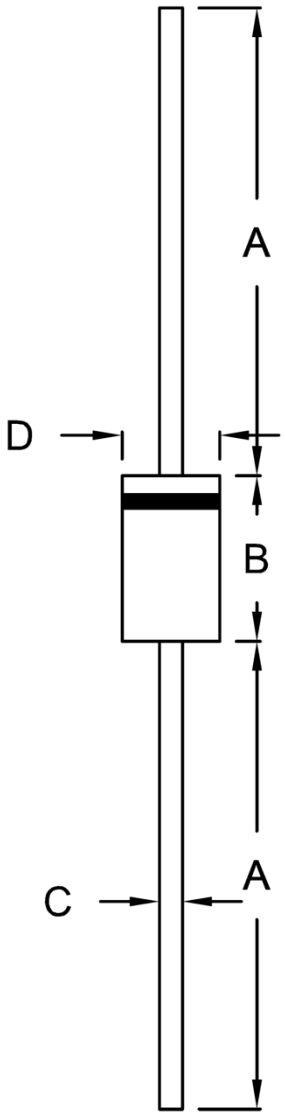
(T_A = 25°C unless otherwise noted)

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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