

5A, 200V - 600V Ultra Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- High current capability
- High reliability
- High surge current capability
- Low power loss
- 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: 1.10g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	5	A
V_{RRM}	200 - 600	V
I_{FSM}	65	A
T_{JMAX}	150, 175	°C
Package	DO-201AD	
Configuration	Single die	



DO-201AD



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	UG54G	UG56G	UG58G	UNIT
Marking code on the device		UG54G	UG56G	UG58G	
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	5			A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	65			A
Junction temperature	T_J	-55 to +175		-55 to +150	°C
Storage temperature	T_{STG}	-55 to +175		-55 to +150	°C

THERMAL PERFORMANCE				
PARAMETER		SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	UG54G	$R_{\theta JL}$	11	°C/W
	UG56G			
	UG58G		15	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	UG54G	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.05	V
	UG56G			-	1.55	V
	UG58G			-	2.10	V
	UG54G	$I_F = 5\text{A}, T_J = 125^\circ\text{C}$		-	-	V
	UG56G			-	-	V
	UG58G			-	1.70	V
Reverse current @ rated V_R ⁽²⁾	UG54G	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	UG56G			-	30	μA
	UG58G			-	100	μA
	UG54G	$T_J = 125^\circ\text{C}$		-	200	μA
	UG56G			-	200	μA
UG58G						
Reverse recovery time		$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	20	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
UG5xG	DO-201AD	1,250 / Tape & Reel
UG5xG A0G	DO-201AD	500 / Ammo box
UG5xGH	DO-201AD	1,250 / Tape & Reel
UG5xGHA0G	DO-201AD	500 / Ammo box

Notes:

1. "x" defines voltage from 200V (UG54G) to 600V (UG58G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

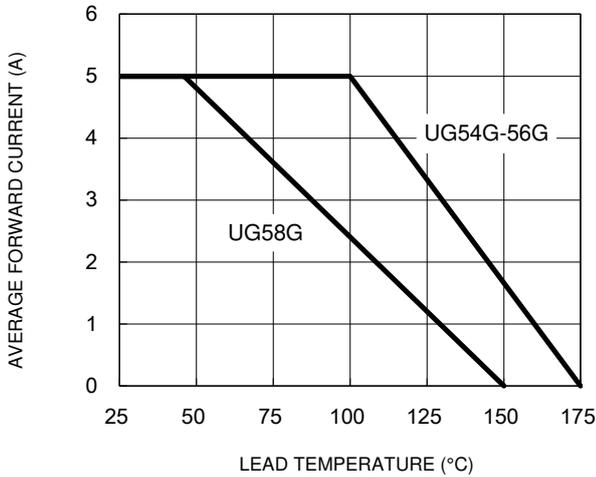


Fig.2 Typical Junction Capacitance

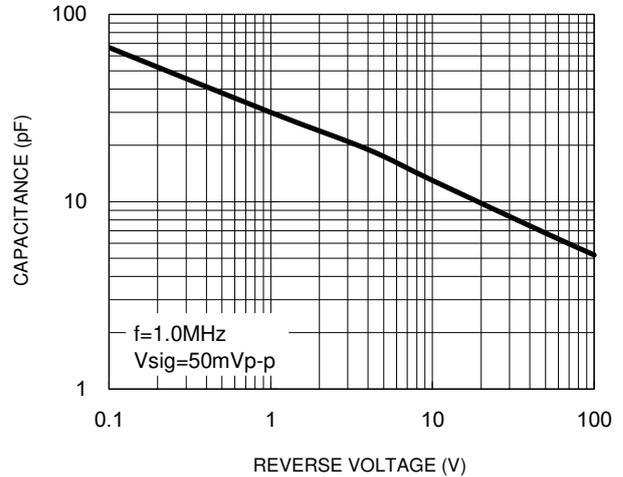


Fig.3 Typical Reverse Characteristics

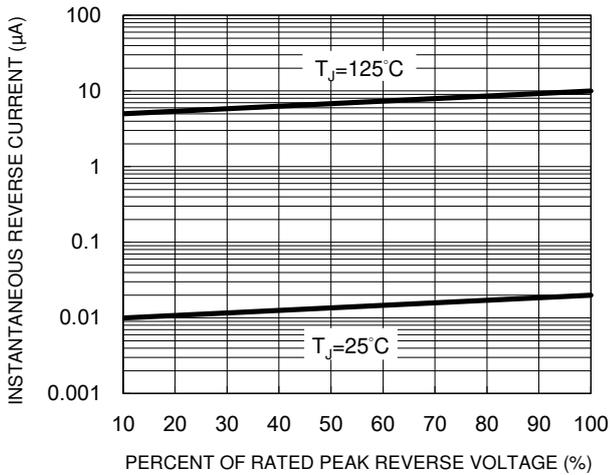


Fig.4 Typical Forward Characteristics

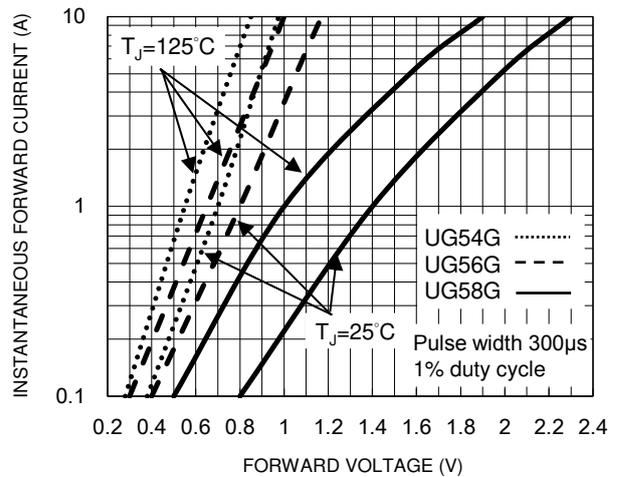
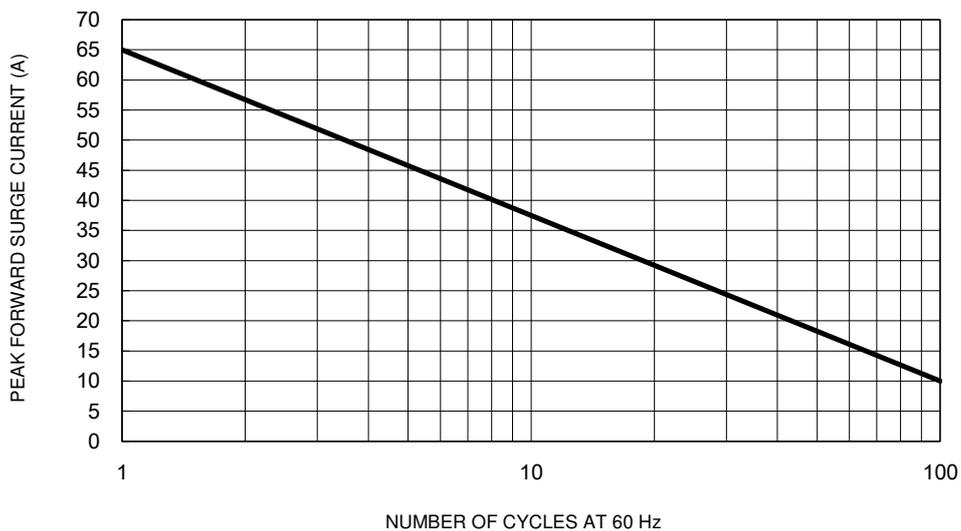


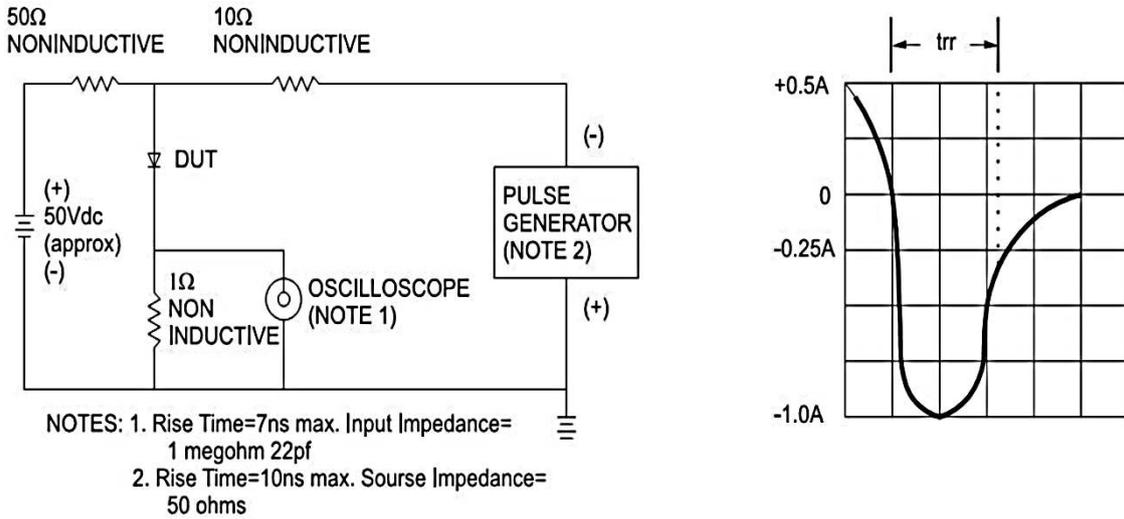
Fig.5 Maximum Non-Repetitive Forward Surge Current



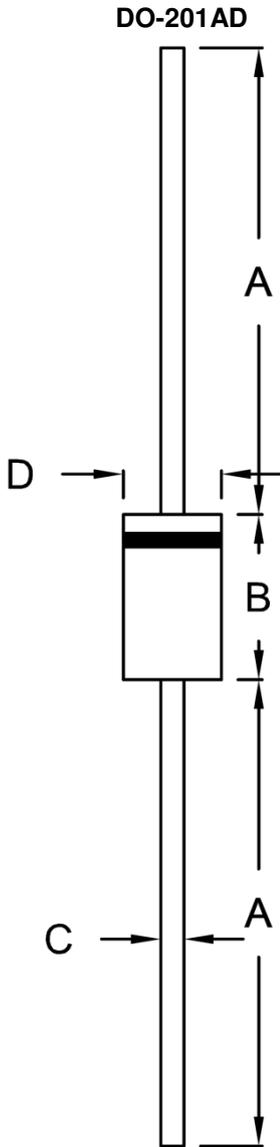
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS



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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