5A, 200V Ultra Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- Low power loss
- High reliability
- High current capability
- High surge current capability
- 175°C operating junction temperature
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	5	A
V_{RRM}	200	V
I_{FSM}	65	A
$T_{J\ MAX}$	175	°C
Package	DO-204AC (DO-15)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

APPLICATIONS

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

MECHANICAL DATA

- Case: DO-204AC (DO-15)
- 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: 0.400g (approximately)

DO-204AC (DO-15)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**UG54GS**	**UNIT**
Marking code on the device		UG54GS	
Repetitive peak reverse voltage	V_{RRM}	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	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	°C
Storage temperature	T_{STG}	-55 to +175	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	14	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	60	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	16	°C/W

Thermal Performance Note: Units mounted on PCB (10mm x 10mm Cu pad test board)

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode (1)	I_F = 2.5A, T_J = 25°C	V_F	0.83	1.05	V
	I_F = 5.0A, T_J = 25°C		0.89	1.10	V
	I_F = 2.5A, T_J = 150°C		0.69	0.95	V
	I_F = 5.0A, T_J = 150°C		0.76	1.00	V
Reverse current @ rated V_R per diode (2)	T_J = 25°C	I_R	-	10	μA
	T_J = 150°C		-	100	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	45	-	pF
Reverse recovery time	I_F = 0.5A, I_R = 1.0A I_{RR} = 0.25A	t_{rr}	-	20	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE(1)	PACKAGE	PACKING
UG54GS	DO-204AC (DO-15)	3,500 / Tape & Reel
UG54GS A0G	DO-204AC (DO-15)	1,500 / Ammo box
UG54GSH	DO-204AC (DO-15)	3,500 / Tape & Reel
UG54GSHA0G	DO-204AC (DO-15)	1,500 / Ammo box

Notes:

1. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

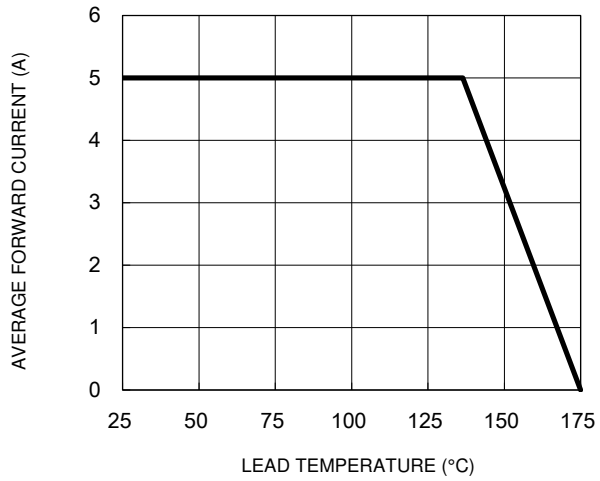


Fig.2 Typical Junction Capacitance

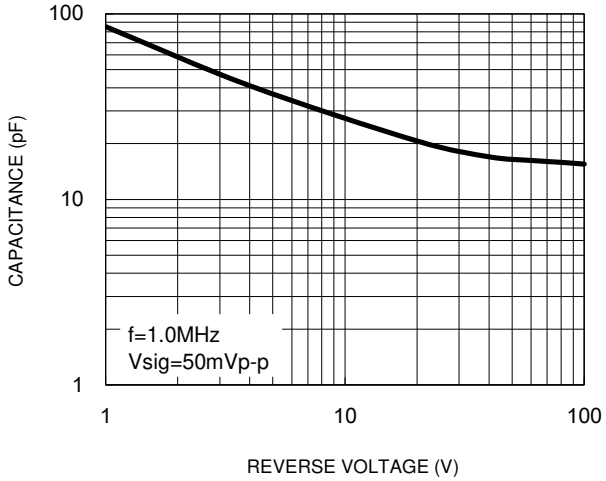


Fig.3 Typical Reverse Characteristics

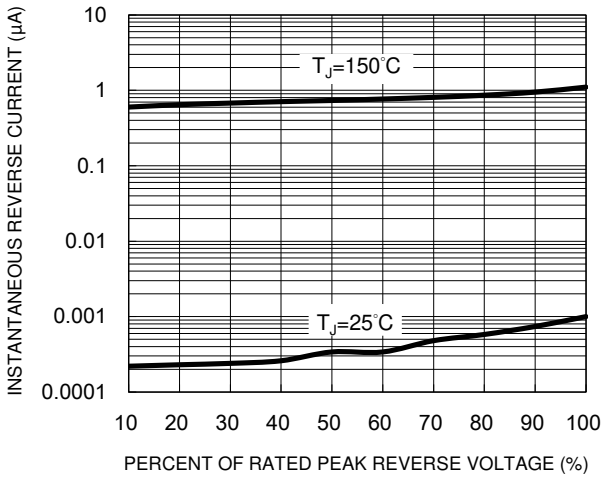
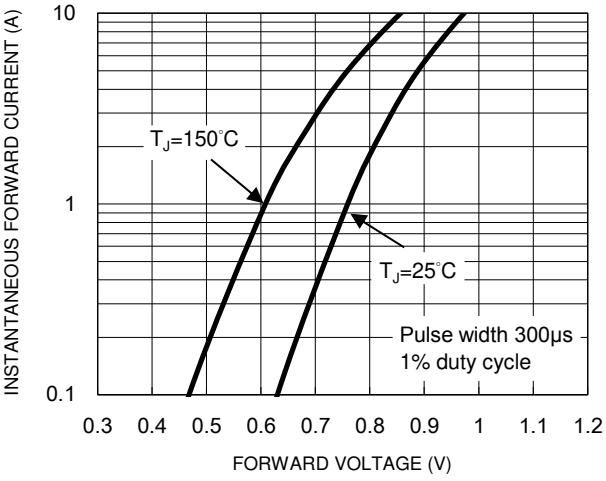
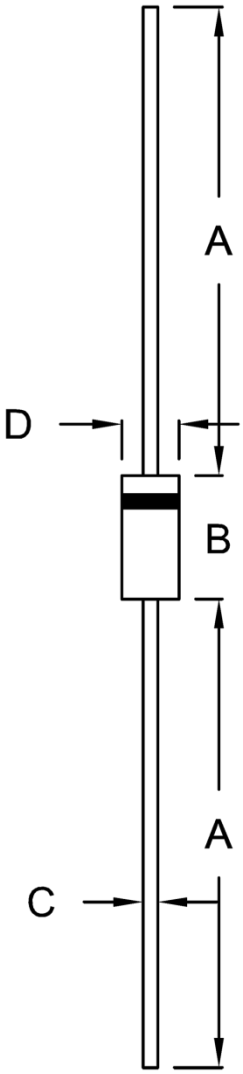


Fig.4 Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS

DO-204AC (DO-15)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	5.80	7.60	0.228	0.299
C	0.70	0.90	0.028	0.035
D	2.60	3.60	0.102	0.142

MARKING DIAGRAM

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

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