

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

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)

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



DO-204AC (DO-15)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 2.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.83	1.05	V
	$I_F = 5.0\text{A}, T_J = 25^\circ\text{C}$		0.89	1.10	V
	$I_F = 2.5\text{A}, T_J = 150^\circ\text{C}$		0.69	0.95	V
	$I_F = 5.0\text{A}, T_J = 150^\circ\text{C}$		0.76	1.00	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	$T_J = 150^\circ\text{C}$		-	100	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	45	-	pF
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 = 0.3ms
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

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

Fig.1 Forward Current Derating Curve

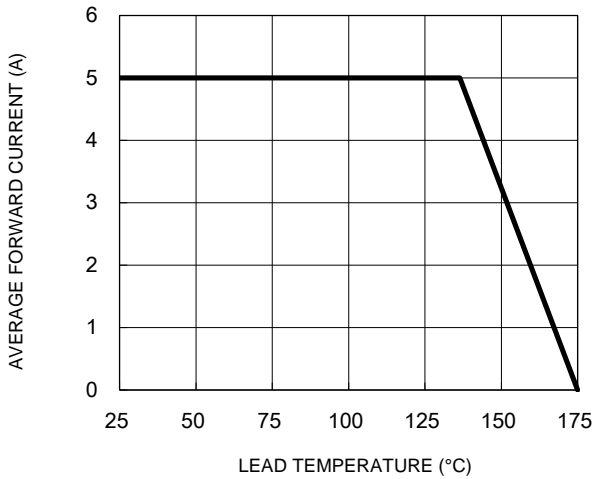


Fig.2 Typical Junction Capacitance

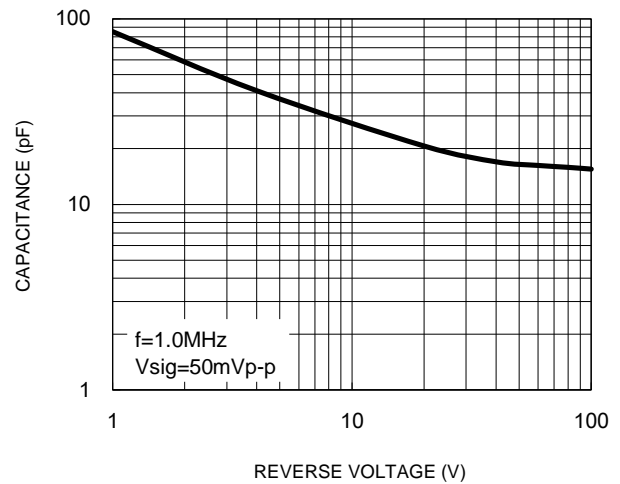


Fig.3 Typical Reverse Characteristics

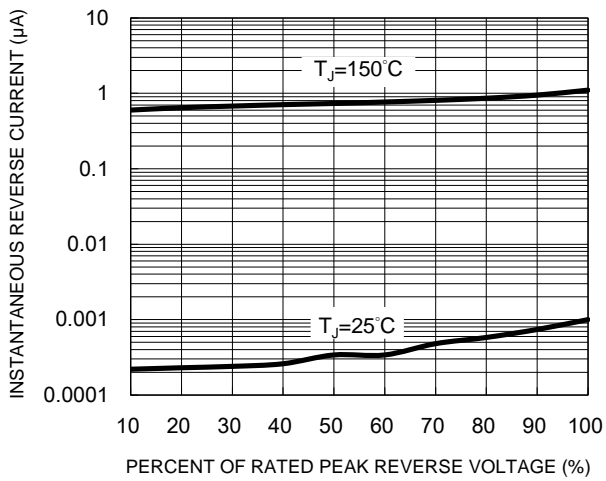
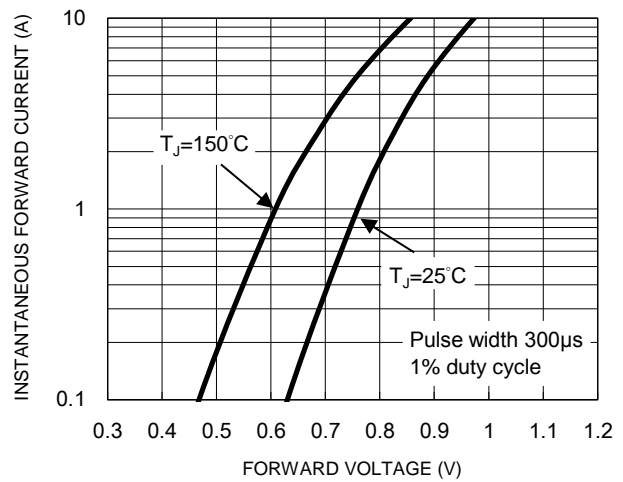
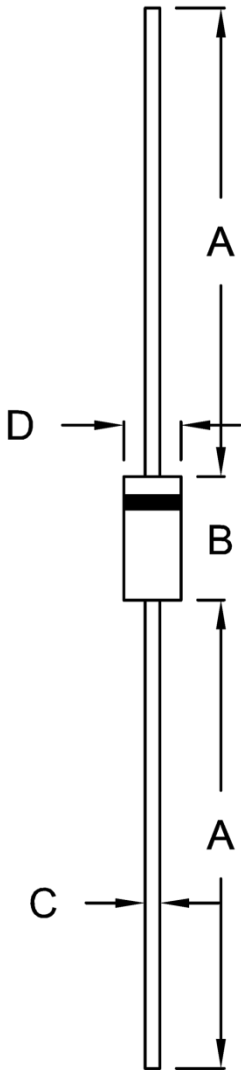


Fig.4 Typical Forward Characteristics



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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