

10A, 500V - 600V Ultra Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- High efficiency, low V_F
- High current capability
- High reliability
- High surge current capability
- RoHS Compliant
- Halogen-free

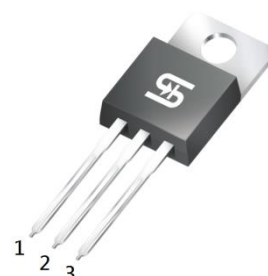
APPLICATIONS

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

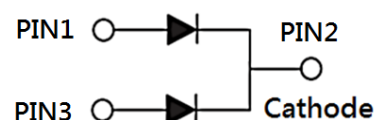
MECHANICAL DATA

- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)
- Base P/N_X ("X" denotes revision code e.g. A, B, ...)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	10	A
V_{RRM}	500 - 600	V
I_{FSM}	60	A
$T_J \text{ MAX}$	150	°C
Package	TO-220AB	
Configuration	Dual dies	



TO-220AB



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	UG1007G	UG1008G	UNIT
Repetitive peak reverse voltage	V_{RRM}	500	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	350	420	V
Forward current	I_F	10		A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	60		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-case thermal resistance	$R_{\theta JC}$	4	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 5\text{A}$, $T_J = 25^\circ\text{C}$	V_F	-	1.70	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	$T_J = 125^\circ\text{C}$		-	100	μA
Reverse recovery time	$I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $t_{rr} = 0.25\text{A}$	t_{rr}	-	25	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING	DEVICE MARKING
UG1007G	TO-220AB	50 / Tube	UG1007G
UG1008G	TO-220AB	50 / Tube	UG1008G
UG1007GH_A	TO-220AB	50 / Tube	UG1007G
UG1008GH_A	TO-220AB	50 / Tube	UG1008G

Notes:

1. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

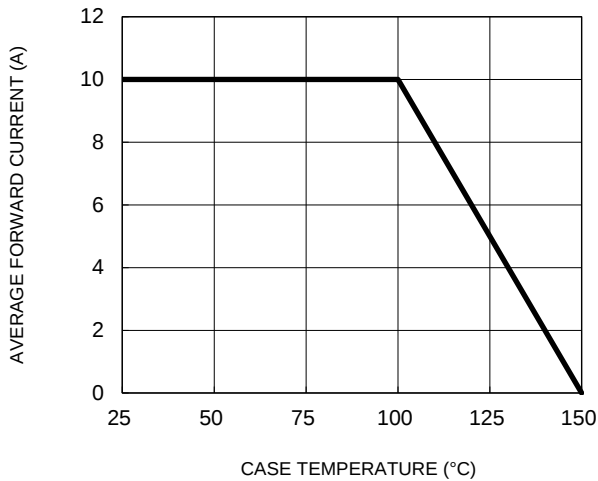


Fig.2 Typical Junction Capacitance

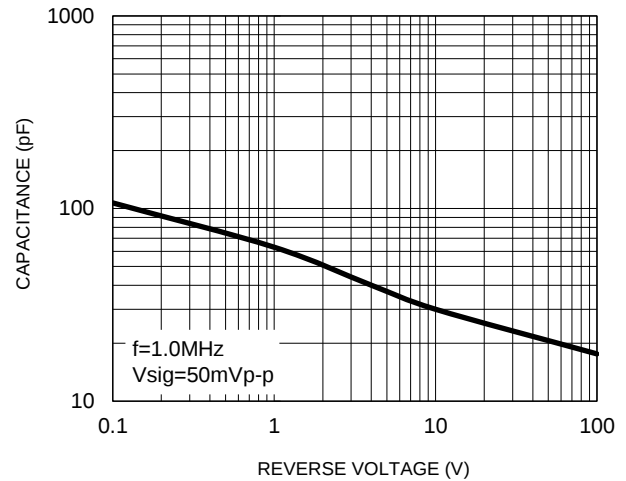


Fig.3 Typical Reverse Characteristics

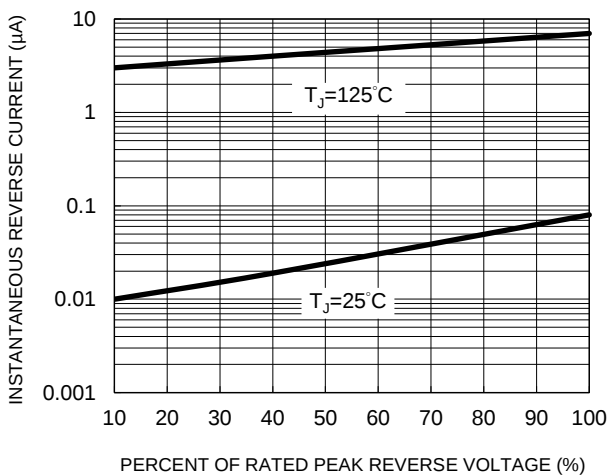


Fig.4 Typical Forward Characteristics

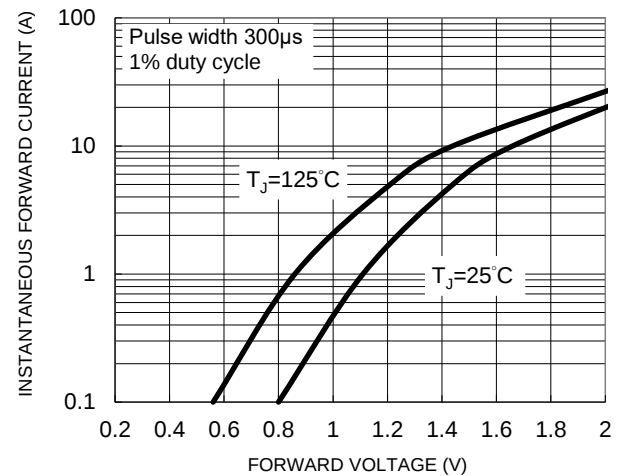
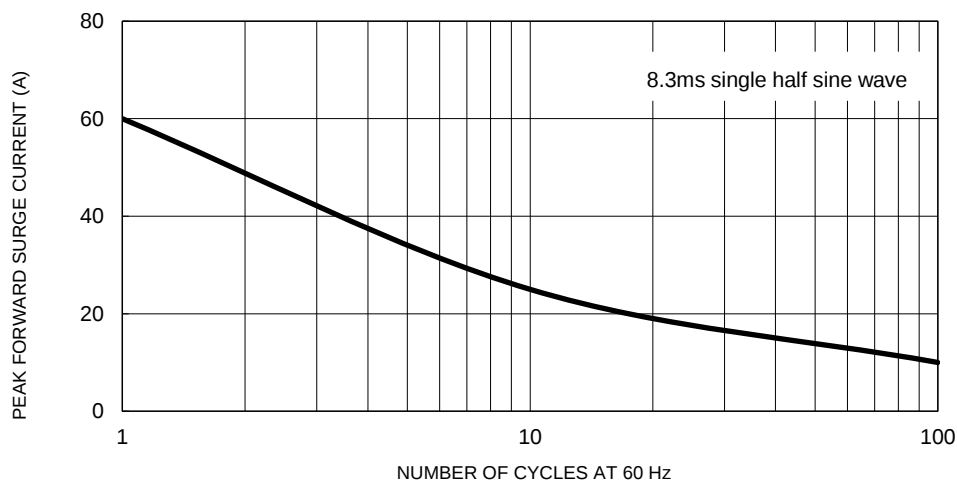
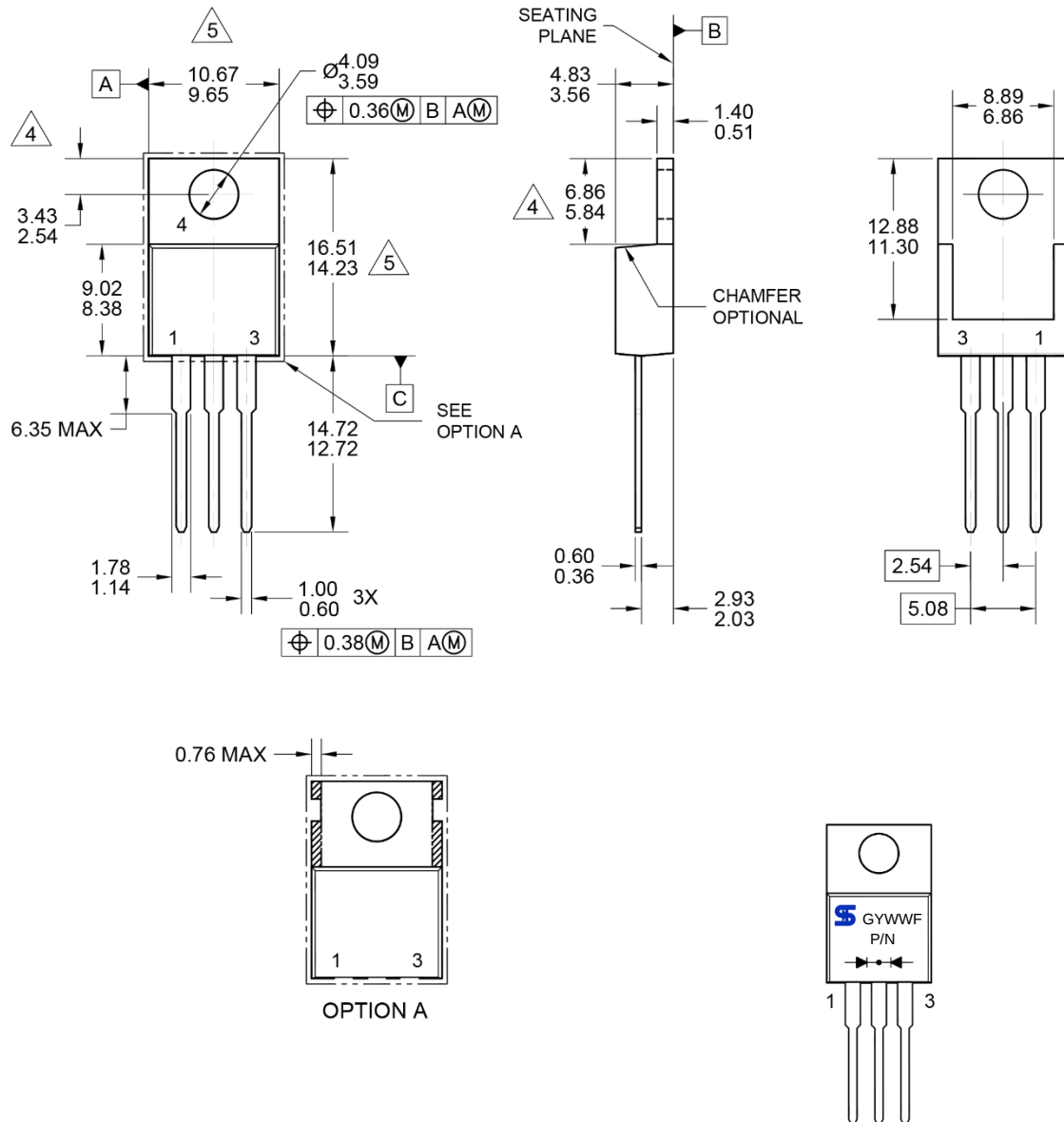


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS

TO-220AB



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC TO-220, VARIATION AB, ISSUE K.

△ 4. THE DEFINED ZONE WHERE STAMPING AND SINGULATION IRREGULARITIES ARE ALLOWED. SLOT AND NOTCH MAY APPEAR IN THIS ZONE.

△ 5. THIS DO NOT INCLUDE MOLD FLASH. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.

6. DWG NO REF: HQ2SD07-TO220AB-011 REV A.

MARKING DIAGRAM

P/N = Device marking
G = Green compound
YWW = Date code
F = Factory code

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