10A, 200V - 400V 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

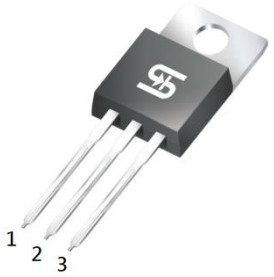
- DC to DC converters
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

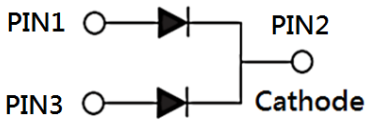
- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	10	A
V_{RRM}	200 - 400	V
I_{FSM}	60	A
$T_{J\ MAX}$	175	°C
Package	TO-220AB	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AB



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER	**SYMBOL**	**UG1004G**	**UG1005G**	**UG1006G**	**UNIT**
Repetitive peak reverse voltage	V_{RRM}	200	300	400	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	210	280	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 +175			°C
Storage temperature	T_{STG}	-55 to +175			°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\Theta JC}$	4	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	UG1004G	I_F = 5A, T_J = 25°C	V_F	-	0.95	V
	UG1005G UG1006G			-	1.25	V
Reverse current @ rated V_R per diode[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	100	μA
Reverse recovery time		I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	22	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING	DEVICE MARKING
UG1004G	TO-220AB	50 / Tube	UG1004G
UG1005G	TO-220AB	50 / Tube	UG1005G
UG1006G	TO-220AB	50 / Tube	UG1006G
UG1004GH	TO-220AB	50 / Tube	UG1004G
UG1005GH	TO-220AB	50 / Tube	UG1005G
UG1006GH	TO-220AB	50 / Tube	UG1006G

Notes:

1. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

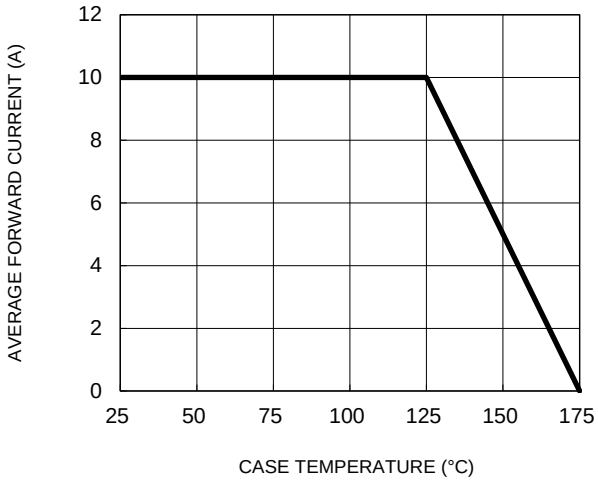


Fig.2 Typical Junction Capacitance

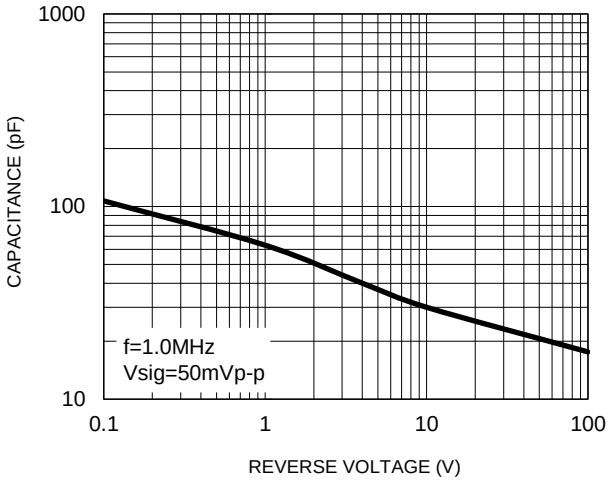


Fig.3 Typical Reverse Characteristics

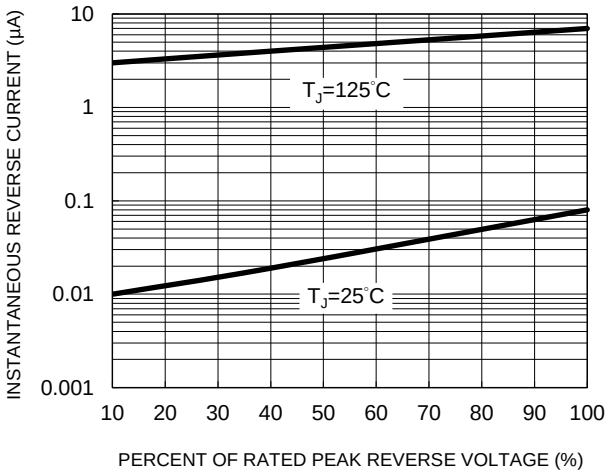


Fig.4 Typical Forward Characteristics

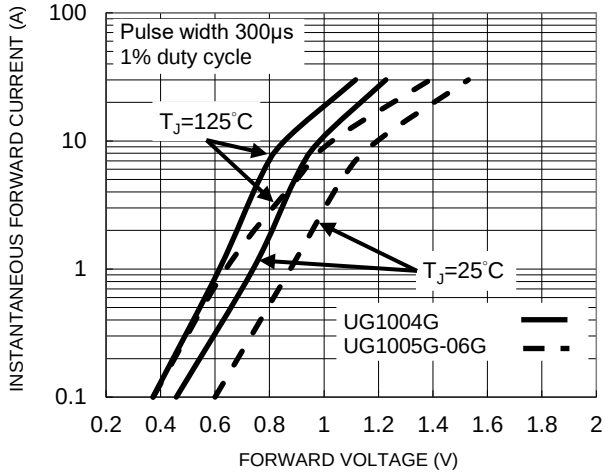
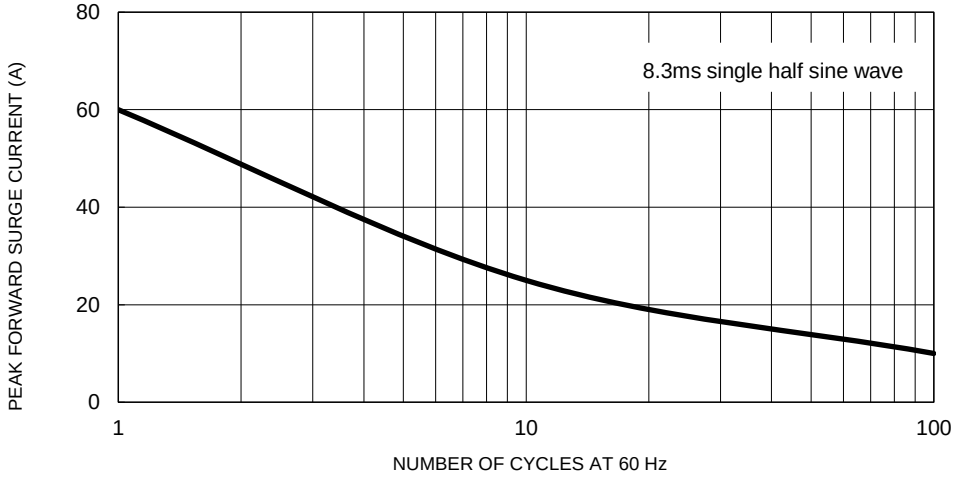
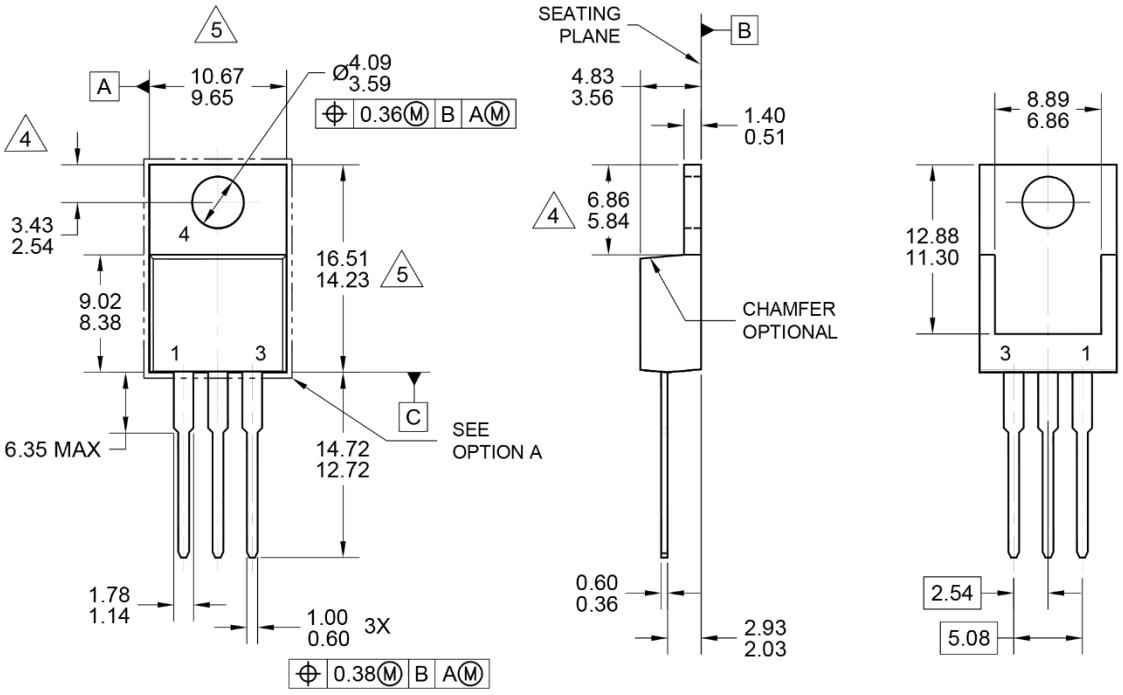


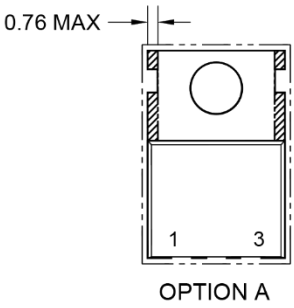
Fig.5 Maximum Non-Repetitive Forward Surge Current

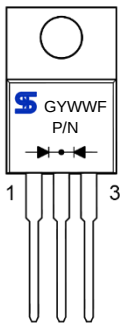


PACKAGE OUTLINE DIMENSIONS

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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