



THE DATASHEET OF GP1004



10A, 50V - 1000V Standard Rectifier

FEATURES

- AEC-Q101 qualified available
- High efficiency, low V_F
- High current capability
- High surge current capability
- Low power loss
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

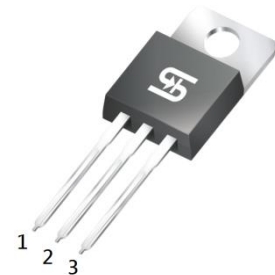
APPLICATIONS

- DC to DC converters
- Switching mode converters and inverters
- General purpose

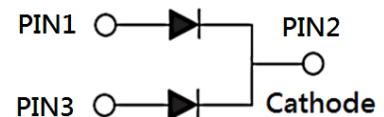
MECHANICAL DATA

- 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: 1.82g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	10	A
V_{RRM}	50 - 1000	V
I_{FSM}	125	A
T_{JMAX}	150	°C
Package	TO-220AB	
Configuration	Dual dies	



TO-220AB



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	GP 1001	GP 1002	GP 1003	GP 1004	GP 1005	GP 1006	GP 1007	UNIT
Marking code on the device		GP 1001	GP 1002	GP 1003	GP 1004	GP 1005	GP 1006	GP 1007	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	I_F	10							A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	125							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	$R_{\theta JC}$	3	°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	-	1.1	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		-	200	μA
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	C_J	30	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
GP10x	TO-220AB	50 / Tube
GP10xH	TO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 50V(GP1001) to 1000V(GP1007)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

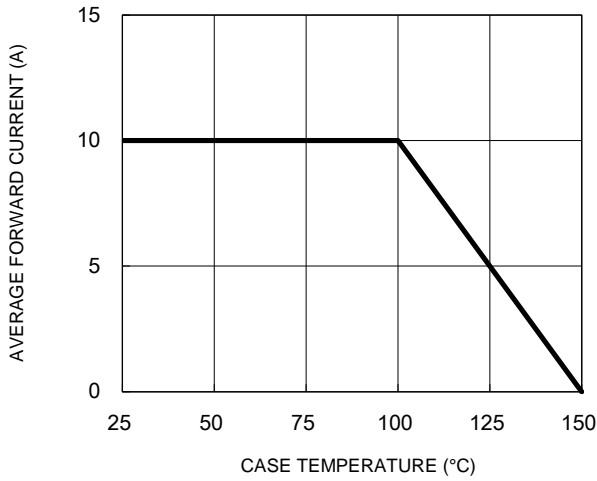


Fig.2 Typical Junction Capacitance

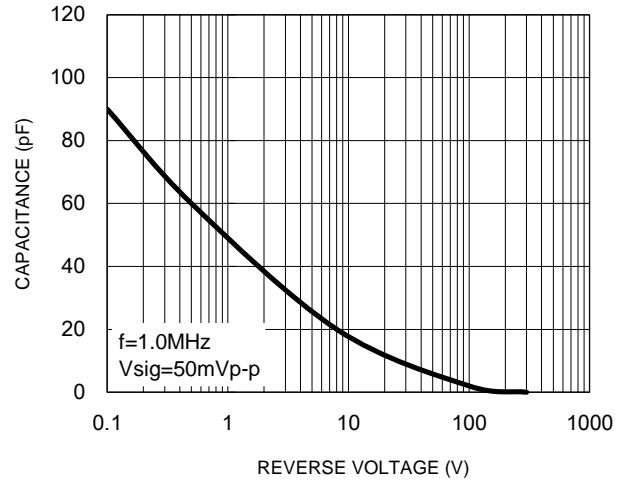


Fig.3 Typical Reverse Characteristics

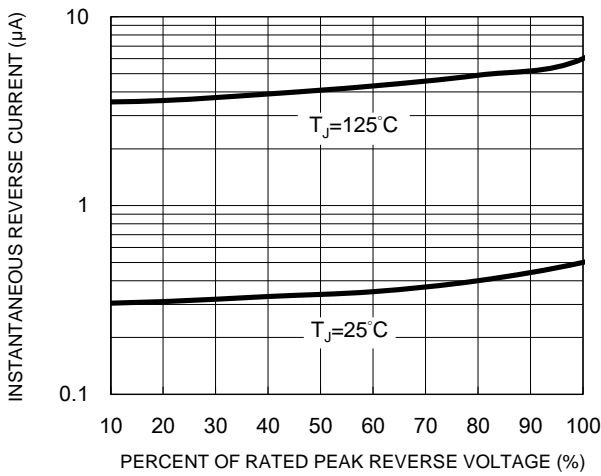


Fig.4 Typical Forward Characteristics

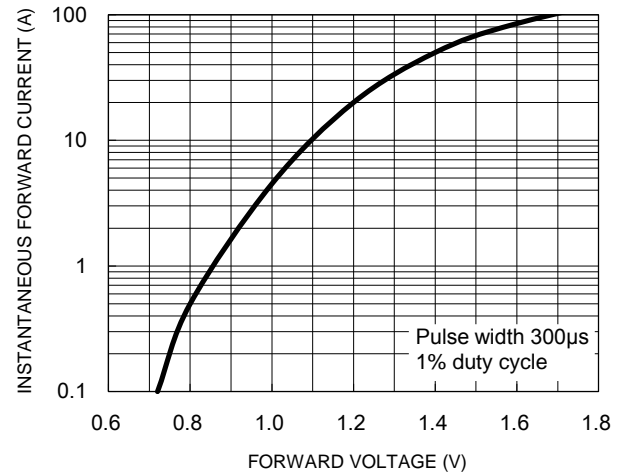
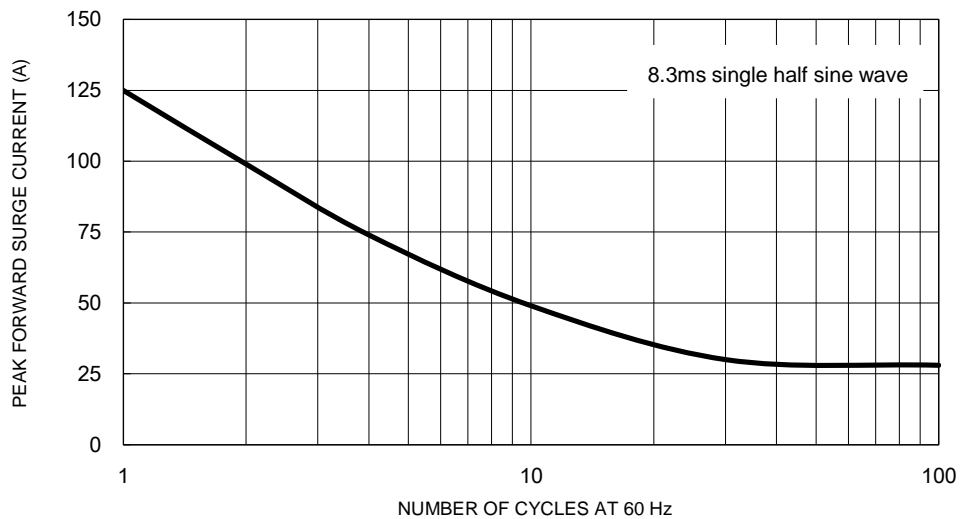
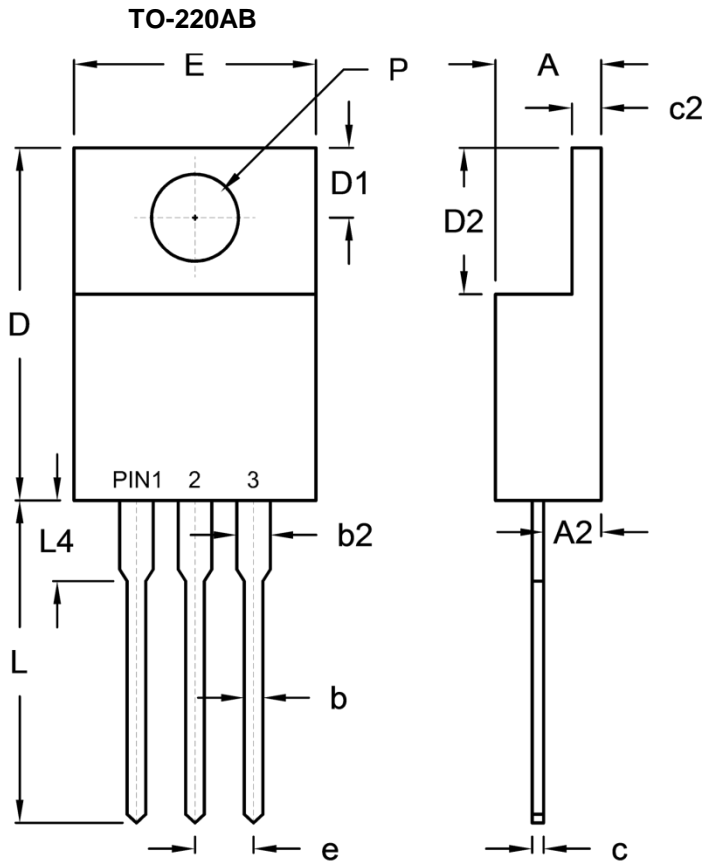


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.42	4.76	0.174	0.187
A2	2.20	2.80	0.087	0.110
b	0.68	0.94	0.027	0.037
b2	1.14	1.77	0.045	0.070
c	0.35	0.64	0.014	0.025
c2	1.14	1.40	0.045	0.055
D	14.60	16.00	0.575	0.630
D1	2.62	3.44	0.103	0.135
D2	5.84	6.86	0.230	0.270
E	-	10.50	-	0.413
e	2.41	2.67	0.095	0.105
L	13.19	14.79	0.519	0.582
L4	2.80	4.20	0.110	0.165
P	3.54	4.00	0.139	0.157

MARKING DIAGRAM



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

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