



# THE DATASHEET OF HDBL103G



## 1A, 50V - 1000V High Efficient Bridge Rectifier

### FEATURES

- Glass passivated chip junction
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- AEC-Q101 qualified available
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

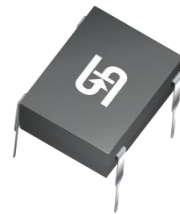
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

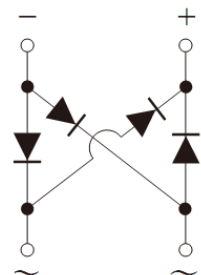
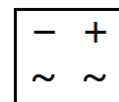
### MECHANICAL DATA

- Case: DBL
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.360g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	1	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	50	A
$T_{J\ MAX}$	150	°C
Package	DBL	
Configuration	Quad	



DBL



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

PARAMETER	SYMBOL	HDBL 101G	HDBL 102G	HDBL 103G	HDBL 104G	HDBL 105G	HDBL 106G	HDBL 107G	UNIT
Marking code on the device		HDBL 101G	HDBL 102G	HDBL 103G	HDBL 104G	HDBL 105G	HDBL 106G	HDBL 107G	
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	$I_F$	1							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	50							A
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	10.3							$\text{A}^2\text{s}$
Junction temperature	$T_J$	- 55 to +150							°C
Storage temperature	$T_{STG}$	- 55 to +150							°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	15	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	40	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V
			-	1.3	V
			-	1.7	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	500	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	$t_{rr}$	-	50	ns
			-	75	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)(2)</sup>	PACKAGE	PACKING
HDBL10xG	DBL	50 / Tube
HDBL10xGH	DBL	50 / Tube

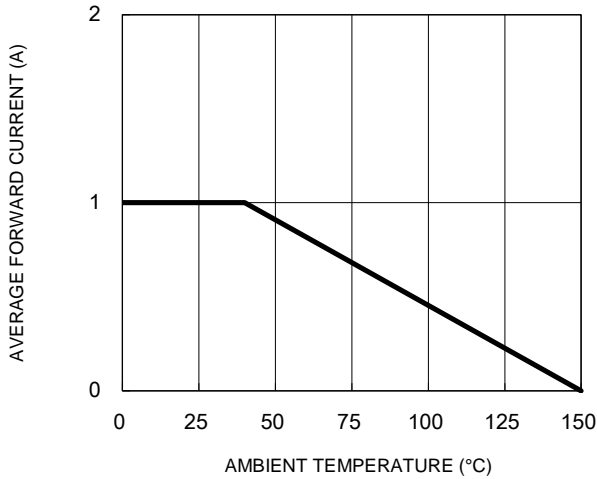
**Notes:**

1. "x" defines voltage from 50V(HDBL101G) to 1000V(HDBL107G)
2. "H" means AEC-Q101 qualified

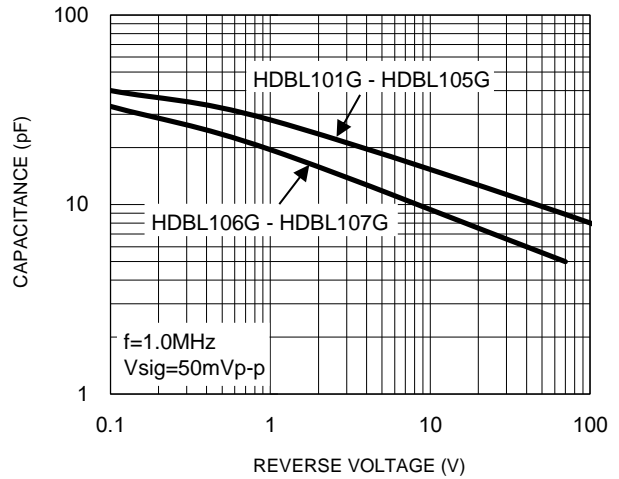
**CHARACTERISTICS CURVES**

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

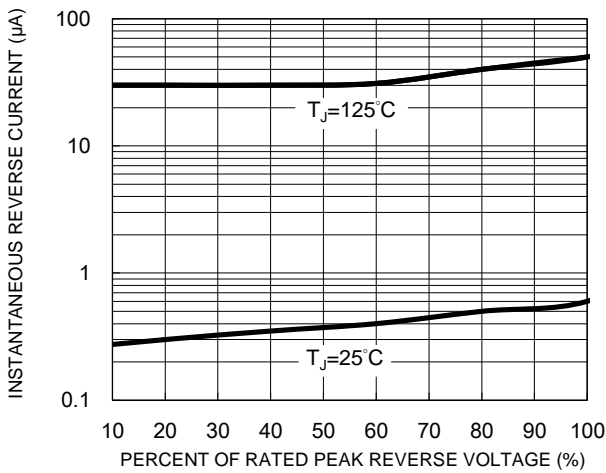
**Fig.1 Forward Current Derating Curve**



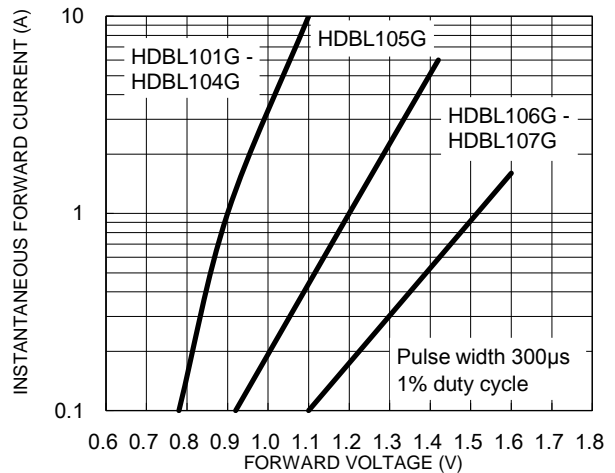
**Fig.2 Typical Junction Capacitance**



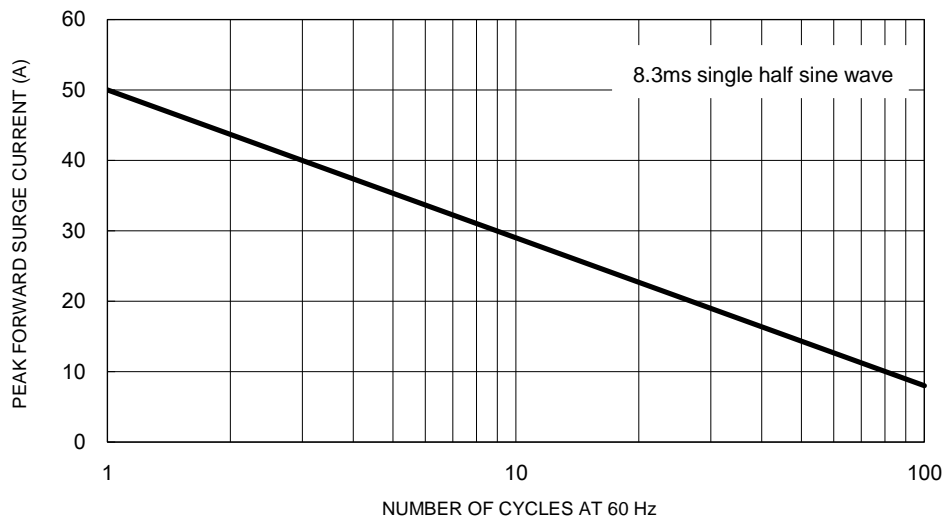
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-Repetitive Forward Surge Current**



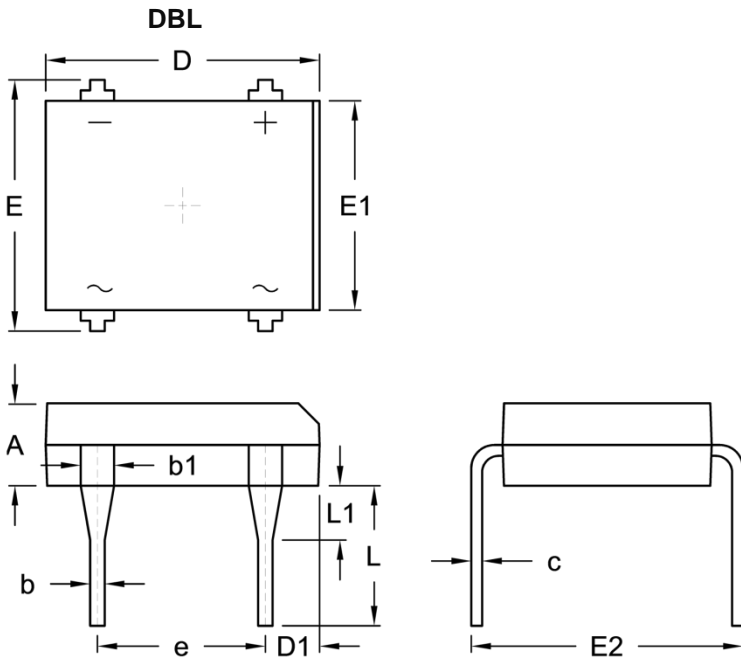
**CHARACTERISTICS CURVES**

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

**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.40	2.60	0.094	0.102
b	0.46	0.58	0.018	0.023
b1	0.89	1.14	0.035	0.045
c	0.22	0.33	0.009	0.013
D	8.12	8.51	0.320	0.335
D1	1.39	1.90	0.055	0.075
e	5.00	5.20	0.197	0.205
E	7.24	8.00	0.285	0.315
E1	6.20	6.50	0.244	0.256
E2	7.60	8.90	0.299	0.350
L	3.81	4.69	0.150	0.185
L1	1.27	2.03	0.050	0.080

**MARKING DIAGRAM**



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

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