1A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	V_F (V)	I_R (µA)
1000	1	0.95	5

Features and Benefits

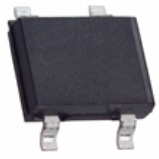
- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- Low Leakage Current
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

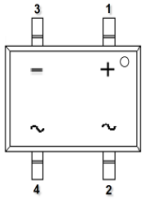
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

Mechanical Data

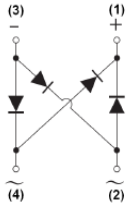
- Case: HDS
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 e3
- Polarity: As Marked on Body
- Weight: 0.0923 grams (Approximate)



Top View



Pin Diagram



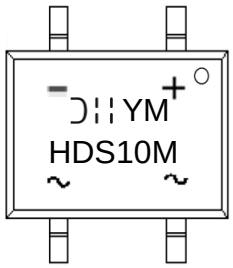
Internal Schematic

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
HDS10M-13	Commercial	HDS	5,000/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



HDS10M = Product Type Marking Code
= Manufacturers' Code Marking
YM = Date Code Marking
Y = Last Digit of Year (ex: 7 = 2017)
M = See Month/Code Table Below

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	700	V
Average Rectified Output Current (Note 5) @ T_C = +95°C	I_O	1.0	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	30	A
Non-Repetitive Peak Forward Surge Current, 1ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	60	A
I^2t Rating for Fusing (1ms < t < 8.3ms)	I^2t	2.39	A^2S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)	$R_{\theta JA}$	40	°C/W
Typical Thermal Resistance, Junction to Case (Per Element)	$R_{\theta JC}$	30	°C/W
Typical Thermal Resistance, Junction to Lead (Per Element)	$R_{\theta JL}$	18	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	1,000	—	—	V	I_R = 5μA
Forward Voltage (Per Element)	V_F	—	0.92	0.95	V	I_F = 0.5A, T_A = +25°C
Leakage Current (Note 7) (Per Element)	I_R	— —	0.08 20	5 100	μA	V_R = 1,000V, T_A = +25°C V_R = 1,000V, T_A = +125°C
Total Capacitance (Per Element)	C_T	—	8.2	—	pF	V_R = 4V, f = 1.0MHz

Notes: 5. Device mounted on glass epoxy PC board with 1.3mm^2 solder pad.
6. Device mounted on glass epoxy substrate with 1oz/ft^2, 15mm x15mm copper pad per pin.
7. Short duration pulse test used to minimize self-heating effect.

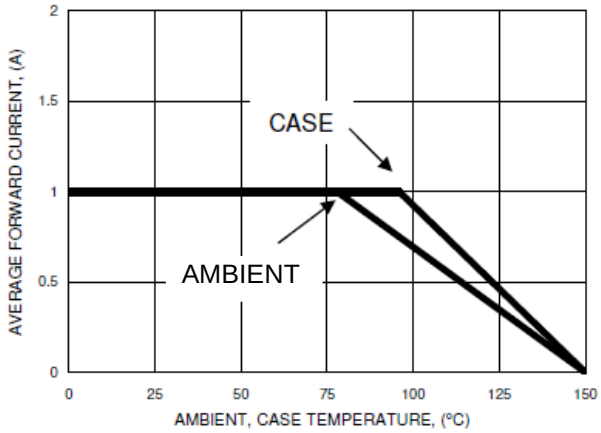


FIG.1- FORWARD CURRENT DERATING CURVE

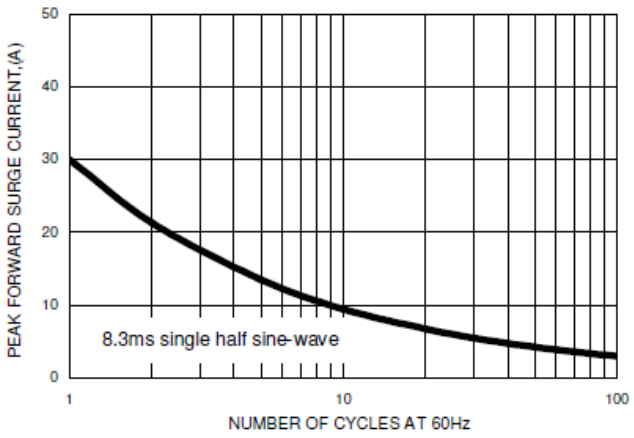


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

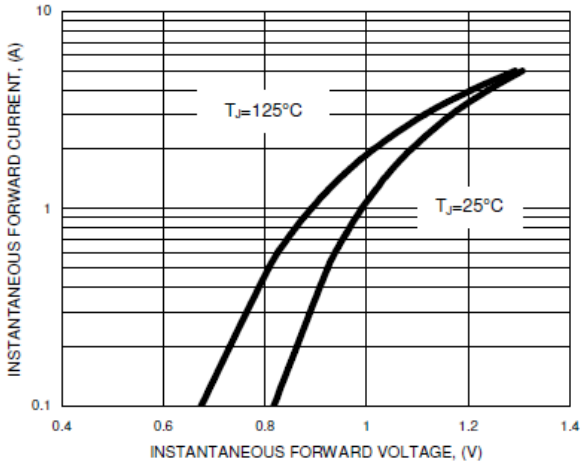


FIG.3- TYPICAL FORWARD CHARACTERISTICS

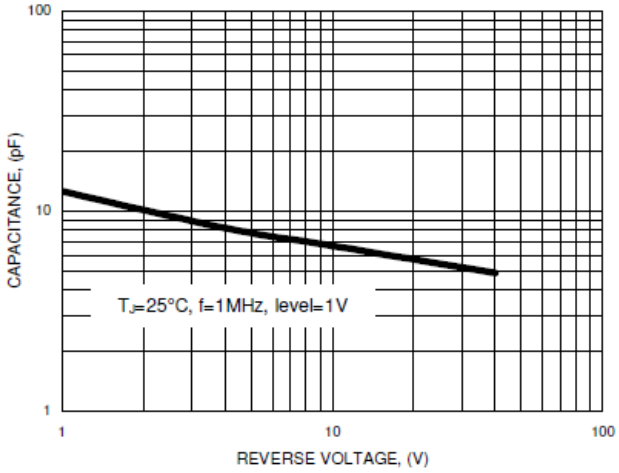


FIG.4- TYPICAL JUNCTION CAPACITANCE

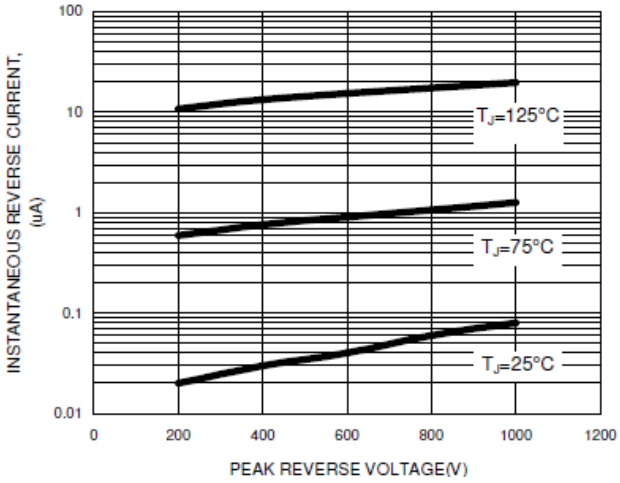
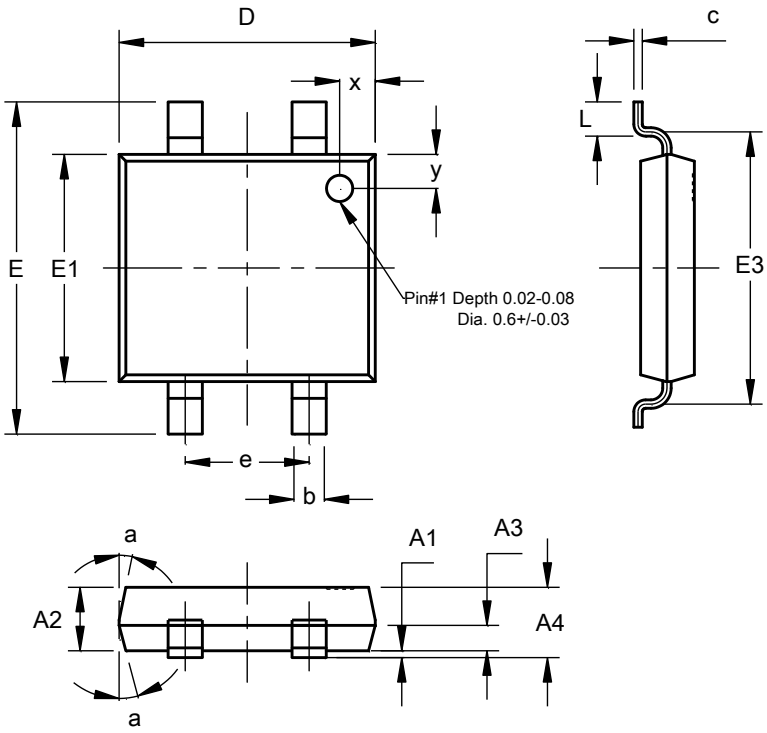


FIG.5- TYPICAL REVERSE CHARACTERISTICS

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

HDS

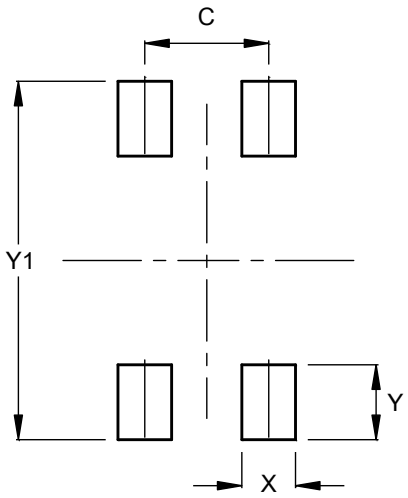


HDS			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.15	--
A2	1.20	1.30	--
A3	0.43	0.63	--
A4	1.20	1.40	--
b	0.45	0.75	--
c	0.10	0.30	--
D	4.85	5.25	--
E	6.40	6.80	--
E1	4.25	4.65	--
E3	5.20	5.60	
e	--	--	2.54
L	0.40	0.80	--
x	0.45	0.85	--
y	0.45	0.85	--
a	--	--	7°
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

HDS



Dimensions	Value (in mm)
C	2.54
X	1.00
Y	1.50
Y1	7.10

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