



HDS10M

1A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

Product Summary (@TA = +25°C)

V _{RRM} (V)	I ₀ (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

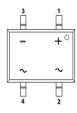
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

Mechanical Data

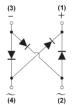
- Case: HDS
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (€3)
- Polarity: As Marked on Body
- Weight: 0.0923 grams (Approximate)



Top View



Pin Diagram



Internal Schematic

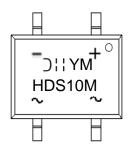
Ordering Information (Note 4)

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.
- 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

O!!= Manufacturers' Code Marking

YM = Date Code Marking

Y = Last Digit of Year (ex: 7 = 2017)

M = See Month/Code Table Below

Ī	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Code	1	2	3	4	5	6	7	8	9	0	N	D



Maximum Ratings (@ $T_A = +25^{\circ}C$, 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	Io	1.0	Α
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	30	Α
Non-Repetitive Peak Forward Surge Current, 1ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	60	А
I ² t Rating for Fusing (1ms < t < 8.3ms)	l ² t	2.39	A ² S

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	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	1,000	_	_	V	$I_R = 5\mu A$
Forward Voltage (Per Element)	V _F	_	0.92	0.95	V	$I_F = 0.5A, T_A = +25^{\circ}C$
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)	Ст		8.2	_	pF	$V_R = 4V$, $f = 1.0MHz$

Notes:

- 5. Device mounted on glass epoxy PC board with 1.3mm² solder pad.
 6. Device mounted on glass epoxy substrate with 1oz/ft², 15mm x15mm copper pad per pin.
 7. Short duration pulse test used to minimize self-heating effect.



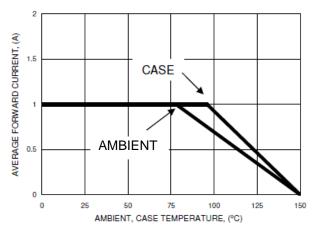


FIG.1- FORWARD CURRENT DERATING CURVE

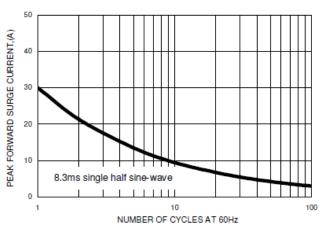


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

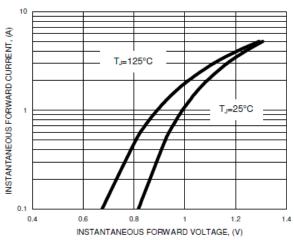


FIG.3- TYPICAL FORWARD CHARACTERISTICS

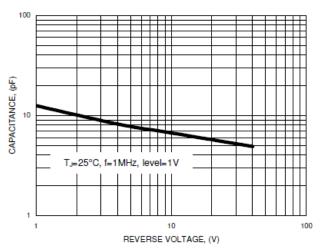


FIG.4- TYPICAL JUNCTION CAPACITANCE

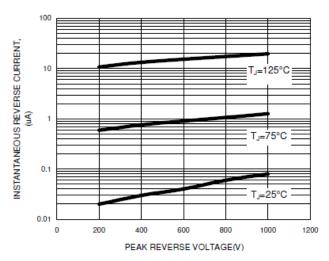


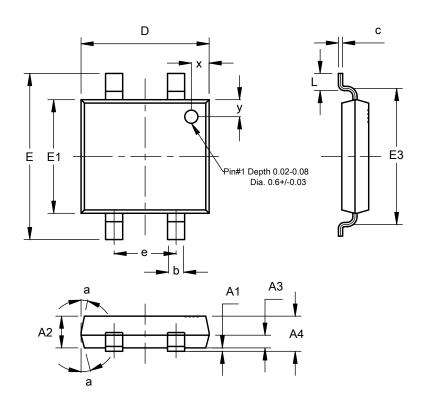
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Package Outline Dimensions

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

HDS

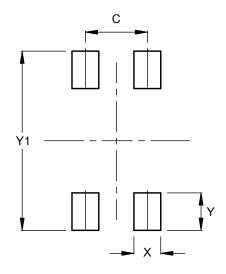


HDS						
Dim	Min	Max	Тур			
A1	0.00	0.15				
A2	1.20	1.30				
A3	0.43	0.63				
A4	1.20	1.40				
b	0.45	0.75				
C	0.10	0.30				
D	4.85	5.25				
Е	6.40	6.80				
E1	4.25	4.65				
E3	5.20	5.60				
е			2.54			
L	0.40	0.80				
X	0.45	0.85				
у	0.45	0.85				
а			7°			
All Dimensions in mm						

Suggested Pad Layout

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

HDS



Dimensions	Value (in mm)
С	2.54
Х	1.00
Y	1.50
Y1	7.10



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