HDS10M  
Green  
1A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER  
Product Summary Features and Benefits  
(@TA = +25°C)  
VRRM (V) IO (A) VF (V) IR (μA)  Glass Passivated Die Construction  
 Miniature Package Saves Space on PC Boards  
1000 1 0.95 5  
 Low Leakage Current  
 Ideal for SMT Manufacturing  
N  
 Low Forward Voltage Drop  
O  
I  Lead-Free Finish; RoHS Compliant (Notes 1 & 2)  
T  
 Halogen and Antimony Free. “Green” Device (Note 3)  
A  
M  
R Description and Applications Mechanical Data  
O  
F Suitable for AC to DC bridge full wave rectification for SMPS, LED  Case: HDS  
N lighting, adapter, battery charger, home appliances, office equipment,  Case Material: Molded Plastic. UL Flammability Classification  
I and telecommunication applications. Rating 94V-0  
D  
 Moisture Sensitivity: Level 1 per J-STD-020  
E  
 Terminals: Lead Free Plating (Matte Tin Finish). Solderable per  
C  
N MIL-STD-202, Method 208  
A  Polarity: As Marked on Body  
V  Weight: 0.0923 grams (Approximate)  
D  
A  
Pi n Diagram  
Top View 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  
YM = Date Code Marking  
HDS10M 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  
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HDS10M  
Maximum Ratings  
(@TA = +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 VRRM  
Working Peak Reverse Voltage VRWM 1000 V  
N  
DC Blocking Voltage VR  
O RMS Reverse Voltage VR(RMS) 700 V  
I Average Rectified Output Current (Note 5) @ TC = +95°C IO 1.0 A  
T  
Non-Repetitive Peak Forward Surge Current, 8.3ms  
A  
Single Half Sine-Wave Superimposed on Rated Load  
IFSM 30 A  
M  
Non-Repetitive Peak Forward Surge Current, 1ms  
R Single Half Sine-Wave Superimposed on Rated Load IFSM 60 A  
O I2t Rating for Fusing (1ms < t < 8.3ms) I2t 2.39 A2S  
F  
N  
I  
D  
E  
C Thermal Characteristics  
N  
A Characteristic Symbol Value Unit  
V Typical Thermal Resistance, Junction to Ambient (Note 6)  
D (Per Element) RθJA 40 °C/W  
A  
Typical Thermal Resistance, Junction to Case (Per Element) RθJC 30 °C/W  
Typical Thermal Resistance, Junction to Lead (Per Element) RθJL 18 °C/W  
Operating and Storage Temperature Range TJ, TSTG -55 to +150 °C  
Electrical Characteristics  
(@TA = +25°C, unless otherwise specified.)  
Characteristic Symbol Min Typ Max Unit Test Condition  
Reverse Breakdown Voltage (Note 7) V(BR)R 1,000 — — V IR = 5μA  
Forward Voltage (Per Element) VF — 0.92 0.95 V IF = 0.5A, TA = +25°C  
Leakage Current (Note 7) (Per Element) IR —  
—  
0 2.0 08 15  
0 0  
μA V VR  
R  
=  
=  
1 1, ,0 00 00 0V V,  
,  
T TA  
A  
=  
=  
++ 12 25 5°C  
°C  
Total Capacitance (Per Element) CT — 8.2 — pF VR = 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.  
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HDS10M  
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I AMBIENT  
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F I G . 3 - T Y P I C A L F O R W A R D C H A R A C T E R I S T I C S  
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Package Outline Dimensions  
Please see http://www.diodes.com/package-outlines.html for the latest version.  
HDS  
D c  
N  
O x  
I L  
T  
HDS  
A  
y Dim Min Max Typ  
M  
A1 0.00 0.15 --  
R  
A2 1.20 1.30 --  
O  
A3 0.43 0.63 --  
F E E1 E3 A4 1.20 1.40 --  
N Pin#1 Depth 0.02-0.08 b 0.45 0.75 --  
I Dia. 0.6+/-0.03 c 0.10 0.30 --  
D D 4.85 5.25 --  
E E 6.40 6.80 --  
C E1 4.25 4.65 --  
N E3 5.20 5.60  
A e e -- -- 2.54  
V b L 0.40 0.80 --  
D x 0.45 0.85 --  
A a A1 A3 y 0.45 0.85 --  
a -- -- 7°  
All Dimensions in mm  
A2 A4  
a  
Suggested Pad Layout  
Please see http://www.diodes.com/package-outlines.html for the latest version.  
HDS  
C  
Value  
Dimensions  
(in mm)  
C 2.54  
Y1 X 1.00  
Y 1.50  
Y1 7.10  
Y  
X  
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