



### 1.0A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

### **Features**

- Glass Passivated Die Construction
- Low Forward Voltage Drop, High Current Capability
- Surge Overload Rating to 50A Peak
- Designed for Surface Mount Application
- UL Listed Under Recognized Component Index, File Number E94661
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

## **Mechanical Data**

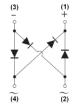
- Case: DF-S
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Tin. Solderable per MIL-STD-202, Method 208 @3
- Polarity: As Marked on Case
- Weight: 0.38 grams (Approximate)



Top View



Pin Diagram



Internal Schematic

### Ordering Information (Note 4)

Part Number	Case	Packaging
DFxS	DF-S	50/Tube
DFxS-T	DF-S	1500/Tape & Reel, 13-inch

#### 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.
- ${\it 4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.}\\$

# **Marking Information**



OH = Manufacturers' Code Marking

DFxxxS = Product Type Marking Code,ex:DF10S

YWW = Date Code Marking

Y = Last Digit of Year (ex: 6 for 2016)

WW = Week Code (01 to 52)



## **Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	DF 005S	DF 01S	DF 02S	DF 04S	DF 06S	DF 08S	DF 10S	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RMM} \ V_{RWM} \ V_{R}$	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Average Forward Rectified Current @ T <sub>A</sub> = +40°C	lo				1.0				Α
Non-Repetitive Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave Superimposed on Rated Load					50				А

# Thermal Characteristics

Characteristic	Symbol	DF 005S	DF 01S	DF 02S	DF 04S	DF 06S	DF 08S	DF 10S	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	40			°C/W				
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>			-	65 to +15	0			°C

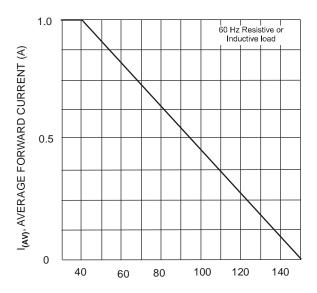
# **Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	DF 005S	DF 01S	DF 02S	DF 04S	DF 06S	DF 08S	DF 10S	Unit
Forward Voltage (Per Element)	@ I <sub>F</sub> = 1.0A	$V_{FM}$				1.1				V
Peak Reverse Current at Rated DC Blocking Voltage (Per Element)	@ T <sub>A</sub> = +25°C @ T <sub>A</sub> = +125°C	I <sub>RM</sub>				10 500				μΑ
I <sup>2</sup> t Rating for Fusing (t<8.3ms)		l <sup>2</sup> t				10.4				A <sup>2</sup> s
Typical Total Capacitance (Per Element) (Note 5)		Ст				25				pF

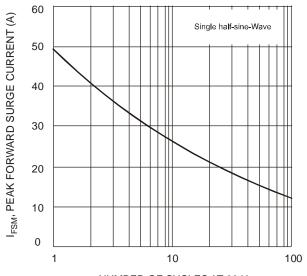
Notes:

<sup>5.</sup> Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
6. Thermal resistance, junction to ambient, measured on PC board with 5.0mm² (0.03mm thick) land areas.

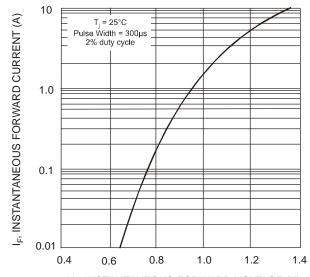




T<sub>A</sub>, AMBIENT TEMPERATURE (°C) Fig. 1 Output Current Derating Curve



NUMBER OF CYCLES AT 60 Hz Fig. 3 Max Non-Repetitive Peak Forward Surge Current



 $V_{\rm F}$ , INSTANTANEOUS FORWARD VOLTAGE (V) Fig. 2 Typical Forward Characteristics (per element)

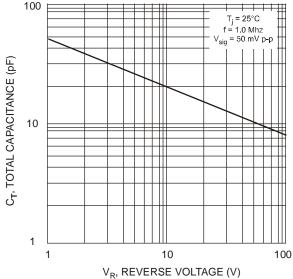
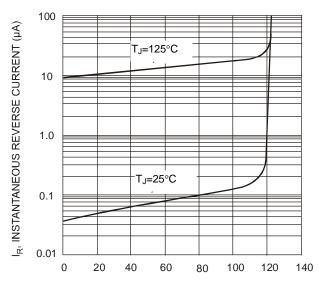


Fig. 4 Typical Total Capacitance (per element)

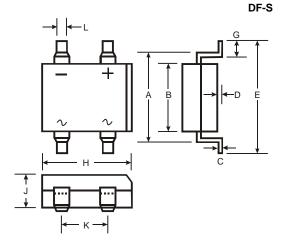




PERCENT OF RATED PEAK REVERSE VOLTAGE (%) Fig. 5 Typical Reverse Characteristics (per element)

## **Package Outline Dimensions**

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

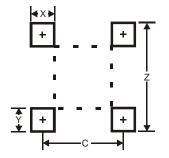


DF-S						
Dim	Min	Max				
Α	7.40	7.90				
В	6.20	6.50				
С	0.22	0.30				
D	0.076	0.33				
Е		10.40				
G	1.02	1.53				
H	8.13	8.51				
7	2.40	2.60				
K	5.00	5.20				
L	1.00	1.20				
All Dimensions in mm						

## **Suggested Pad Layout**

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

DF-S



Dimensions	Value (in mm)
Z	10.26
Х	1.2
Y	1.52
С	5.2



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