THINKI
SEMICONDUCTOR ®

DF005S thru DF10S

RoHS Pb

Pb Free Plating Product

1.0 Ampere Surface Mount Glass Passivated Bridge Rectifier

Features

- Glass passivated chip junction
- Low forward voltage drop
- High surge overload rating of 50 A peak
- Ideal for printed circuit board

Mechanical Data

- Case: Molded plastic, DB-S/DF-S
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: Leads solderable per MIL-STD-202, method 208 guaranteed
- Mounting position: Any

DB-S/DF-S Unit : inch (mm)
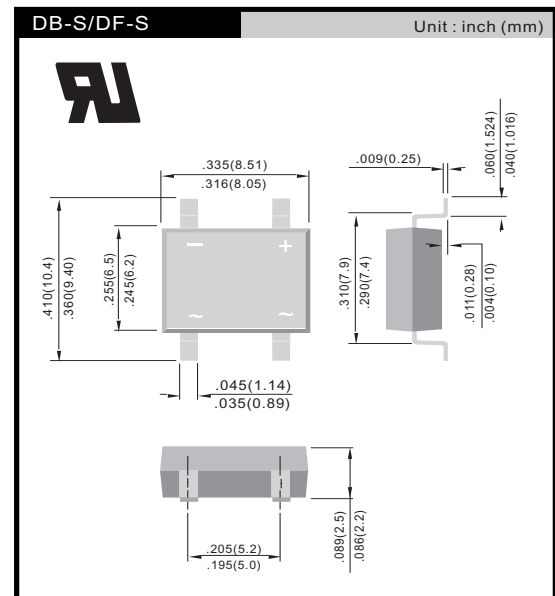
Absolute Maximum Ratings and Characteristics

Ratings at 25 $^{\circ}$C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter		Symbols	DB101S DF005S	DB102S DF01S	DB103S DF02S	DB104S DF04S	DB105S DF06S	DB106S DF08S	DB107S DF10S	Unit
Maximum Recurrent Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_A = 40 $^{\circ}$C		$I_{(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half-sine-wave Superimposed on Rated Load (JEDEC Method)		I_{FSM}	50							A
Maximum Forward Voltage at 1 A		V_F	1.1							V
Maximum Reverse Current at Rated DC Blocking Voltage	at T_A = 25 $^{\circ}$C	I_R	5							µA
	at T_A = 125 $^{\circ}$C		500							
Typical Junction Capacitance [1]		C_J	25							pF
Typical Thermal Resistance [2]		$R_{\theta JA}$	40							$^{\circ}$C/W
Typical Thermal Resistance [2]		$R_{\theta JL}$	15							$^{\circ}$C/W
Operating and Storage Temperature Range		T_J , T_S	-55 to +150							$^{\circ}$C

[1] Measured at 1 MHz and applied reverse voltage of 4 V

[2] Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B with 0.5 X 0.5" (13 X 13 mm) copper pads.

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Fig. 1 - Derating Curve Output Rectified Current

Average Forward Output Current (A) vs Ambient Temperature (°C)

60 Hz
Resistive or
Inductive Load

P.C.B mounted on
0.51 x 0.51" (13 x 13mm)
Copper pads with 0.06"
(1.5mm) lead length

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Leg

Average Forward Output Current (A) vs Number of Cycles at 60 Hz

$T_J = 150°C$
Single Sine-Wave
(JEDEC Method)

1.0 Cycle

Fig. 3 - Typical Forward Characteristics Per Leg

Instantaneous Forward Current (A) vs Instantaneous Forward Voltage (V)

$T_J = 25°C$
Pulse width = 300μs
1% Duty Cycle

Fig. 4 - Typical Reverse Leakage Characteristics Per Leg

Instantaneous Reverse Current (μA) vs Percent of Rated Peak Reverse Voltage (V)

$T_J = 125°C$

$T_J = 25°C$

Fig. 5 - Typical Junction Capacitance Per Leg

Junction Capacitance (pF) vs Reverse Voltage (V)

$T_J = 25°C$
f = 1.0MHz
Vsig = 50mVp-p

Fig. 6 - Typical Transient Thermal Impedance

Transient Thermal Impedance (°C/W) vs t, Heating Time (sec.)

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