

MB4S-TP Datasheet

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DiGi Electronics Part Number	MB4S-TP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	MB4S-TP
Description	BRIDGE RECT 1P 400V 500MA MBS-1
Detailed Description	Bridge Rectifier Single Phase Standard 400 V Surface Mount MBS-1

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Manufacturer Product Number:

MB4S-TP

Series:

-

Diode Type:

Single Phase

Voltage - Peak Reverse (Max):

400 V

Voltage - Forward (Vf) (Max) @ If:

1 V @ 400 mA

Operating Temperature:

-55°C ~ 150°C (Tj)

Package / Case:

TO-269AA, 4-BESOP

Base Product Number:

MB4

Manufacturer:

Micro Commercial Co

Product Status:

Not For New Designs

Technology:

Standard

Current - Average Rectified (Io):

500 mA

Current - Reverse Leakage @ Vr:

5 µA @ 400 V

Mounting Type:

Surface Mount

Supplier Device Package:

MBS-1

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0070

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

	E502650
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Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Glass Passivated Chip Junction
- Moisture Sensitivity Level 1
- Surface Mount Package
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 1)("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value							Unit
		MB 05S	MB 1S	MB 2S	MB 4S	MB 6S	MB 8S	MB 10S	
Peak Repetitive Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage	V_{RWM}								
DC Blocking Voltage	V_R								
RMS Reverse Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Average Rectified Forward Current @ See Fig.1	$I_{F(AV)}$	0.5(Note 2) 0.8(Note 3)							A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I_{FSM}	35							A
Non-Repetitive Peak Surge Current @ 1ms Square Wave		60							
Current Squared Time @ 1ms ≤ t ≤ 8.3ms	i^2t	5							A ² s

0.5 Amp Single Phase Bridge Rectifier 50 to 1000 Volts

Marking Code

Part Number	Marking Code
MB05S	MB05S
MB1S	MB1S
MB2S	MB2S
MB4S	MB4S
MB6S	MB6S
MB8S	MB8S
MB10S	MB10S

Internal Structure

Simplified Outline	Graphic Symbol
<p>XXXX = Marking Code</p>	

Note:

- 1.High temperature solder exemption applied, see EU directive annex 7a.
- 2.On glass epoxy P.C.B. mounted on 0.05 x 0.05"(1.3 x 1.3mm)pads
- 3.On aluminum substrate P.C.B. with an area of 0.8" x 0.8"(20 x 20mm) mounted on 0.05 x 0.05"(1.3x 1.3mm) solder pad

MBS-1

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.252	0.276	6.40	7.00	
B	0.095	0.106	2.41	2.70	
C	0.142	0.165	3.60	4.20	
D	0.179	0.195	4.55	4.95	
E	0.019	0.031	0.50	0.80	
F	0.090	0.106	2.30	2.70	
G	0.002	0.008	0.05	0.20	
H	0.027	0.043	0.70	1.10	
J	0.058	0.062	1.47	1.57	
K	0.195	0.205	4.95	5.21	
M	0.039	0.049	0.99	1.24	
N	0.006	0.016	0.15	0.41	

Suggested Solder Pad Layout

Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		150	°C
T_{stg}	Storage Temperature Range		-55		150	°C
$R_{th(J-L)}$	Thermal Resistance from Junction to Lead	Note 1		20		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		80		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 2		70		°C/W

Note:

1. On glass epoxy P.C.B. mounted on 0.05 x 0.05" (1.3 x 1.3mm) pads.

2. On aluminum substrate P.C.B. with an area of 0.8" x 0.8" (20 x 20mm) mounted on 0.05 x 0.05" (1.3 x 1.3mm) solder pad.

Electrical Characteristics @ 25°C Unless Otherwise Specified(Per Diode)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F=0.4A; T_J=25^\circ C$			1.0	V
Reverse Current	I_R	at Rated $V_R; T_J=25^\circ C$ at Rated $V_R; T_J=125^\circ C$			5 100	μA
Junction Capacitance	C_J	$V_R=4V; f=1MHz; T_J=25^\circ C$		13	35	pF

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

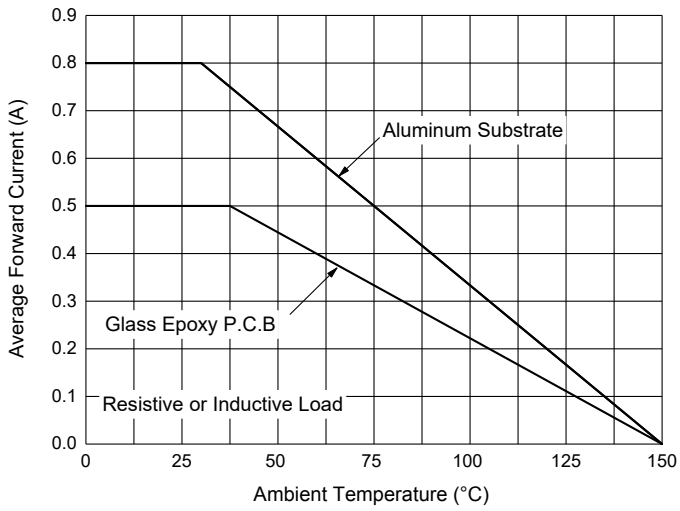


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

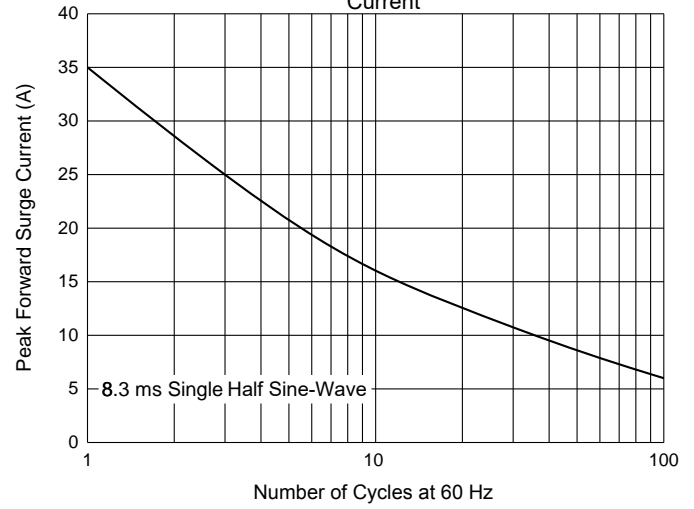


Fig. 3 - Typical Forward Characteristics

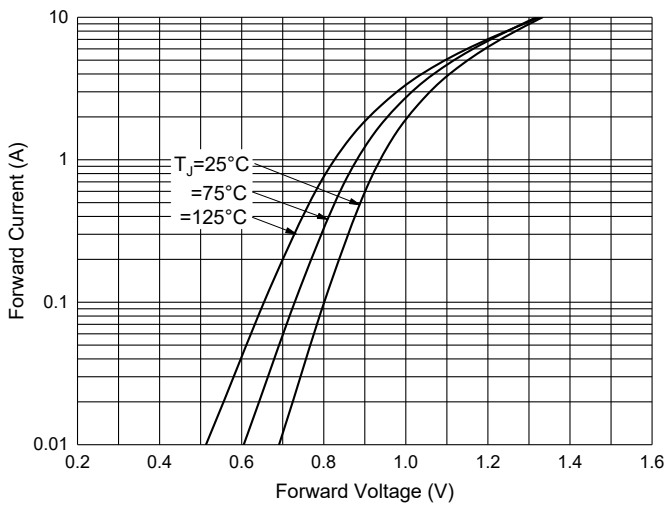


Fig. 4 - Typical Reverse Leakage Characteristics

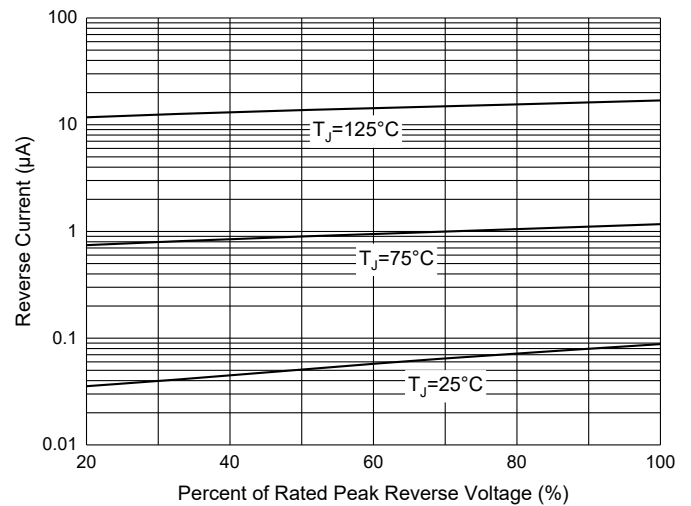
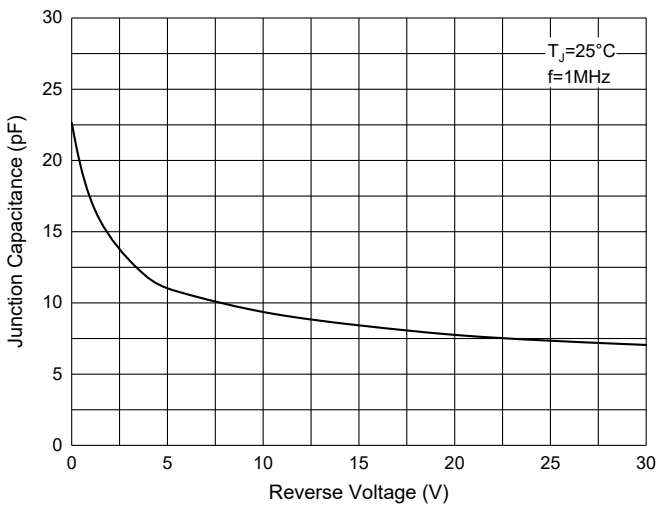


Fig. 5 - Typical Capacitance Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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