



# TB1S~TB10S

## MICRO SURFACE MOUNT GLASS PASSIVATED SINGLE-PHASE BRIDGE RECTIFIER

**VOLTAGE** 100~1000 Volt **CURRENT** 1 Amper

**MICRO DIP / TDI** Unit : inch(mm)



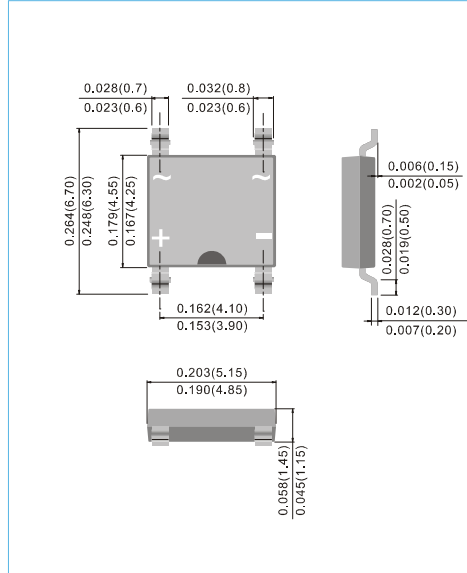
Recognized File #E139973

### FEATURES

- Glass Passivated Chip Junction
- Ideally Suited for Automatic Assembly
- Save Space On Printed Circuit Boards
- Ultra Thin Profile Package for Space Constrained Utilization
- Low Forward Voltage Drop
- Surge Overload Rating to 30A peak
- Plastic Material : UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case : TDI, Plastic
- Terminals : Solderable per MIL-STD-750, Method 2026
- Polarity : As Marked on case
- Marking : Part number
- Weight : 0.003 ounces, 0.09 grams (Approx.)



### ABSOLUTE MAXIMUM RATINGS (If not specified $T_A=25^\circ\text{C}$ )

| PARAMETER                                       | SYMBOL    | TB1S        | TB2S | TB4S | TB6S | TB8S | TB10S | UNIT                 |
|---|-----------|-------------|------|------|------|------|-------|----------------------|
| Maximum Recurrent Peak Reverse Voltage          | $V_{RRM}$ | 100         | 200  | 400  | 600  | 800  | 1000  | V                    |
| Maximum RMS Voltage                             | $V_{RMS}$ | 70          | 140  | 280  | 420  | 560  | 700   | V                    |
| Maximum DC Blocking Voltage                     | $V_{DC}$  | 100         | 200  | 400  | 600  | 800  | 1000  | V                    |
| Average Rectified Forward Current (Note 1)      | $I_o$     | 1           |      |      |      |      |       | A                    |
| Peak Surge Forward Current (Note 2)             | $I_{FSM}$ | 30          |      |      |      |      |       | A                    |
| $I^2t$ Rating for fusing ( $t < 8.3\text{ms}$ ) | $I^2t$    | 3.735       |      |      |      |      |       | $\text{A}^2\text{S}$ |
| Operating Junction Temperature                  | $T_J$     | 150         |      |      |      |      |       | $^\circ\text{C}$     |
| Storage Temperature                             | $T_{STG}$ | -55 to +150 |      |      |      |      |       | $^\circ\text{C}$     |

#### NOTE:

1. 60Hz sine wave, R-load, On FR-4 P.C.B.
2. 60Hz sine wave, Non-repetitive 1 cycle peak value.



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## ELECTRICAL CHARACTERISTICS (If not specified $T_A=25^\circ\text{C}$ )

| PARAMETER                    | SYMBOL          | CONDITIONS   | MAX. | UNIT               |
|------------------------------|-----------------|--|------|--------------------|
| Forward Voltage              | $V_F$           | $I_F=1\text{A}$ , Pulse measurement, Rating of per diode | 1    | V                  |
| Reverse Current              | $I_R$           | At $V_{RRM}$ , Pulse measurement, Rating of per diode    | 10   | $\mu\text{A}$      |
| Typical Junction capacitance | $C_J$           | $V_R=4\text{V}$ , $f=1\text{MHz}$                        | 10   | pF                 |
| Thermal Resistance           | $R_{\theta JC}$ | Junction to case (Note 1)                                | 30   | $^\circ\text{C/W}$ |
|                              | $R_{\theta JA}$ | Junction to ambient (Note 1)                             | 95   |                    |

**NOTE:**

1. Mounted on  $48\text{cm}^2$  FR-4 PCB.

### RATING AND CHARACTERISTIC CURVES

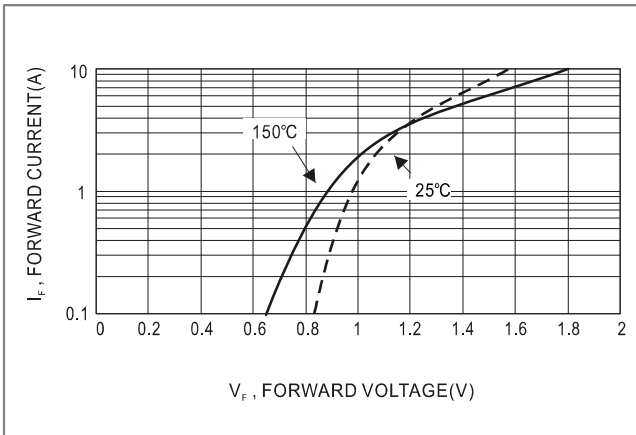


Fig.1 -TYPICAL FORWARD CHARACTERISTICS

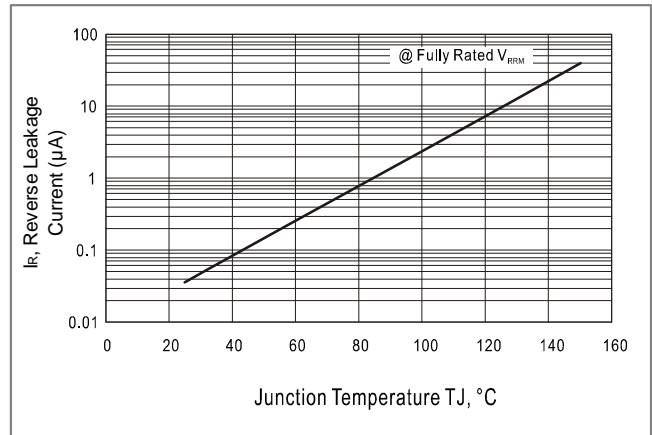


FIG-2 TYPICAL LEAKAGE CURRENT vs JUNCTION TEMPERATURE

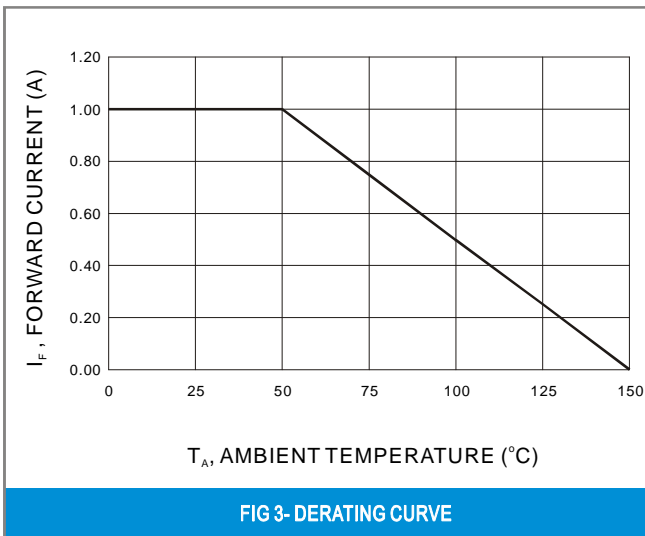
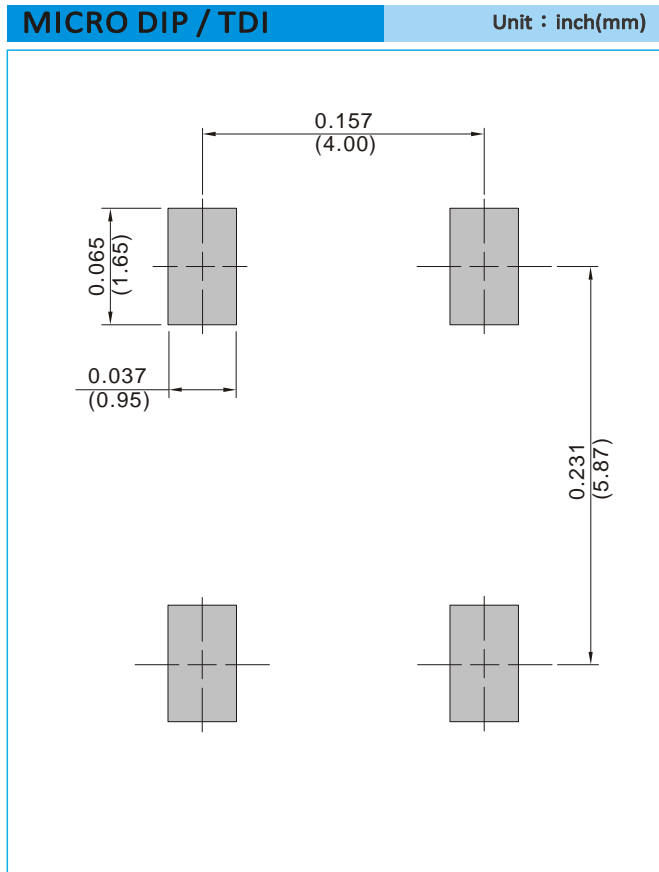


FIG 3- DERATING CURVE



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information
  - T/R - 4K per 13" plastic Reel
  - T/R - 1K per 7" plastic Reel



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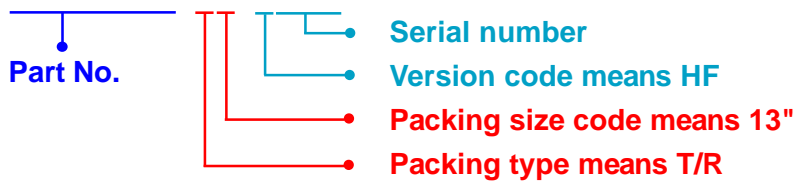
## Part No\_packing code\_Version

TB1S\_R1\_00001

TB1S\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | A                    | N/A                              | 0                    | HF                        | 0                    | serial number                         |
| Tape and Reel (T/R)                  | R                    | 7"                               | 1                    | RoHS                      | 1                    | serial number                         |
| Bulk Packing (B/P)                   | B                    | 13"                              | 2                    |                           |                      |                                       |
| Tube Packing (T/P)                   | T                    | 26mm                             | X                    |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | S                    | 52mm                             | Y                    |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | L                    | PANASERT T/B CATHODE UP (PBCU)   | U                    |                           |                      |                                       |
| FORMING                              | F                    | PANASERT T/B CATHODE DOWN (PBCD) | D                    |                           |                      |                                       |



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