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# SEMTECH

## FAST RECOVERY 1-PHASE SILICON BRIDGE RECTIFIERS

SBR05F  
 thru  
 SBR25F

January 16, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

### FAST RECOVERY, PCB MOUNTING, 1-PHASE FULL WAVE BRIDGE RECTIFIER ASSEMBLIES

- Low forward voltage drop
- Low reverse leakage current
- Subminiature design for pcb mounting
- $V_{RWM}$  up to 2500V
- PCB mounting

### QUICK REFERENCE DATA

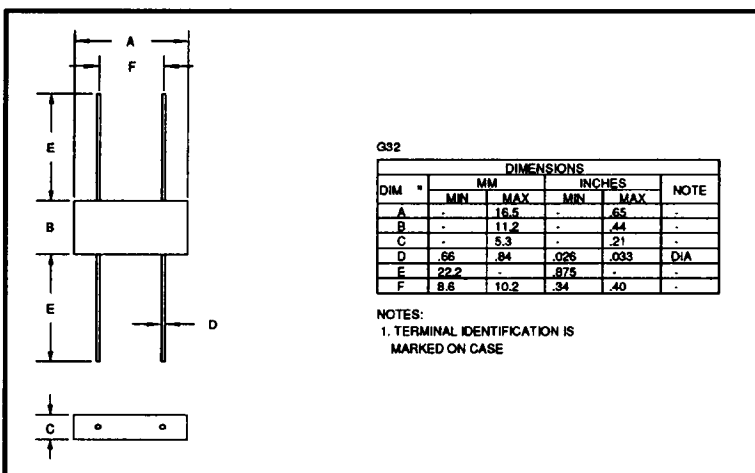
- $V_R = 50V - 2500V$
- $I_F = 0.36 - 1.0A$
- $I_R = 2.0 \mu A$
- $t_{rr} = 150 - 500nS$

### ABSOLUTE MAXIMUM RATINGS & CHARACTERISTICS

| Device Type | Working Reverse Voltage $V_{RWM}$ | Average Rectified Current $I_{F(AV)}$ |          | Repetitive Surge Current $I_{FRM}$ | Reverse Leakage Current $I_R @ V_{RWM}$ |         | Forward Voltage drop / leg @ 25°C $V_F @ 1A$ * @ 100mA | Reverse Recovery Time $t_{rr}$ @ 25 °C |
|-------------|-----------------------------------|---------------------------------------|----------|------------------------------------|---|---------|--|--|
|             |                                   | @ 55 °C                               | @ 100 °C |                                    | @ 25 °C                                 | @ 25°C  |  |  |
|             |                                   | Volts                                 | Amps     | Amps                               | Amps                                    | $\mu A$ | $\mu A$  | Volts                                  |
| SBR05F      | 50                                | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.2  | 150                                    |
| SBR1F       | 100                               | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.2  | 150                                    |
| SBR2F       | 200                               | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.2  | 150                                    |
| SBR4F       | 400                               | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.2  | 150                                    |
| SBR6F       | 600                               | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.2  | 250                                    |
| SBR8F       | 800                               | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.5  | 300                                    |
| SBR10F      | 1000                              | 1.0                                   | 0.65     | 10                                 | 2.0                                     | 50      | 1.5  | 500                                    |
| SBR25F      | 2500                              | 0.36                                  | 0.23     | 2.5                                | 2.0                                     | 50      | * 5.0  | 300                                    |

### MECHANICAL

<sup>1</sup> Measured on discrete devices prior to assembly



SBR4F is available in Europe to DEF STAN 59-61/90/213 release to F and FX levels.

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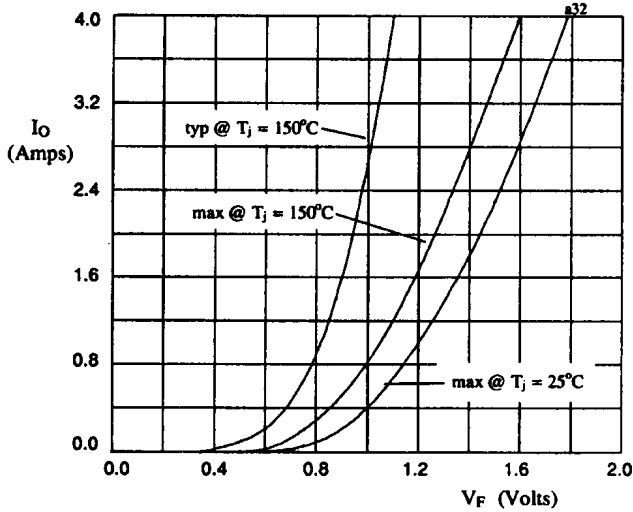


Fig 1. Forward voltage drop against output current per leg for SBR05F thru SBR6F.

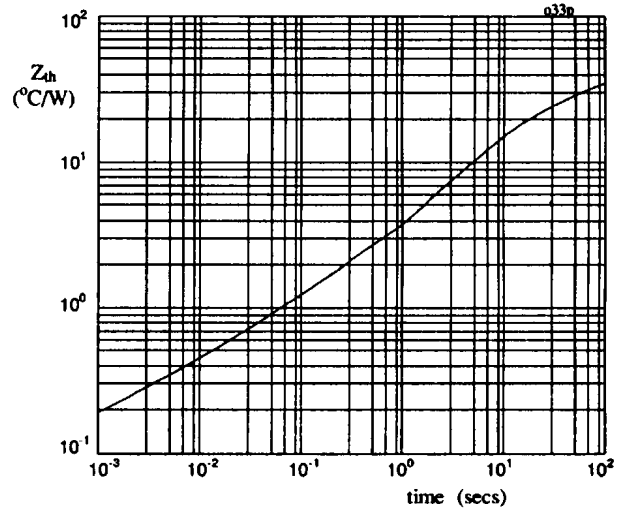


Fig 2. Transient thermal impedance characteristic per leg for SBR05F thru SBR10F

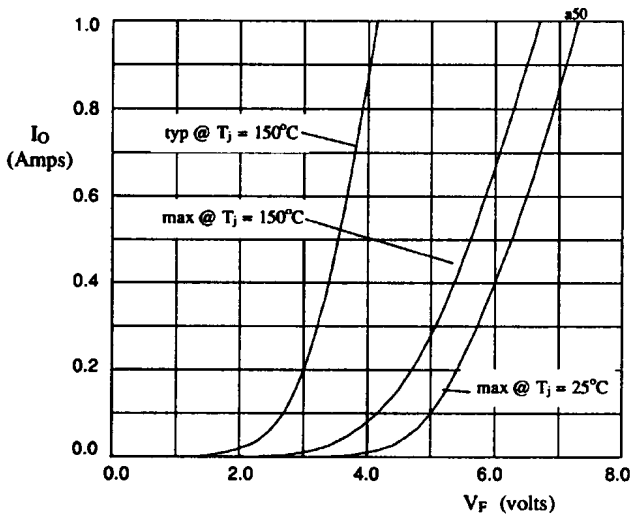


Fig 3. Forward voltage drop against output current per leg for SBR25F

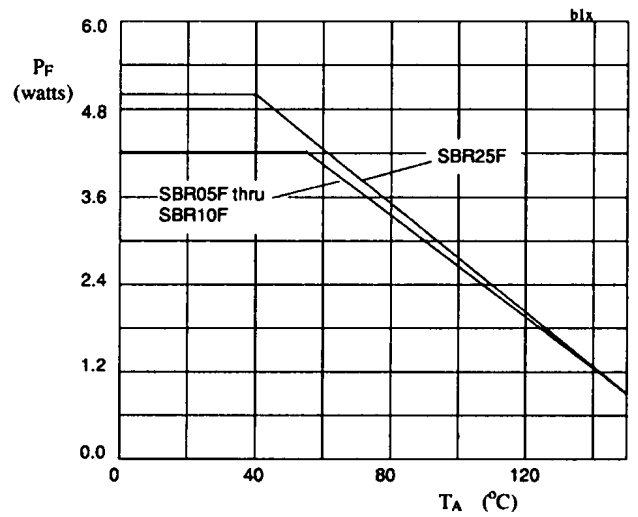


Fig 4. Power derating characteristics when p.c.b mounted