

**SEMTECH****HIGH CURRENT, 1-PHASE FULL  
WAVE BRIDGE ASSEMBLY****SET121203  
SET121219  
SET121212  
SET121204  
SET121211**

January 29, 1998

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

**HIGH CURRENT, HIGH DENSITY, SINGLE PHASE  
FULL WAVE BRIDGE RECTIFIER.****QUICK REFERENCE  
DATA**

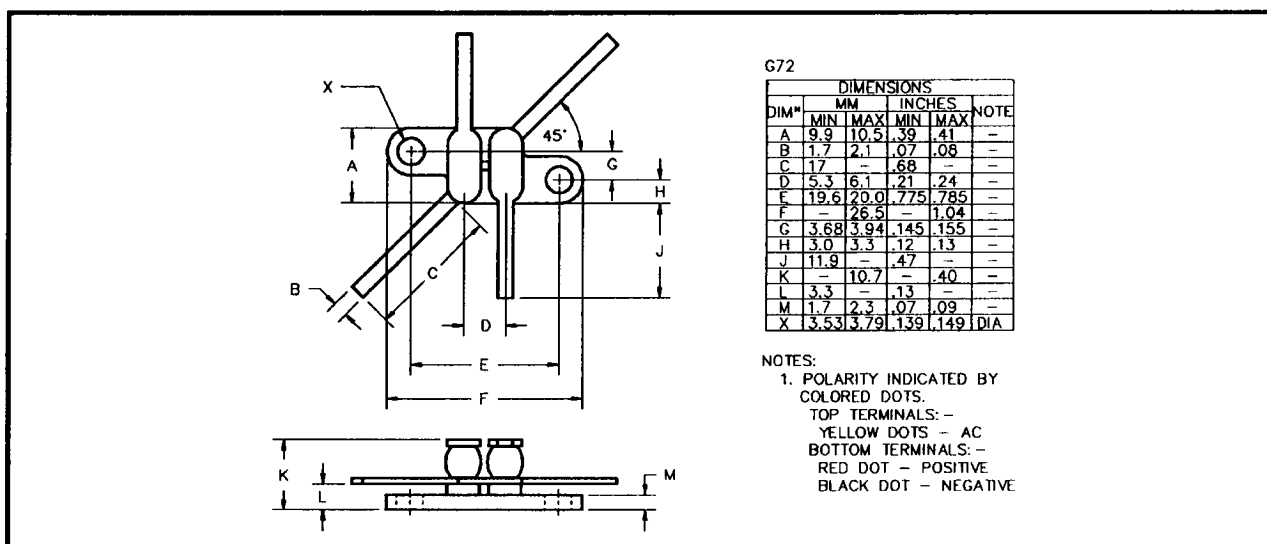
- Low thermal impedance
- Small size and low weight
- High current applications
- Isolated for direct heatsink mounting
- High surge ratings

- $V_{RWM} = 150V - 1000V$
- $I_O = 30A$
- $t_{rr} = 30nS - 2\mu S$
- $I_{FSM} \geq 150A$

**ABSOLUTE MAXIMUM RATINGS**

| Device Type | Working Reverse Voltage ( $V_{RWM}$ ) | Average Rectified Current ( $I_{F(AV)}$ ) @ $T_{MB}$ |       |       | 1 Cycle Surge Current $I_{FSM}$ @ $t_p = 8.3mS$ |         | Operating & Storage Temperature Range<br>( $T_{OP}$ ) ( $T_{STG}$ ) |
|-------------|---------------------------------------|--|-------|-------|---|---------|---|
|             |                                       | @ 55°C   | 100°C | 125°C | @ 25°C  | @ 100°C |   |
|             | Volts                                 | Amps   | Amps  | Amps  | Amps  | Amps    | °C  |
| SET121203   | 1000                                  | 30   | 22    | 16    | 150   | 100     | -55 to +175   |
| SET121219   | 1000                                  | 20   | 16    | 12    | 150   | 80      | -55 to +175   |
| SET121212   | 600                                   | 30   | 22    | 16    | 150   | 100     | -55 to +175   |
| SET121204   | 400                                   | 30   | 22    | 16    | 150   | 80      | -55 to +175   |
| SET121211   | 150                                   | 30   | 20    | 14    | 175   | 175     | -55 to +150   |

$$R_{\theta JMB} = 0.75^{\circ}C/W$$

**MECHANICAL**

January 29, 1998

**ELECTRICAL CHARACTERISTICS**

| Device Type | Maximum Leakage Current $I_R$ @ $V_{RWM}$ |                           | Maximum Forward Voltage<br>$V_F$ @ 9A/leg<br>@ 25°C | Maximum Reverse Recovery Time<br>$t_{rr}$ @ 25°C |
|-------------|---|---------------------------|---|--|
|             | $T_j = 25^\circ\text{C}$                  | $T_j = 100^\circ\text{C}$ |   |  |
|             | $\mu\text{A}$                             | $\mu\text{A}$             | Volts   | nS   |
| SET121203   | 2.0                                       | 40                        | 1.2   | 2000   |
| SET121219   | 2.0                                       | 50                        | 2.2   | 150  |
| SET121212   | 2.0                                       | 40                        | 1.2   | 2000   |
| SET121204   | 2.0                                       | 40                        | 1.5   | 150  |
| SET121211   | 20.0                                      | 1mA                       | 1.1   | 30   |

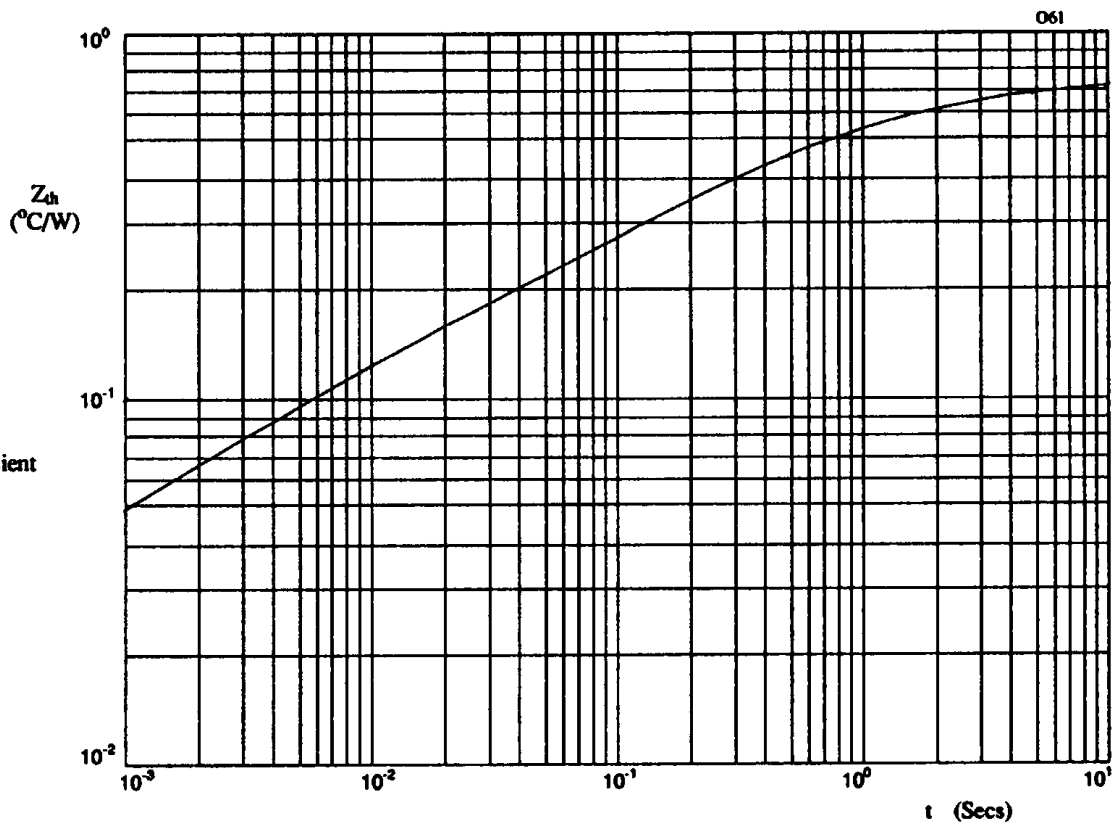
<sup>1</sup> Measured on discrete devices prior to assembly

Figure 1. Typical transient thermal impedance characteristic.

January 29, 1998

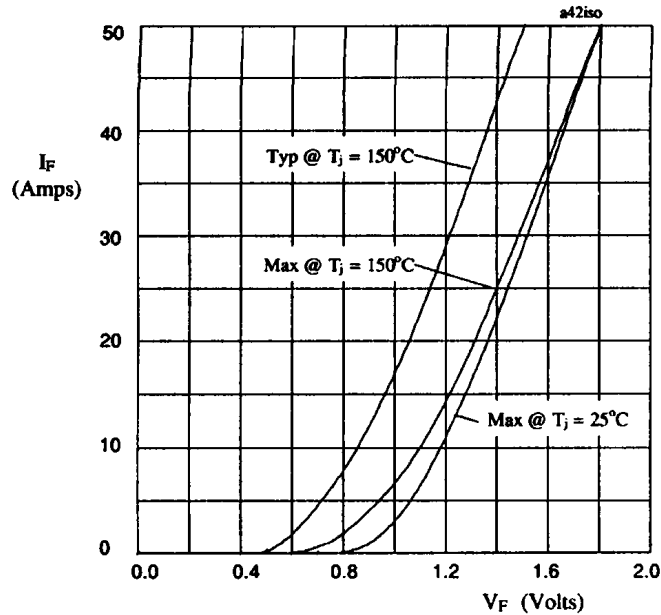


Figure 2. Forward voltage drop per leg as a function of forward current for SET121203 & SET121212.

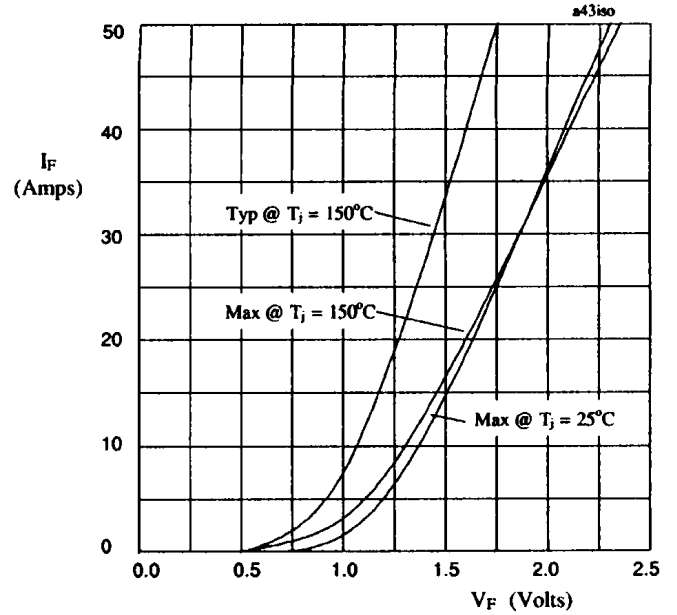


Figure 3. Forward voltage drop per leg as a function of forward current for SET121204.

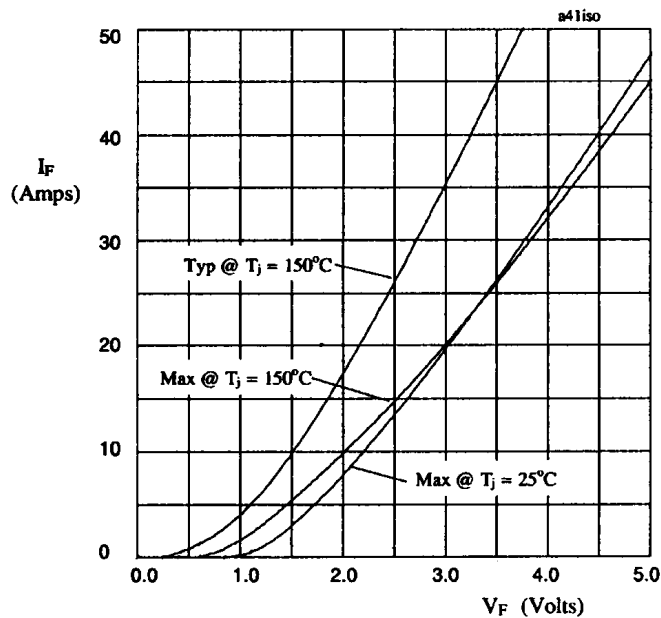


Figure 4. Forward voltage drop per leg as a function of forward current for SET121219.

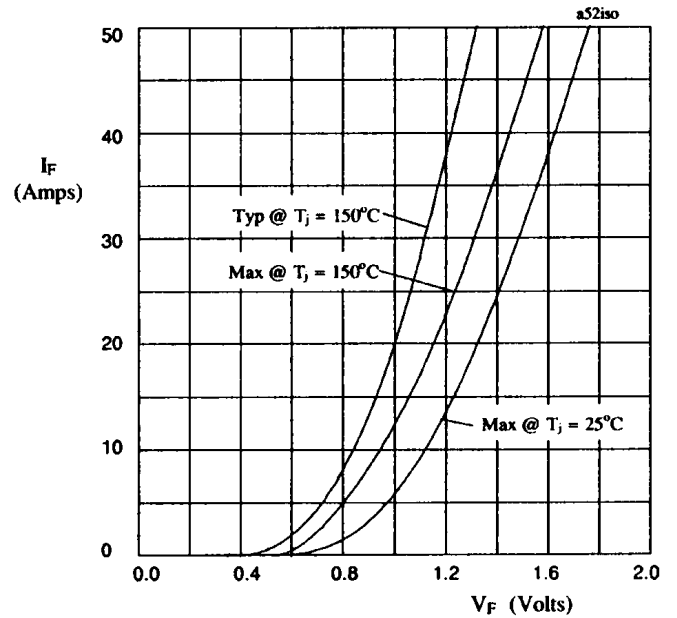


Figure 5. Forward voltage drop per leg as a function of forward current for SET121211.

January 29, 1998

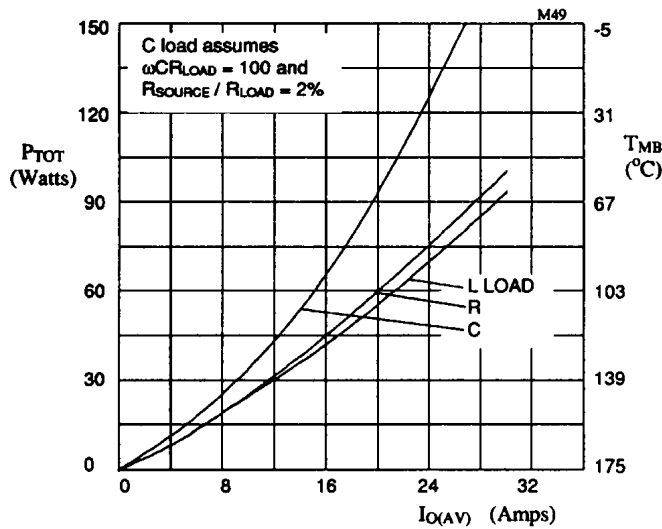


Figure 6. Forward power dissipation and maximum allowable mounting base temperature as a function of output current for sinusoidal operation, for SET121203 and SET121212.

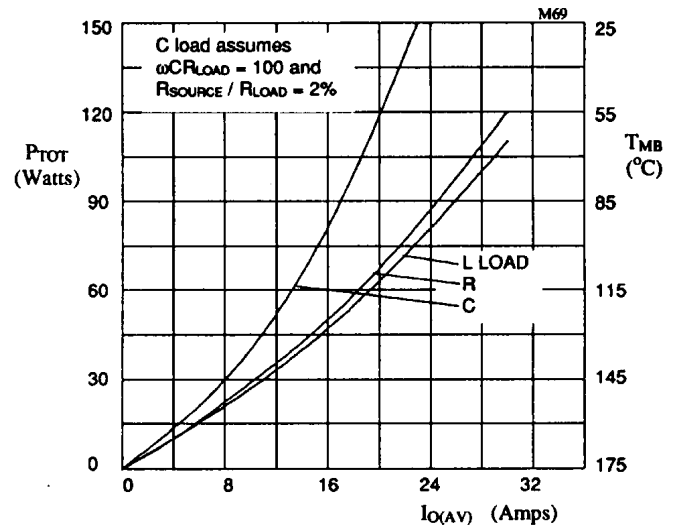


Figure 7. Forward power dissipation and maximum allowable mounting base temperature as a function of output current for sinusoidal operation, for SET121204.

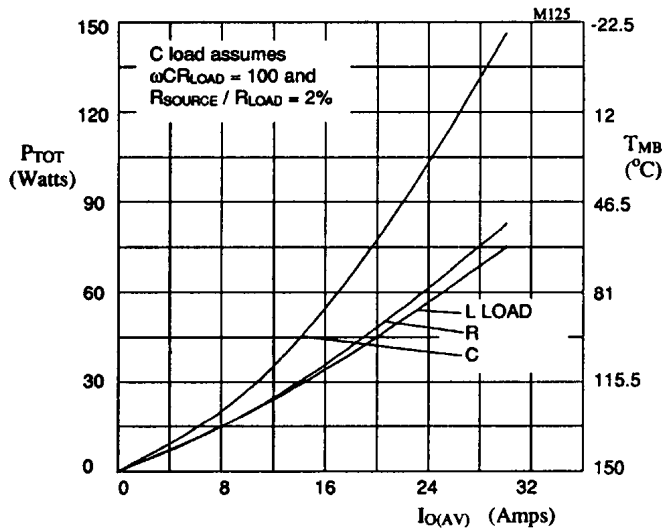


Figure 8. Forward power dissipation and maximum allowable mounting base temperature as a function of output current for sinusoidal operation, for SET121211.