

# CM and SB Series

## Single Phase Bridge Rectifiers



### Features:

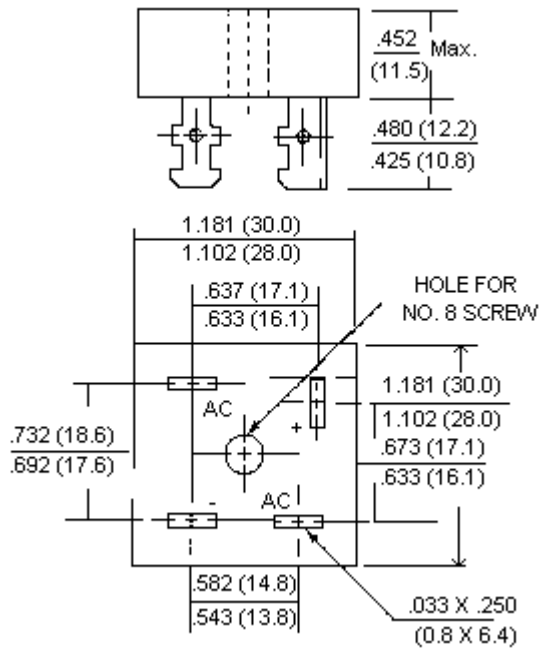
#### CM Series

- Electrically isolated metal case for maximum heat dissipation.

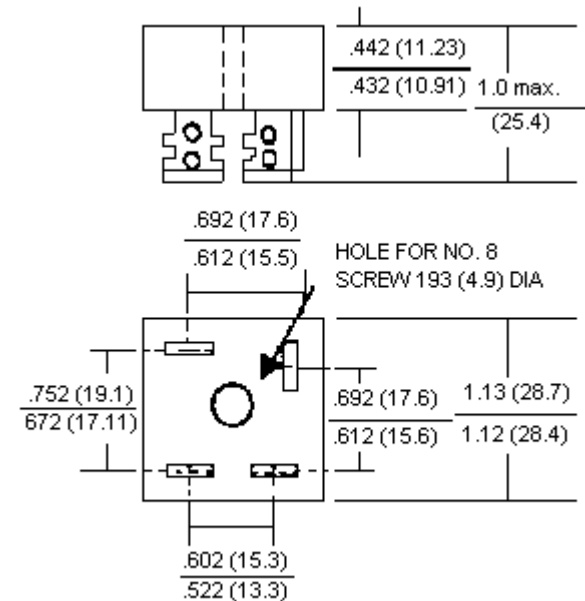
#### SB Series

- Metal case with an electrically isolated mylar.
- Rating to 1000 Volts PRV.
- Ampere surge capability.
- High efficiency.
- Mounting: Through hole for number 8 screw.
- Terminals solderables per MIL-STD-202, Method 208.
- Isolated voltage from case to lead over 2000 Volts.

### CM Series



### SB Series



Dimensions : Inches (Millimetres)

### Mechanical Data :

#### CM Series

- Terminals : Plated 0.25" Faston or wire Lead Ø40 mils
- Weight : 1 ounce, 30 grams.
- Mounting position : Any.



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### Maximum ratings and electrical characteristics:

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

| Parameter  |                     | -00   | -01                       | -02                     | -04              | -06  | -08 | -010 | Units |
|--|---------------------|-------|---------------------------|-------------------------|------------------|------|-----|------|-------|
| Maximum recurrent peak reverse voltage<br>Maximum RMS input voltage<br>Maximum DC blocking voltage   | <b>CM Series</b>    | 50    | 100                       | 200                     | 400              | 600  | 800 | 1000 | V     |
|  |                     | 35    | 70                        | 140                     | 280              | 420  | 500 | 800  |       |
|  |                     | 50    | 100                       | 200                     | 400              | 600  | 800 | 1000 |       |
| Maximum recurrent peak reverse voltage   | <b>SB Series</b>    | -1    |                           |                         | -10              |      |     |      | V     |
|  |                     | 100   |                           |                         | 1000             |      |     |      |       |
|  |                     | 70    |                           |                         | 800              |      |     |      |       |
| Maximum average forward current* for resistive load at TC = 55°C   | CM10                |       |                           |                         | 10               |      |     | A    |       |
|  | CM15, SB15          |       |                           |                         | 15               |      |     |      |       |
|  | CM25, SB25          |       |                           |                         | 25               |      |     |      |       |
|  | CM35                |       |                           |                         | 35               |      |     |      |       |
|  | CM40                |       |                           |                         | 40               |      |     |      |       |
| Non-repetitive peak forward surge current at rated load ( <b>CM Series</b> )<br><br>Peak forward surge current single sine-wave superimposed on rated load (JEDEC method) ( <b>SB Series</b> ) | CM10                |       |                           |                         | 200              |      |     | A    |       |
|  | CM15, SB15          |       |                           |                         | 300              |      |     |      |       |
|  | CM25, SB25          |       |                           |                         | 300              |      |     |      |       |
|  | CM35                |       |                           |                         | 400              |      |     |      |       |
|  | CM40                |       |                           |                         | 500              |      |     |      |       |
| Max Forward Voltage per Bridge Element at Specified Current ( <b>CM Series</b> )<br><br>Maximum instantaneous forward voltage drop per element at specified current ( <b>SB Series</b> )       | CM10                | 5A    | 1.2                       | SB15 7.5A<br>SB25 12.5A | 1.1              | V    |     |      |       |
|  | CM15 I <sub>F</sub> | 7.5A  |                           |                         |                  |      |     |      |       |
|  | CM25                | 12.5A |                           |                         |                  |      |     |      |       |
|  | CM35                | 17.5A |                           |                         |                  |      |     |      |       |
|  | CM40                | 20A   |                           |                         |                  |      |     |      |       |
| CM50   | 25A                 |       |                           |                         |                  |      |     |      |       |
| Maximum Reverse Leakage Current at Rated DC Blocking Voltage ( <b>CM Series</b> )<br><br>Maximum reverse DC current at rated DC blocking voltage per element ( <b>SB Series</b> )              |                     |       | 10.0                      |                         |                  | μA   |     |      |       |
|  |                     |       |                           |                         |                  |      |     |      |       |
| I <sup>2</sup> t Rating for fusing (t < 8.3ms)   | CM10, CM15, CM25    | 374   |                           |                         | A <sup>2</sup> S |      |     |      |       |
|  | CM35,               | 664   |                           |                         |                  |      |     |      |       |
|  | CM40, CM50          | 750   |                           |                         |                  |      |     |      |       |
| Typical thermal resistance (Fig. 3) R <sub>θJC</sub> ( <b>CM Series</b> )<br>Typical thermal resistance R <sub>θJC</sub> ( <b>SB Series</b> )  |                     |       | 2.5                       |                         |                  | °C/W |     |      |       |
|  |                     |       | 2.0                       |                         |                  |      |     |      |       |
| Operating temperature range T <sub>J</sub><br>Storage temperature range T <sub>STG</sub> ( <b>CM Series</b> )  |                     |       | -55 to +150               |                         |                  | °C   |     |      |       |
|  |                     |       |                           |                         |                  |      |     |      |       |
| Operating and storage temperature range ( <b>SB Series</b> )   |                     |       | -50 to +125 / -50 to +150 |                         |                  | °C   |     |      |       |

### NOTES

**CM Series** \* Unit mounted on metal heat-sink.

**SB Series** Thermal resistance from junction to case



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### CM Series Ratings and Characteristics Curves

CM1000 THRU CM5000

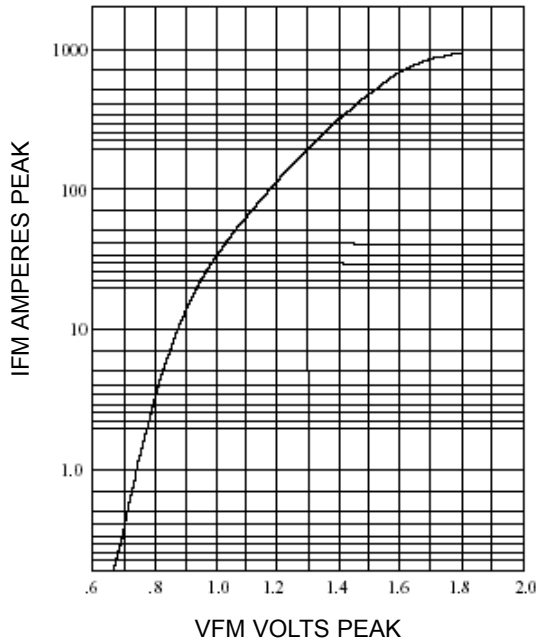


Fig. 1-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS AT  $T_j = 25^\circ\text{C}$

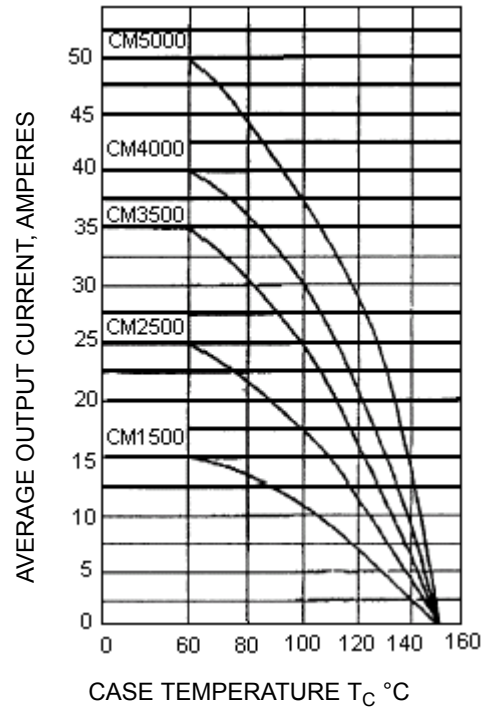


Fig. 2-OUTPUT CURRENT VS. CASE TEMPERATURE RESISTIVE OR INDUCTIVE LOAD  $T_j = 150^\circ\text{C}$

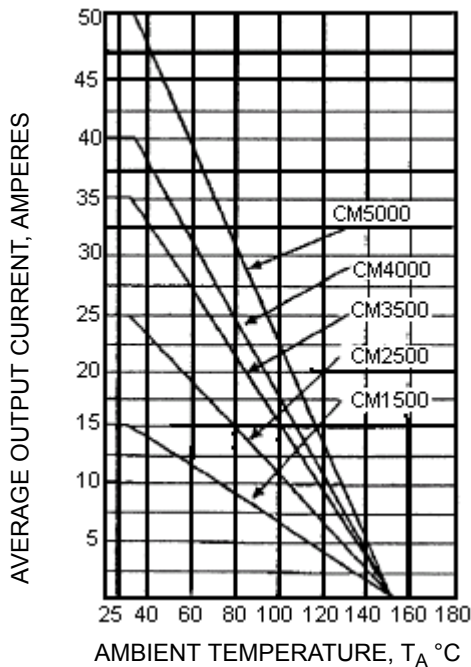


Fig. 3-OUTPUT CURRENT VS. AMBIENT TEMPERATURE RESISTIVE OR INDUCTIVE LOAD BRIDGE MOUNTED ON A 8"X8" ALUMINUM PLATE 25" THICK

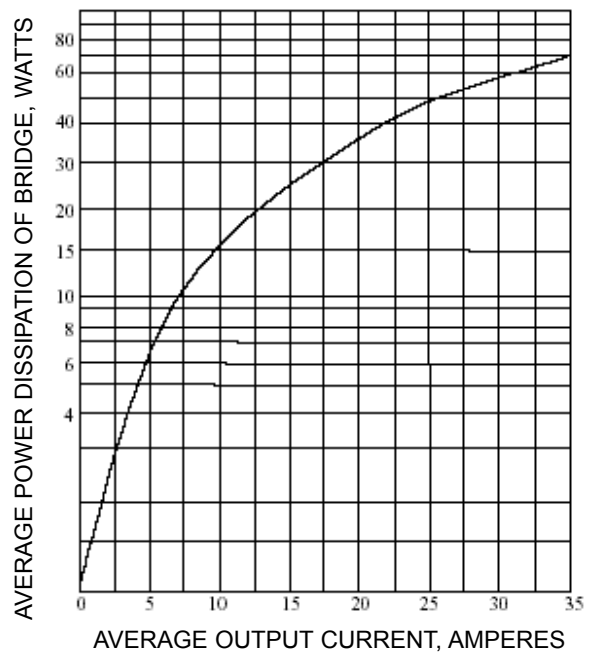


Fig. 4-POWER DISSIPATION VS. AVERAGE OUTPUT CURRENT RESISTIVE OR INDUCTIVE LOAD,  $T_j = 150^\circ\text{C}$



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### SB Series

SB1510 and SB251

### Rating and Characteristic Curves

Figure - 1 Typical Forward Current Derating Curve

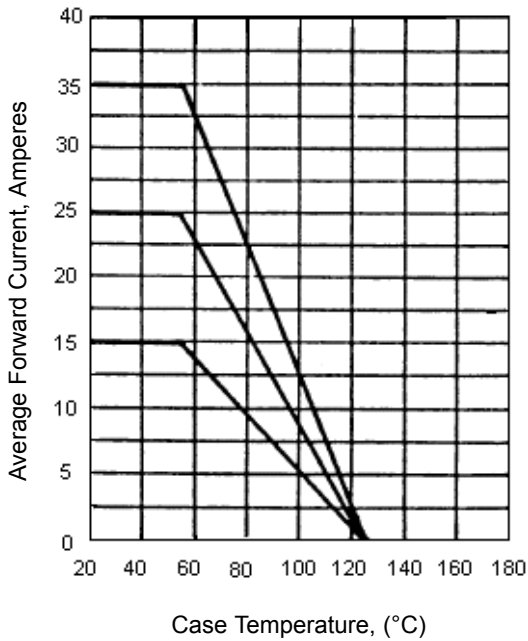


Figure - 2 Maximum Non-Repetitive Surge Current

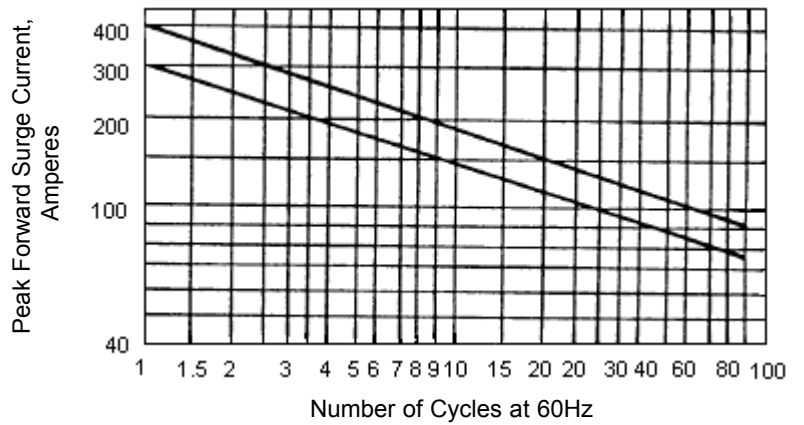


Figure - 3 Typical Reverse Characteristics

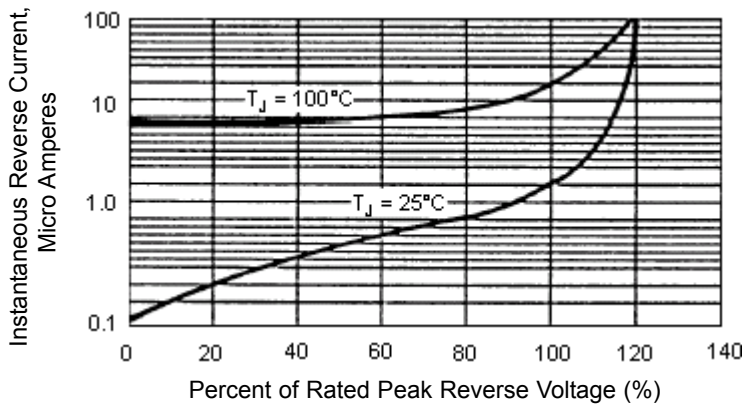
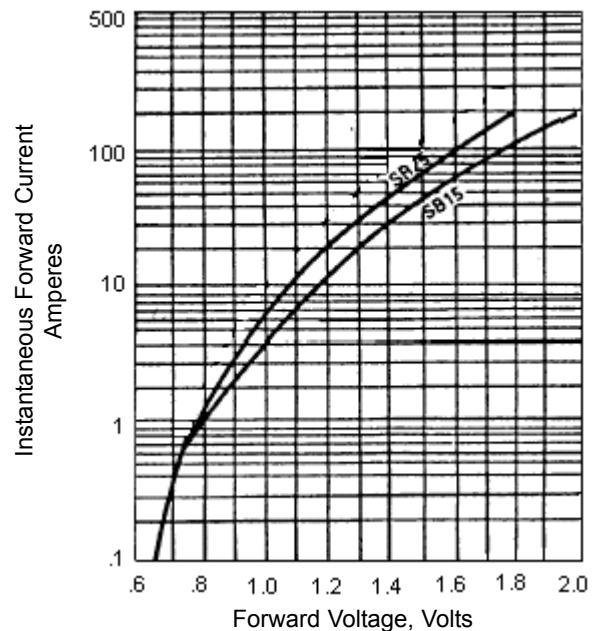


Figure - 4 Typical Forward Characteristics



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### Specifications

| Current Rating (A) | V <sub>rrm</sub> (V) | Maximum AC Input Voltage (V) | Part Number |
|--------------------|----------------------|------------------------------|-------------|
| 15                 | 50                   | 35                           | CM1500      |
|                    | 100                  | 70                           | CM1501      |
|                    | 1000                 | 800                          | CM15010     |
|                    | 200                  | 140                          | CM1502      |
|                    | 400                  | 280                          | CM1504      |
|                    | 600                  | 420                          | CM1506      |
|                    | 800                  | 500                          | CM1508      |
|                    | 1000                 | 700                          | SB1510      |
| 25                 | 50                   | 35                           | CM2500      |
|                    | 100                  | 70                           | CM2501      |
|                    | 1000                 | 800                          | CM25010     |
|                    | 200                  | 140                          | CM2502      |
|                    | 400                  | 280                          | CM2504      |
|                    | 600                  | 420                          | CM2506      |
|                    | 800                  | 500                          | CM2508      |
|                    | 100                  | 70                           | SB251       |
| 35                 | 100                  | 70                           | CM3501      |
|                    | 1000                 | 800                          | CM35010     |
|                    | 200                  | 140                          | CM3502      |
|                    | 400                  | 280                          | CM3504      |
|                    | 600                  | 500                          | CM3506      |
|                    | 800                  | 800                          | CM3508      |
| 40                 | 200                  | 140                          | CM4002      |
|                    | 600                  | 420                          | CM4006      |
|                    | 1000                 | 800                          | CM40010     |
| 50                 | 50                   | 35                           | CM5000      |
|                    | 200                  | 140                          | CM5002      |
|                    | 600                  | 420                          | CM5006      |
|                    | 1000                 | 800                          | CM50010     |



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### Notes:

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