

# Silicon Power Rectifier Assemblies

## Plate Heatsink

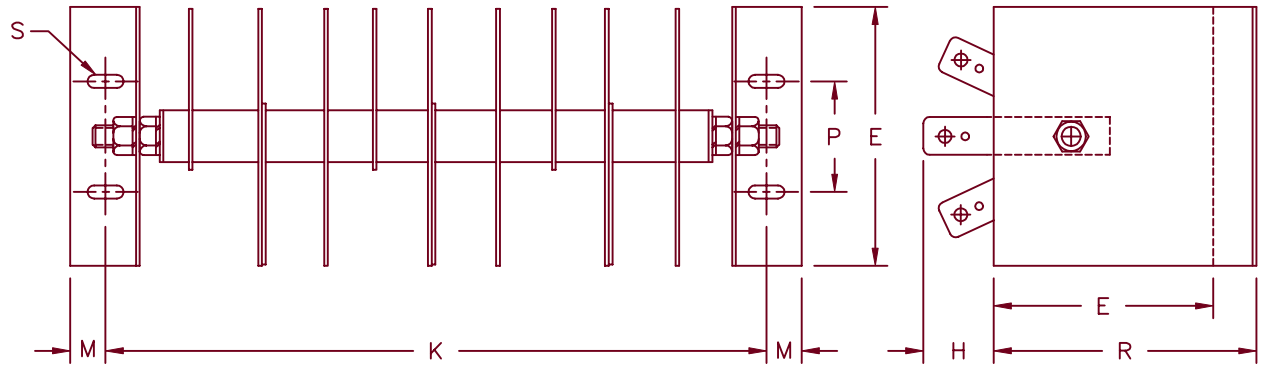
- Complete bridge with heatsinks – no assembly required
- Available in many circuit configurations
- Rated for convection or forced air cooling
- Available with bracket or stud mounting
- Designs include: DO-4, DO-5, DO-8 and DO-9 rectifiers
- Blocking voltages to 1600V

Silicon Power Rectifier Plate Heatsink Assembly Coding System

| K                                        |               | 34                   | 20                      | B                          | 1              | E                                                                                        | B                            | 1                | S |
|------------------------------------------|---------------|----------------------|-------------------------|----------------------------|----------------|------------------------------------------------------------------------------------------|------------------------------|------------------|---|
| Size of Heat Sink                        | Type of Diode | Peak Reverse Voltage | Type of Circuit         | Number of Diodes in Series | Type of Finish | Type of Mounting                                                                         | Number of Diodes in Parallel | Special Feature  |   |
| E-2"x2"<br>K-3"x3"<br>G-5"x5"<br>N-7"x7" | 21            | 20-200               | Single Phase            | Per leg                    | E-Commercial   | B-Stud with brackets or insulating board with mounting bracket<br>N-Stud with no bracket | Per leg                      | Surge Suppressor |   |
|                                          | 34            |                      | H-Half Wave             |                            |                |                                                                                          |                              |                  |   |
|                                          | 37            |                      | C-Center Tap Positive   |                            |                |                                                                                          |                              |                  |   |
|                                          | 43            | 40-400               | N-Center Tap Negative   |                            |                |                                                                                          |                              |                  |   |
|                                          | 504           |                      | D-Doubler               |                            |                |                                                                                          |                              |                  |   |
|                                          |               |                      | B-Bridge                |                            |                |                                                                                          |                              |                  |   |
|                                          |               | 60-600               | M-Open Bridge           |                            |                |                                                                                          |                              |                  |   |
|                                          |               |                      | Three Phase             |                            |                |                                                                                          |                              |                  |   |
|                                          |               |                      | Z-Bridge                |                            |                |                                                                                          |                              |                  |   |
|                                          |               | 80-800               | X-Center Tap            |                            |                |                                                                                          |                              |                  |   |
|                                          |               | 100-1000             | Y-Half Wave DC Positive |                            |                |                                                                                          |                              |                  |   |
|                                          |               | 120-1200             | Q-Half Wave DC Negative |                            |                |                                                                                          |                              |                  |   |
|                                          |               | 160-1600             | W-Double WYE            |                            |                |                                                                                          |                              |                  |   |
|                                          |               |                      | V-Open Bridge           |                            |                |                                                                                          |                              |                  |   |

# Series 21, 34 & 37

## Plate Heatsink



### Notes:

- Current ratings shown are for natural convection cooling resistive or inductive loads for single phase circuits and all loads for three phase circuits
- Use 2.0 times the listed current ratings for forced convection cooling at 1000LFM
- For single phase battery, capacitive, or motor loads: the output current shown below should be derated to 80% of the values shown.
- Assemblies with heat sink sizes other than those shown below are available on request for special applications.

### Series 21

| Circuit                | Size | Dim. | Inches        |      | Millimeters  |       |
|------------------------|------|------|---------------|------|--------------|-------|
|                        |      |      | Min.          | Max. | Min.         | Max.  |
| 1Ø Bridge              | 2x2  | K    | 5.00          | 5.25 | 127.0        | 133.3 |
| 1Ø Bridge              | 3x3  | K    | 5.87          | 6.12 | 149.0        | 155.4 |
| 3Ø Bridge              | 2x2  | K    | 7.25          | 7.50 | 184.1        | 190.5 |
| 3Ø Bridge              | 3x3  | K    | 8.12          | 8.37 | 206.2        | 212.5 |
| Same for both circuits | 2x2  | M    | 0.30          | 0.32 | 7.62         | 8.12  |
|                        |      | P    | 0.74          | 0.76 | 18.7         | 19.3  |
|                        |      | E    | 1.99          | 2.01 | 50.5         | 51.0  |
|                        |      | R    | 2.61          | 2.63 | 66.2         | 66.8  |
|                        |      | H    | 0.86          | 0.88 | 21.8         | 22.3  |
|                        |      | S    | 0.56x.28 Nom. |      | 14x7.1 Nom.  |       |
| Same for both circuits | 3x3  | M    | 0.36          | 0.38 | 9.14         | 9.65  |
|                        |      | P    | 1.49          | 1.51 | 37.8         | 38.3  |
|                        |      | E    | 2.99          | 3.01 | 75.9         | 76.4  |
|                        |      | R    | 3.67          | 3.69 | 93.2         | 93.7  |
|                        |      | H    | 0.99          | 1.01 | 25.1         | 25.6  |
|                        |      | S    | 0.31x.18 Nom. |      | 7.9x4.7 Nom. |       |

### Series 34 & 37

| Circuit                | Size | Dim. | Inches        |      | Millimeters |       |
|------------------------|------|------|---------------|------|-------------|-------|
|                        |      |      | Min.          | Max. | Min.        | Max.  |
| 1Ø Bridge              | 3x3  | K    | 5.75          | 6.25 | 146.0       | 158.7 |
| 1Ø Bridge              | 5x5  | K    | 5.75          | 6.25 | 146.0       | 158.7 |
| 3Ø Bridge              | 3x3  | K    | 8.00          | 8.50 | 203.2       | 215.9 |
| 3Ø Bridge              | 5x5  | K    | 8.00          | 8.50 | 203.2       | 215.9 |
| Same for both circuits | 3x3  | M    | 0.36          | 0.38 | 9.14        | 9.65  |
|                        |      | P    | 1.49          | 1.51 | 37.8        | 38.3  |
|                        |      | E    | 2.99          | 3.01 | 75.9        | 76.4  |
|                        |      | R    | 3.67          | 3.69 | 93.2        | 93.7  |
|                        |      | H    | 0.99          | 1.01 | 25.1        | 25.6  |
|                        |      | S    | 0.56x.28 Nom. |      | 14x7.1 Nom. |       |
| Same for both circuits | 5x5  | M    | 0.36          | 0.38 | 9.14        | 9.65  |
|                        |      | P    | 2.49          | 2.51 | 63.2        | 63.7  |
|                        |      | E    | 4.99          | 5.01 | 126.7       | 127.2 |
|                        |      | R    | 5.99          | 6.01 | 152.1       | 152.6 |
|                        |      | H    | 1.24          | 1.26 | 31.4        | 32.0  |
|                        |      | S    | 0.56x.28 Nom. |      | 14x7.1 Nom. |       |

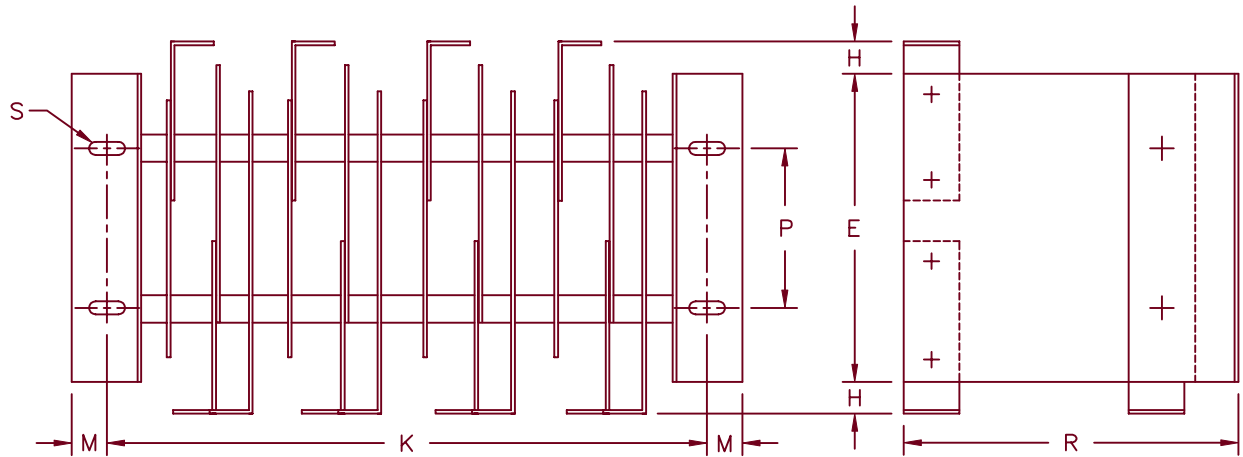
### Ratings – Average Circuit Output Current – Amperes

| DIODE SERIES | HEAT SINK SIZE (inches) | I <sub>FSM</sub> AMPS | AMBIENT TEMP. °C | 1-PHASE 1/2 WAVE | 1-PHASE CTR. TAP | 1-PHASE BRIDGE | 3-PHASE 1/2 WAVE | 3-PHASE BRIDGE | 3-PHASE CTR. TAP | 3-PHASE DBL.-WYE |
|--------------|-------------------------|-----------------------|------------------|------------------|------------------|----------------|------------------|----------------|------------------|------------------|
| 21           | 2x2x1/16                | 250                   | 40               | 7.8              | 15.6             | 15.6           | 23.4             | 23.4           | 38.1             | 46.8             |
| 21           | 2x2x1/16                | 250                   | 70               | 6.0              | 12.0             | 12.0           | 18.0             | 18.0           | 29.3             | 36.0             |
| 21           | 2x2x1/16                | 250                   | 100              | 4.3              | 8.6              | 8.6            | 12.9             | 12.9           | 21.0             | 25.8             |
| 21           | 3x3x1/16                | 250                   | 40               | 11.0             | 22.0             | 22.0           | 33.0             | 33.0           | 53.8             | 66.0             |
| 21           | 3x3x1/16                | 250                   | 70               | 8.8              | 17.6             | 17.6           | 26.4             | 26.4           | 43.0             | 52.8             |
| 21           | 3x3x1/16                | 250                   | 100              | 6.3              | 12.6             | 12.6           | 18.9             | 18.9           | 30.8             | 37.8             |

### Ratings – Average Circuit Output Current – Amperes

| DIODE SERIES | HEAT SINK SIZE (inches) | I <sub>FSM</sub> AMPS | AMBIENT TEMP. °C | 1-PHASE 1/2 WAVE | 1-PHASE CTR. TAP | 1-PHASE BRIDGE | 3-PHASE 1/2 WAVE | 3-PHASE BRIDGE | 3-PHASE CTR. TAP | 3-PHASE DBL.-WYE |
|--------------|-------------------------|-----------------------|------------------|------------------|------------------|----------------|------------------|----------------|------------------|------------------|
| 34           | 3x3x1/16                | 800                   | 40               | 18.0             | 36.0             | 36.0           | 54.0             | 54.0           | 88.0             | 108.0            |
| 34           | 3x3x1/16                | 800                   | 70               | 14.5             | 29.0             | 29.0           | 43.5             | 43.5           | 70.9             | 87.0             |
| 34           | 3x3x1/16                | 800                   | 100              | 10.5             | 21.0             | 21.0           | 31.5             | 31.5           | 51.3             | 63.0             |
| 34           | 5x5x1/16                | 800                   | 40               | 25.5             | 50.0             | 50.0           | 75.0             | 75.0           | 122.3            | 150.0            |
| 34           | 5x5x1/16                | 800                   | 70               | 20.2             | 40.4             | 40.4           | 60.6             | 60.6           | 98.8             | 121.2            |
| 34           | 5x5x1/16                | 800                   | 100              | 14.5             | 29.0             | 29.0           | 43.5             | 43.5           | 70.9             | 87.0             |
| 37           | 5x5x1/16                | 1500                  | 40               | 33.2             | 67.5             | 67.5           | 97.5             | 97.5           | 159.0            | 195.0            |
| 37           | 5x5x1/16                | 1500                  | 70               | 26.3             | 52.5             | 52.5           | 78.7             | 78.7           | 128.4            | 157.5            |
| 37           | 5x5x1/16                | 1500                  | 100              | 18.8             | 37.7             | 37.7           | 56.5             | 56.5           | 92.2             | 113.1            |

# Series 43 & 504 Plate Heatsink



## Notes:

- Current ratings shown are for natural convection cooling resistive or inductive loads for single phase circuits and all loads for three phase circuits
- Use 2.0 times the listed current ratings for forced convection cooling at 1000LFM
- For single phase battery, capacitive, or motor loads: the output current shown below should be derated to 80% of the values shown.
- Assemblies with heat sink sizes other than those shown below are available on request for special applications.

## Series 43

| Circuit                | Size | Dim. | Inches         |      | Millimeters  |       |
|------------------------|------|------|----------------|------|--------------|-------|
|                        |      |      | Min.           | Max. | Min.         | Max.  |
| 1Ø Bridge              | 5x5  | K    | 9.25           | 9.75 | 234.9        | 247.6 |
| 1Ø Bridge              | 7x7  | K    | 9.25           | 9.75 | 234.9        | 247.6 |
| 3Ø Bridge              | 5x5  | K    | 13.0           | 13.5 | 330.2        | 342.9 |
| 3Ø Bridge              | 7x7  | K    | 13.0           | 13.5 | 330.2        | 342.9 |
| Same for both circuits | 5x5  | M    | 0.36           | 0.38 | 9.14         | 9.65  |
|                        |      | P    | 2.49           | 2.51 | 63.2         | 63.7  |
|                        |      | E    | 4.99           | 5.01 | 126.7        | 127.2 |
|                        |      | R    | 5.99           | 6.01 | 152.1        | 152.6 |
|                        |      | H    | 0.98           | 1.00 | 25.1         | 25.6  |
|                        |      | S    | 0.56x0.28 Nom. |      | 14x7.1 Nom.  |       |
| Same for both circuits | 7x7  | M    | 0.36           | 0.38 | 9.14         | 9.65  |
|                        |      | P    | 3.74           | 3.76 | 94.9         | 95.5  |
|                        |      | E    | 6.99           | 7.01 | 177.5        | 178.0 |
|                        |      | R    | 7.99           | 8.01 | 202.9        | 203.4 |
|                        |      | H    | 0.98           | 1.00 | 25.1         | 25.6  |
|                        |      | S    | 0.31x0.18 Nom. |      | 7.9x4.7 Nom. |       |

## Series 504

| Circuit                | Size | Dim. | Inches         |      | Millimeters |       |
|------------------------|------|------|----------------|------|-------------|-------|
|                        |      |      | Min.           | Max. | Min.        | Max.  |
| 1Ø Bridge              | 5x5  | K    | 10.5           | 11.0 | 266.7       | 279.4 |
| 1Ø Bridge              | 7x7  | K    | 10.5           | 11.0 | 266.7       | 279.4 |
| 3Ø Bridge              | 5x5  | K    | 15.0           | 15.5 | 381.0       | 393.7 |
| 3Ø Bridge              | 7x7  | K    | 15.0           | 15.5 | 381.0       | 393.7 |
| Same for both circuits | 5x5  | M    | 0.36           | 0.38 | 9.14        | 9.65  |
|                        |      | P    | 2.49           | 2.51 | 63.2        | 63.7  |
|                        |      | E    | 4.99           | 5.01 | 126.7       | 127.2 |
|                        |      | R    | 5.99           | 6.01 | 152.1       | 153.6 |
|                        |      | H    | 0.98           | 1.00 | 24.8        | 25.4  |
|                        |      | S    | 0.56x0.28 Nom. |      | 14x7.1 Nom. |       |
| Same for both circuits | 7x7  | M    | 0.36           | 0.38 | 9.14        | 9.65  |
|                        |      | P    | 3.74           | 3.76 | 94.9        | 95.5  |
|                        |      | E    | 6.99           | 7.01 | 177.5       | 178.0 |
|                        |      | R    | 7.99           | 8.01 | 202.9       | 203.4 |
|                        |      | H    | 0.98           | 1.00 | 24.8        | 25.4  |
|                        |      | S    | 0.56x0.28 Nom. |      | 14x7.1 Nom. |       |

## Ratings – Average Circuit Output Current – Amperes

| DIODE SERIES | HEAT SINK SIZE (inches) | I <sub>FSM</sub> AMPS | AMBIENT TEMP. °C | 1–PHASE 1/2 WAVE | 1–PHASE CTR. TAP | 1–PHASE BRIDGE | 3–PHASE 1/2 WAVE | 3–PHASE BRIDGE | 3–PHASE CTR. TAP | 3–PHASE DBL.–WYE |
|--------------|-------------------------|-----------------------|------------------|------------------|------------------|----------------|------------------|----------------|------------------|------------------|
| 43           | 5x5x1/8                 | 2500                  | 40               | 42.0             | 84.0             | 84.0           | 126.0            | 126.0          | 205.4            | 252.0            |
| 43           | 5x5x1/8                 | 2500                  | 70               | 32.0             | 64.0             | 64.0           | 96.0             | 96.0           | 156.5            | 192.0            |
| 43           | 5x5x1/8                 | 2500                  | 100              | 24.0             | 48.0             | 48.0           | 72.0             | 72.0           | 117.4            | 144.0            |
| 43           | 7x7x1/8                 | 2500                  | 40               | 52.0             | 104.0            | 104.0          | 156.0            | 156.0          | 254.3            | 312.0            |
| 43           | 7x7x1/8                 | 2500                  | 70               | 40.0             | 80.0             | 80.0           | 120.0            | 120.0          | 195.6            | 240.0            |
| 43           | 7x7x1/8                 | 2500                  | 100              | 28.0             | 56.0             | 56.0           | 84.0             | 84.0           | 137.0            | 168.0            |

## Ratings – Average Circuit Output Current – Amperes

| DIODE SERIES | HEAT SINK SIZE (inches) | I <sub>FSM</sub> AMPS | AMBIENT TEMP. °C | 1–PHASE 1/2 WAVE | 1–PHASE CTR. TAP | 1–PHASE BRIDGE | 3–PHASE 1/2 WAVE | 3–PHASE BRIDGE | 3–PHASE CTR. TAP | 3–PHASE DBL.–WYE |
|--------------|-------------------------|-----------------------|------------------|------------------|------------------|----------------|------------------|----------------|------------------|------------------|
| 504          | 5x5x1/8                 | 5500                  | 40               | 62.0             | 124.0            | 124.0          | 186.0            | 186.0          | 303.0            | 372.0            |
| 504          | 5x5x1/8                 | 5500                  | 70               | 47.0             | 94.0             | 94.0           | 141.0            | 141.0          | 230.0            | 282.0            |
| 504          | 5x5x1/8                 | 5500                  | 100              | 33.0             | 66.0             | 66.0           | 99.0             | 99.0           | 161.0            | 198.0            |
| 504          | 7x7x1/4                 | 5500                  | 40               | 81.0             | 162.0            | 162.0          | 243.0            | 243.0          | 396.0            | 486.0            |
| 504          | 7x7x1/4                 | 5500                  | 70               | 63.0             | 126.0            | 126.0          | 189.0            | 189.0          | 308.0            | 378.0            |
| 504          | 7x7x1/4                 | 5500                  | 100              | 45.0             | 90.0             | 90.0           | 135.0            | 135.0          | 220.0            | 270.0            |