# 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

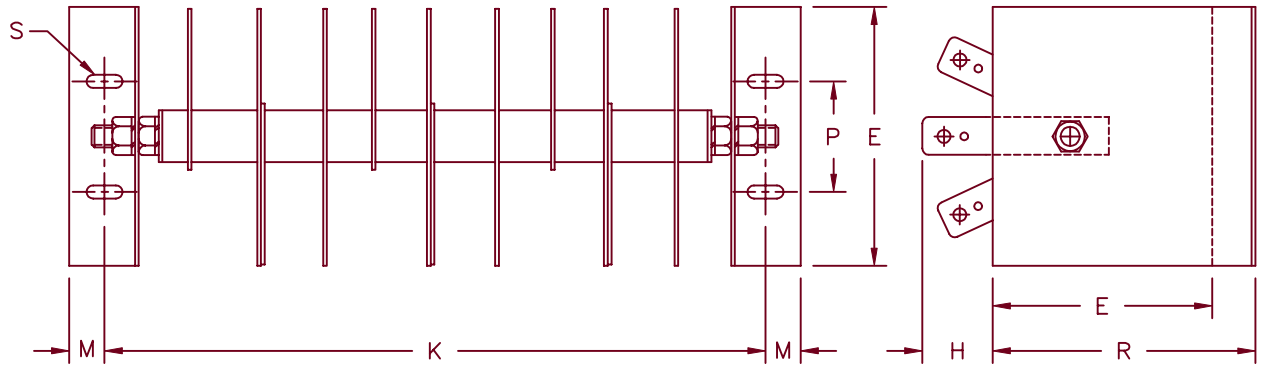
Silicon Power Rectifier Plate Heatsink Assembly Coding System

| 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<br>34<br>37<br>43<br>504 | 20–200<br>40–400<br>60–600<br>80–800<br>100–1000<br>120–1200<br>160–1600 | Single Phase<br>H–Half Wave<br>C–Center Tap Positive<br>N–Center Tap Negative<br>D–Doubler<br>B–Bridge<br>M–Open Bridge<br>Three Phase<br>Z–Bridge<br>X–Center Tap<br>Y–Half Wave DC Positive<br>Q–Half Wave DC Negative<br>W–Double WYE<br>V–Open Bridge | Per leg | E–Commercial | B–Stud with brackets or insulating board with mounting bracket<br>N–Stud with no bracket | Per leg | Surge Suppressor |

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3–20–01 Rev. 1

# Series 21, 34 & 37
# Plate Heatsink




Notes:
1. Current ratings shown are for natural convection cooling resistive or inductive loads for single phase circuits and all loads for three phase circuits
2. Use 2.0 times the listed current ratings for forced convection cooling at 1000LFM
3. For single phase battery, capacitive, or motor loads: the output current shown below should be derated to 80% of the values shown.
4. 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 |
| | 2x2 | M | 0.30 | 0.32 | 7.62 | 8.12 |
| Same | | P | 0.74 | 0.76 | 18.7 | 19.3 |
| for | | E | 1.99 | 2.01 | 50.5 | 51.0 |
| both | | R | 2.61 | 2.63 | 66.2 | 66.8 |
| circuits | | H | 0.86 | 0.88 | 21.8 | 22.3 |
| | | S | 0.56x.28 Nom. | | 14x7.1 Nom. | |
| | 3x3 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 1.49 | 1.51 | 37.8 | 38.3 |
| for | | E | 2.99 | 3.01 | 75.9 | 76.4 |
| both | | R | 3.67 | 3.69 | 93.2 | 93.7 |
| circuits | | 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 |
| | 3x3 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 1.49 | 1.51 | 37.8 | 38.3 |
| for | | E | 2.99 | 3.01 | 75.9 | 76.4 |
| both | | R | 3.67 | 3.69 | 93.2 | 93.7 |
| circuits | | H | 0.99 | 1.01 | 25.1 | 25.6 |
| | | S | 0.56x.28 Nom. | | 14x7.1 Nom. | |
| | 5x5 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 2.49 | 2.51 | 63.2 | 63.7 |
| for | | E | 4.99 | 5.01 | 126.7 | 127.2 |
| both | | R | 5.99 | 6.01 | 152.1 | 152.6 |
| circuits | | H | 1.24 | 1.26 | 31.4 | 32.0 |
| | | S | 0.56x.28 Nom. | | 14x7.1 Nom. | |

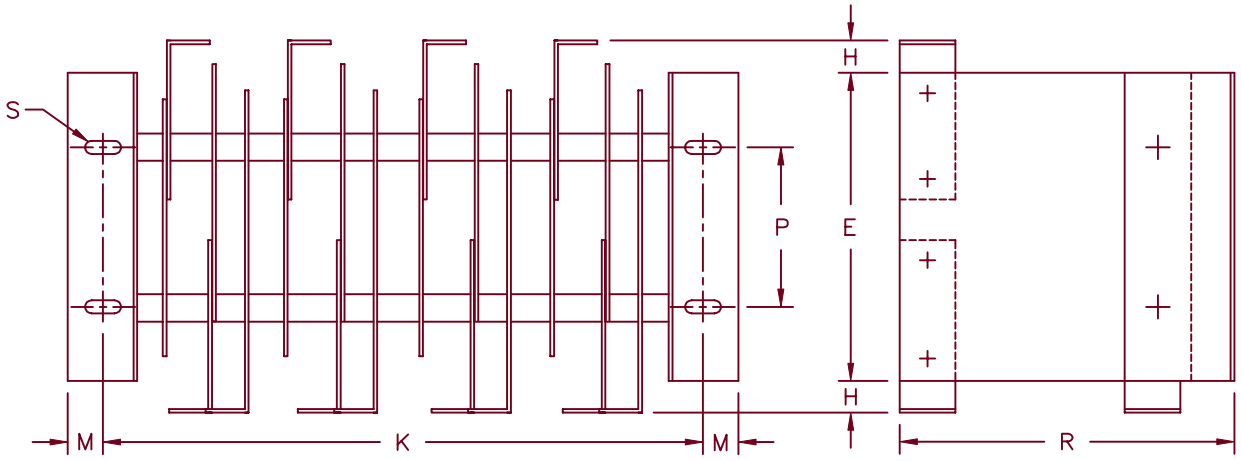
Ratings – Average Circuit Output Current – Amperes

| DIODE SERIES | HEAT SINK SIZE (inches) | $I_{FSM}$ 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) | $I_{FSM}$ 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:

1. Current ratings shown are for natural convection cooling resistive or inductive loads for single phase circuits and all loads for three phase circuits
2. Use 2.0 times the listed current ratings for forced convection cooling at 1000LFM
3. For single phase battery, capacitive, or motor loads: the output current shown below should be derated to 80% of the values shown.
4. 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 |
| | 5x5 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 2.49 | 2.51 | 63.2 | 63.7 |
| for | | E | 4.99 | 5.01 | 126.7 | 127.2 |
| both | | R | 5.99 | 6.01 | 152.1 | 152.6 |
| circuits | | H | 0.98 | 1.00 | 25.1 | 25.6 |
| | | S | 0.56x0.28 Nom. | | 14x7.1 Nom. | |
| | 7x7 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 3.74 | 3.76 | 94.9 | 95.5 |
| for | | E | 6.99 | 7.01 | 177.5 | 178.0 |
| both | | R | 7.99 | 8.01 | 202.9 | 203.4 |
| circuits | | 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 |
| | 5x5 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 2.49 | 2.51 | 63.2 | 63.7 |
| for | | E | 4.99 | 5.01 | 126.7 | 127.2 |
| both | | R | 5.99 | 6.01 | 152.1 | 153.6 |
| circuits | | H | 0.98 | 1.00 | 24.8 | 25.4 |
| | | S | 0.56x0.28 Nom. | | 14x7.1 Nom. | |
| | 7x7 | M | 0.36 | 0.38 | 9.14 | 9.65 |
| Same | | P | 3.74 | 3.76 | 94.9 | 95.5 |
| for | | E | 6.99 | 7.01 | 177.5 | 178.0 |
| both | | R | 7.99 | 8.01 | 202.9 | 203.4 |
| circuits | | 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) | $I_{FSM}$ 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) | $I_{FSM}$ 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 |

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