

# Short Form Catalog v6.2 PowerAmp Design



PowerAmp Design specializes in high power operational amplifiers for industrial applications. With a new concept for component amplifiers, these hybrid circuit designs feature surface mount component construction on an insulated metal substrate. Integrated heat sink and fan provide optimum cooling. Our new approach decreases weight and system complexity while increasing power density.






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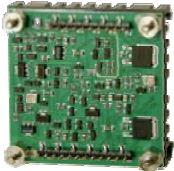









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## Power Operational Amplifiers

| Model   | V <sub>RANGE</sub> (V)<br>V <sub>TOTAL</sub> (V) | I <sub>C</sub> (A) | I <sub>PK</sub> (A) | P <sub>OUT</sub> (W) | P <sub>DISS</sub> (W) | P <sub>BW</sub><br>V <sub>P-P</sub><br>[@kHz] | SR<br>V/μS | Features   | Accessory Modules                                | Evaluation Kit*   |
|---|--|--------------------|---------------------|----------------------|-----------------------|---|------------|--|--|---|
| <br><a href="#">PAD20</a>    | ±15 - ±75<br>30 - 150                            | 5                  | 7                   | 80                   | 40                    | 130 [10]                                      | 5          | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> <li>• 40mm square footprint</li> </ul> | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL20</a> |
| <br><a href="#">PAD38</a>    | ±15 - ±100<br>30 - 200                           | 10                 | 25                  | 250                  | 125                   | 180 [33]                                      | 10         | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• Programmable current limit</li> </ul>  | NA   | NA  |
| <br><a href="#">PAD39</a>  | ±15 - ±50<br>30 - 100                            | 10                 | 25                  | 200                  | 125                   | 80 [80]                                       | 10         | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• Programmable current limit</li> </ul>  | NA   | NA  |
| <br><a href="#">PAD108</a> | ±15 - ±100<br>30 - 200                           | 10                 | 12                  | 200                  | 100                   | 180<br>[300]                                  | 170        | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• Programmable current limit</li> </ul>  | NA   | NA  |











| Model   | V <sub>RANGE</sub> (V)<br>V <sub>TOTAL</sub> (V) | I <sub>C</sub> (A) | I <sub>PK</sub> (A) | P <sub>OUT</sub> (W) | P <sub>DISS</sub> (W) | P <sub>BW</sub><br>V <sub>P-P</sub> [ $\mu$ kHz] | SR V/ $\mu$ S | Features  | Accessory Modules                                | Evaluation Kit*  |
|---|--|--------------------|---------------------|----------------------|-----------------------|--|---------------|---|--|--|
| <br><a href="#">PAD112</a>   | $\pm 15 - \pm 75$<br>30 - 150                    | 5                  | 7                   | 100                  | 50                    | 130 [30]   | 14            | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> </ul>   | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL112</a>   |
| <br><a href="#">PAD113</a>   | $\pm 15 - \pm 250$<br>30 - 500                   | 1.5                | 3                   | 96                   | 29                    | 480 [15]   | 40            | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> </ul>   | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL112</a>   |
| <br><a href="#">PAD115</a>   | $\pm 10 - \pm 150$<br>20 - 300                   | 20                 | 30                  | 400                  | 165                   | 280 [7]  | 8             | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> </ul>   | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL118</a>   |
| <br><a href="#">PAD117A</a> | $\pm 5 - \pm 50$<br>10 - 100                     | 15                 | 20                  | 250                  | 100                   | 90 [23]  | 8             | <ul style="list-style-type: none"> <li>• RRIO (rail to rail input/output)</li> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> </ul> | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL117</a>  |
| <br><a href="#">PAD118</a> | $\pm 10 - \pm 50$<br>20 - 100                    | 30                 | 40                  | 400                  | 165                   | 90 [20]  | 8             | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> </ul>   | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL118</a> |










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| Model   | V <sub>RANGE</sub> (V)<br>V <sub>TOTAL</sub> (V) | I <sub>C</sub> (A) | I <sub>PK</sub> (A) | P <sub>OUT</sub> (W) | P <sub>DISS</sub> (W) | P <sub>BW</sub><br>V <sub>P-P</sub><br>[@kHz] | SR<br>V/μS | Features   | Accessory<br>Modules   | Evaluation Kit*  |
|---|--|--------------------|---------------------|----------------------|-----------------------|---|------------|--|--|--|
| <br><a href="#">PAD119</a>   | ±10 - ±100<br>20 - 200                           | 20                 | 30                  | 400                  | 165                   | 90 [20]                                       | 8          | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> </ul>  | <a href="#">PAD125</a><br><a href="#">PAD131</a>                           | <br><a href="#">EVAL118</a>   |
| <br><a href="#">PAD126</a>   | ±20 - ±250<br>40 - 500                           | 10                 | 12                  | 450                  | 150                   | 480 [25]                                      | 50         | <ul style="list-style-type: none"> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> </ul>  | <a href="#">PAD125</a><br><a href="#">PAD131</a>                           | <br><a href="#">EVAL126</a>   |
| <br><a href="#">PAD127</a>   | ±5 - ±50<br>10 - 100                             | 30                 | 40                  | 450                  | 225                   | 90 [10]                                       | 8          | <ul style="list-style-type: none"> <li>• RRIO (rail to rail input/output)</li> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> </ul>              | <a href="#">PAD125</a><br><a href="#">PAD131</a>                           | <br><a href="#">EVAL127</a>   |
| <br><a href="#">PAD128</a>  | ±10 - ±50<br>10 - 100                            | 20                 | 30                  | 400                  | 140                   | 90 [20]                                       | 16         | <ul style="list-style-type: none"> <li>• RRIO w/PAD130</li> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> <li>• Low distortion</li> </ul>       | <a href="#">PAD125</a><br><a href="#">PAD130</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL129</a> |
| <br><a href="#">PAD129</a> | ±10 - ±100<br>20 - 200                           | 15                 | 20                  | 400                  | 140                   | 90 [20]                                       | 37         | <ul style="list-style-type: none"> <li>• RRIO w/PAD132</li> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> <li>• High power bandwidth</li> </ul> | <a href="#">PAD125</a><br><a href="#">PAD131</a><br><a href="#">PAD132</a> | <br><a href="#">EVAL129</a> |

| Model   | V <sub>RANGE</sub> (V)<br>V <sub>TOTAL</sub> (V) | I <sub>C</sub> (A) | I <sub>PK</sub> (A) | P <sub>OUT</sub> (W) | P <sub>DISS</sub> (W) | P <sub>BW</sub><br>V <sub>P-P</sub><br>[@kHz] | SR<br>V/μS | Features  | Accessory Modules                                | Evaluation Kit*   |
|---|--|--------------------|---------------------|----------------------|-----------------------|---|------------|---|--|---|
| <br><a href="#">PAD135</a>   | ±15 - ±100<br>30 - 200                           | 5                  | 10                  | 80                   | 40                    | 180<br>[350]                                  | 200        | <ul style="list-style-type: none"> <li>• Low cost</li> <li>• Small size 40mm square</li> <li>• High voltage- 200 volts</li> <li>• 350kHz power bandwidth</li> <li>• 200V/μS slew rate</li> <li>• 40mm square footprint</li> </ul>   | NA   | <br><a href="#">EVAL135</a>  |
| <br><a href="#">PAD137</a>   | ±5 - ±50<br>10 - 100                             | 20                 | 30                  | 400                  | 140                   | 90 [23]                                       | 8          | <ul style="list-style-type: none"> <li>• RRIO (rail to rail input/output)</li> <li>• Temperature reporting</li> <li>• Over-temp shutdown</li> <li>• 4-wire current limit</li> </ul>   | <a href="#">PAD125</a><br><a href="#">PAD131</a> | <br><a href="#">EVAL137</a>  |
| <br><a href="#">PAD138</a>   | ±15 - ±100<br>30 - 200                           | 10                 | 12                  | 240                  | 75                    | 180 [30]                                      | 30         | <ul style="list-style-type: none"> <li>• Low cost</li> <li>• Small size 40mm square</li> <li>• High voltage- 200 volts</li> <li>• 30kHz power bandwidth</li> <li>• 30V/μS slew rate</li> </ul>                                      | NA   | <br><a href="#">EVAL138</a>  |
| <br><a href="#">PAD141</a>  | ±6 - ±50<br>12 - 100                             | 10                 | 15                  | 240                  | 75                    | 90 [28]                                       | 7          | <ul style="list-style-type: none"> <li>• Low cost</li> <li>• Small size 40mm square</li> <li>• Single supply operation</li> <li>• High voltage- 100 volts</li> <li>• 28kHz power bandwidth</li> <li>• 7V/μS slew rate</li> </ul>    | NA   | <br><a href="#">EVAL138</a> |
| <br><a href="#">PAD148</a> | ±15 - ±100<br>30 - 200                           | 10                 | 12                  | 240                  | 125                   | 180<br>[150]                                  | 100        | <ul style="list-style-type: none"> <li>• Low cost</li> <li>• High voltage- 200 volts</li> <li>• 100kHz power bandwidth</li> <li>• Temperature Reporting</li> <li>• Short circuit protection</li> <li>• External shutdown</li> </ul> | NA   | NA  |



| Model   | V <sub>RANGE</sub> (V)<br>V <sub>TOTAL</sub> (V) | I <sub>C</sub> (A) | I <sub>PK</sub> (A) | P <sub>OUT</sub> (W) | P <sub>DISS</sub> (W) | P <sub>BW</sub><br>V <sub>P-P</sub><br>[@kHz] | SR<br>V/μS | Features  | Accessory Modules | Evaluation Kit*  |
|---|--|--------------------|---------------------|----------------------|-----------------------|---|------------|---|-------------------|--|
| <br><a href="#">PAD183</a>   | ±15 - ±175<br>30 - 350                           | 1.5                | 2.0                 | 70                   | 35                    | 330<br>[100]                                  | 100        | <ul style="list-style-type: none"> <li>• Low cost</li> <li>• Small size 40mm square</li> <li>• High voltage- 350 volts</li> <li>• 100kHz power bandwidth</li> <li>• 100V/μS slew rate</li> <li>• 40mm square footprint</li> </ul> | NA                | <br><a href="#">EVAL183</a>   |
| <br><a href="#">PAD188</a>   | ±50 - ±525<br>100 - 1050                         | 0.1                | 0.2                 | 10                   | 5                     | 960 [1]                                       | 3          | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• Programmable current limit</li> <li>• Conformal coated</li> <li>• 1mA quiescent current</li> </ul>  | NA                | <br><a href="#">EVAL188</a>   |
| <br><a href="#">PAD189A</a>  | ±50 - ±525<br>100 - 1050                         | 1.5                | 1.5                 | 180                  | 60                    | 960 [10]                                      | 30         | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• 4-wire current limit</li> <li>• Conformal coated</li> </ul>   | NA                | <br><a href="#">EVAL189</a>   |
| <br><a href="#">PAD195</a>  | ±50 - ±520<br>100 - 1040                         | 0.1                | 0.2                 | 40                   | 20                    | 1000 [2]                                      | 20         | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• Programmable current limit</li> <li>• Conformal coated</li> <li>• 1mA quiescent current</li> </ul>  | NA                | <br><a href="#">EVAL195</a> |
| <br><a href="#">PAD196</a> | ±50 - ±1025<br>100 - 2050                        | 0.05               | 0.1                 | 24                   | 12                    | 2000 [1]                                      | 5          | <ul style="list-style-type: none"> <li>• External compensation</li> <li>• Programmable current limit</li> <li>• Conformal coated</li> <li>• 1mA quiescent current</li> </ul>  | NA                | <br><a href="#">EVAL196</a> |

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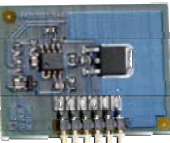
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|   |                                 |   |     |     |    |         |    |   |    |  |
|---|---------------------------------|---|-----|-----|----|---------|----|---|----|--|
| <br><a href="#">PAD541</a> | $\pm 10 - \pm 50$<br>$20 - 100$ | 5 | 7.0 | 100 | 50 | 80 [57] | 14 | <ul style="list-style-type: none"> <li>• Low cost SIP design</li> <li>• 0.63" height</li> <li>• High voltage- 100 volts</li> <li>• External compensation</li> <li>• Programmable current limit</li> </ul> | NA | <br><a href="#">EVAL541</a> |
|---|---------------------------------|---|-----|-----|----|---------|----|---|----|--|

Accessory modules provide additional optional features for the power op amp models.

**Accessory Modules**

| Model   | Function                | $V_{\text{RANGE}}$ (V)<br>$V_{\text{TOTAL}}$ (V) | OUTPUT              | Features  | Compatible Amplifiers*                  |
|---|-------------------------|--|---------------------|---|---|
| <br><a href="#">PAD125</a>   | Current Limit           | $\pm 8 - \pm 250$<br>$16 - 500$                  | 5V Logic Signals    | <ul style="list-style-type: none"> <li>• Programmable functions</li> <li>• Precision 150mV sense voltage</li> <li>• Temp stable sense voltage</li> <li>• Ground referenced outputs</li> </ul> | All except PAD135 & PAD183              |
| <br><a href="#">PAD130</a>   | Dual Boost Power Supply | $\pm 8 - \pm 50$<br>$16 - 100$                   | $\pm V_s \pm 9V$    | <ul style="list-style-type: none"> <li>• Converts PAD128 to RRIO amp</li> <li>• Makes other amp models rail to rail at inputs</li> </ul>  | <a href="#">PAD128</a>                  |
| <br><a href="#">PAD131</a> | Fan Controller          | 12-15  | 5-15V varies w/temp | <ul style="list-style-type: none"> <li>• Increases fan life</li> <li>• Reduces audible fan noise</li> </ul>   | All amplifier models with "Temp" output |

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