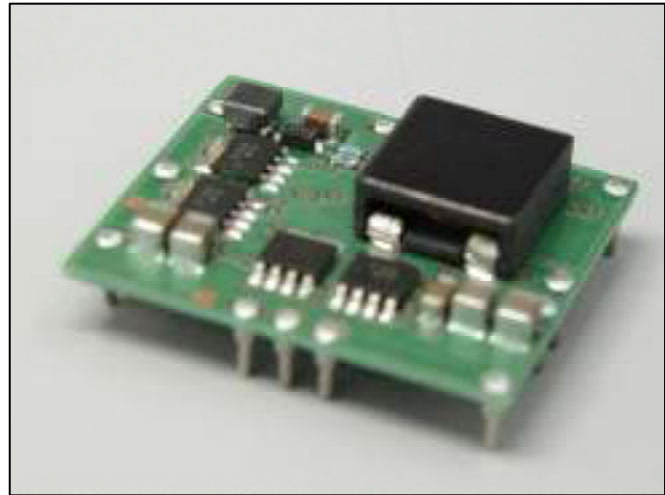


DC-DC Converter Short Form

MPDTH**030WAS/WAH (30A output POL-Alliance product)

■ Features

- Point-of-Load Alliance product
- Up to 30A output current
- Wide-Output Voltage Adjust (0.8-5.5V)
- High efficiency up to 94% TYP (@5Vin 3.3V/20Aout)
- Wide Operating Temp - 40 °C to + 85 °C
- Open frame TH or SMT termination
- Auto-Track TM Sequencing
- Margin Up/Down Controls
- Pre-Biased start-up
- Output Over-Current Protection
- Output Voltage Sense
- ON/OFF Inhibit
- Under-Voltage Lockout

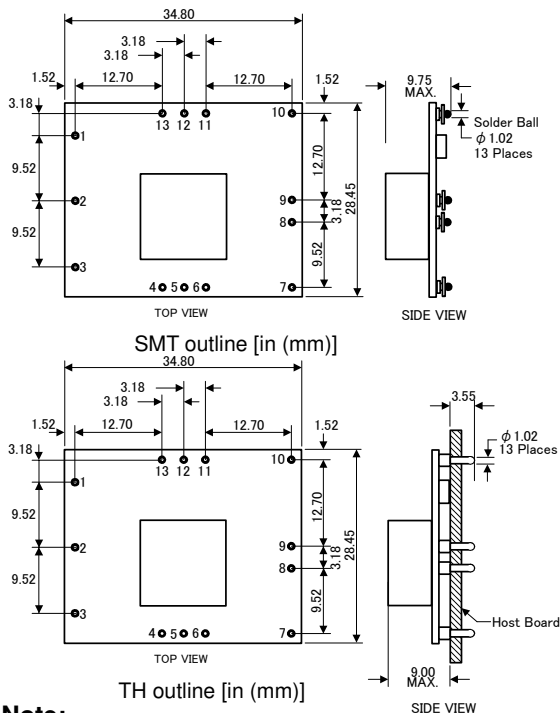


■ Ordering Information

| Input Voltage | Output Voltage | Output Current | Model Number |
|----------------|----------------|----------------|---------------------|
| 3.0V to 3.6V | 0.8V to 2.5V | 30A | MPDTH03030WA(S)/(H) |
| 4.5V to 5.5V | 0.8V to 3.6V | 30A | MPDTH05030WA(S)/(H) |
| 10.8V to 13.2V | 1.2V to 5.5V | 26A | MPDTH12030WA(S)/(H) |

OPTIONS: "WAS" -- SMT termination, "WAH" – TH termination

■ Dimensions

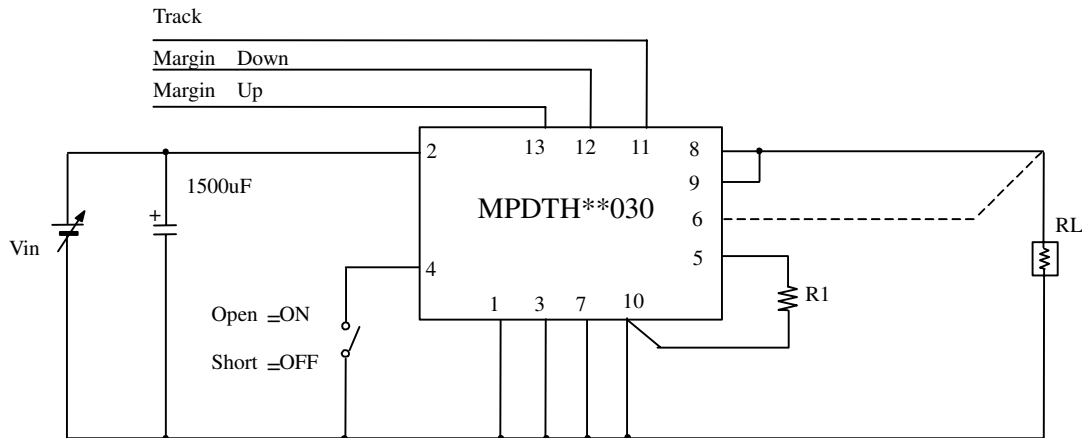


| Pin No. | Signal | Pin No. | Signal |
|---------|----------|---------|-------------|
| 1. | GND | 8. | Vout |
| 2. | Vin | 9. | Vout |
| 3. | Inhibit | 10. | GND |
| 4. | Inhibit | 11. | Track |
| 5. | VoAdjust | 12. | Margin Down |
| 6. | VoSense | 13. | Margin Up |
| 7. | GND | | |

⚠ Note:

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2. This datasheet has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

■ Standard Application



■ Output Voltage Adjustment

$$R1 = 10k \cdot \frac{0.8V}{V_{out} - 0.8V} - 2.49k \quad : \text{MPDTH03030 / 05030}$$

$$R1 = 10k \cdot \frac{0.8V}{V_{out} - 1.2V} - 1.82k \quad : \text{MPDTH12030}$$

■ General Specifications

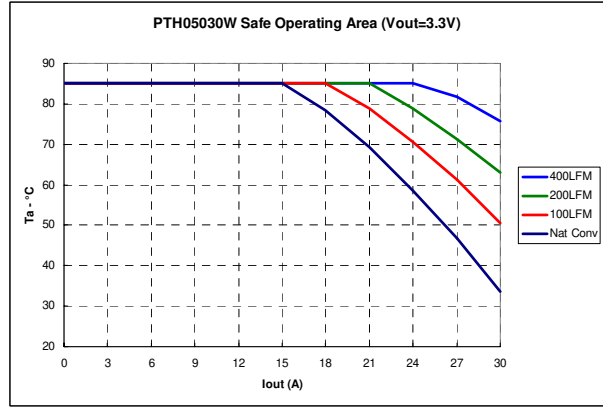
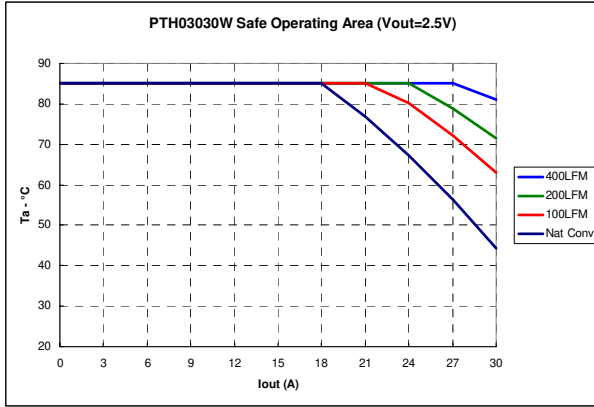
(Ta=25°C)

| Item | Symbol | Condition | Parts Number | Min. | Typ. | Max. | Unit |
|------------------------|--------|-------------------------------|--------------------------------|------|------|------|-------|
| Input voltage | Vin | | MPDTH03030 | 2.95 | 3.3 | 3.65 | V |
| | | | MPDTH05030 | 4.5 | 5.0 | 5.5 | |
| | | | MPDTH12030 | 10.8 | 12.0 | 13.2 | |
| Output voltage | Vout | Vin=2.95V to 3.65V | MPDTH03030 | 0.8 | | 2.5 | V |
| | | Vin=4.5V to 5.5V | MPDTH05030 | 0.8 | | 3.6 | |
| | | Vin=10.8V to 13.2V | MPDTH12030 | 1.2 | | 5.5 | |
| Total output variation | Regtot | Rset 1% tolerance, ±100ppm/°C | | | | ±3 | %Vo |
| Output current | Iout | | MPDTH03030, MPDTH05030 | 0 | | 30 | A |
| | | | MPDTH12030 | 0 | | 26 | |
| Ripple voltage | Vrip | | Vin=3.3V, Vout=2V, Iout=30A | | 30 | | mVp-p |
| | | | Vin=5.0V, Vout=3.3V, Iout=30A | | 40 | | |
| | | | Vin=12.0V, Vout=3.3V, Iout=26A | | 25 | | |
| Efficiency | Eff | | Vin=3.3V, Vout=2.5V, Iout=20A | | 93 | | % |
| | | | Vin=5.0V, Vout=3.3V, Iout=20A | | 94 | | |
| | | | Vin=12.0V, Vout=5.0V, Iout=18A | | 94.5 | | |

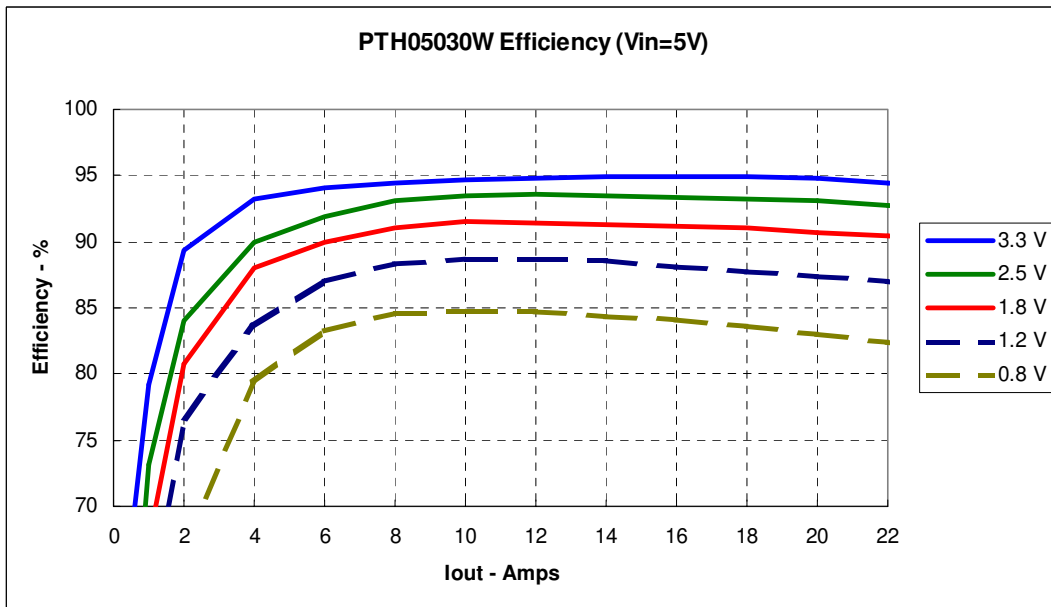
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■ Thermal Derating



■ Conversion Efficiency



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