

DC-DC Converter Short Form

MPDTH**040WAS/WAH (50A/60A output POL-Alliance product)

Features

- Point-of-Load Alliance product
- Up to 50A/60A output current
- Wide-Output Voltage Adjust (0.8-2.5V or 0.8-5.5V)
- High efficiency up to 93% or 95% TYP (@5Vin 2.5V/45Aout) or (@12Vin 3.3V/35Aout)
- Wide Operating Temp - 40 °C to + 85 °C
- Open frame TH or SMT termination
- Auto-Track™ Sequencing
- Margin Up/Down Controls
- Pre-Biased start-up
- Output Over-Current Protection
- Output Voltage Sense
- ON/OFF Inhibit
- Under-Voltage Lockout
- Safety Agency Approvals: UL/cUL 60950, EN60950, VDE

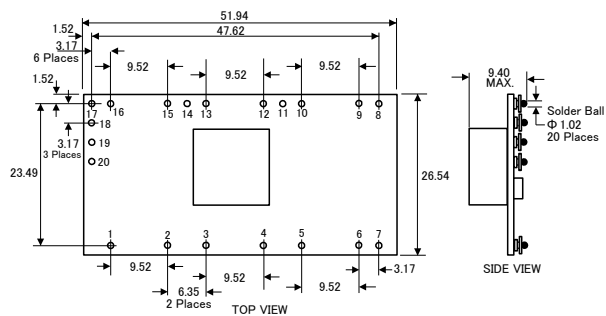


Ordering Information

| Input Voltage | Output Voltage | Output Current | Model Number |
|---------------|----------------|----------------|---------------------|
| 2.95V to 4.5V | 0.8V to 1.65V | 60A | MPDTH04040WA(S)/(H) |
| 4.5V to 5.5V | 0.8V to 2.5V | 60A | MPDTH04040WA(S)/(H) |
| 8V to 14V | 0.8V to 5.5V | 50A | MPDTH12040WA(S)/(H) |

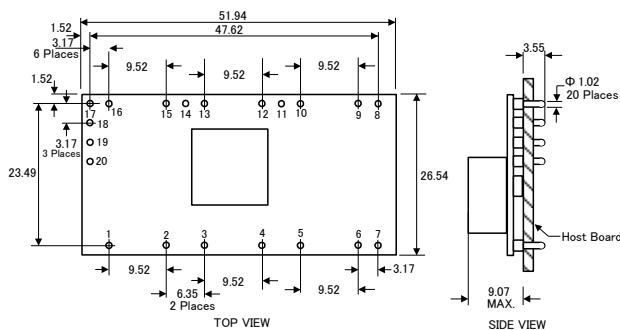
OPTIONS: "WAS" -- SMT termination, "WAH" – TH termination

Dimensions



| Pin No. | Signal | Pin No. | Signal |
|---------|----------|---------|-----------|
| 1. | GND | 11. | +Sense |
| 2. | Vin | 12. | Vout |
| 3. | GND | 13. | GND |
| 4. | Vin | 14. | -Sense |
| 5. | GND | 15. | Vout |
| 6. | Vin | 16. | GND |
| 7. | Inhibit | 17. | VoAdjust |
| 8. | UVLOprog | 18. | Track |
| 9. | Vout | 19. | Margin Up |
| 10. | GND | 20. | Margin |

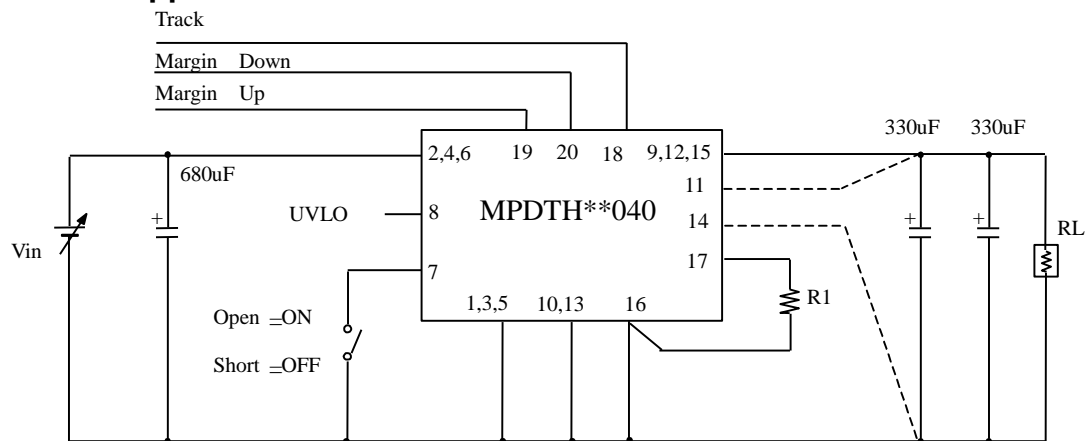
Down



Note:

1. This datasheet is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
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

$$R1 = 10k \cdot \frac{0.8V}{V_{out} - 0.8V} - 2.49k \quad : \text{MPDTH04040}$$

$$R1 = 10k \cdot \frac{0.8V}{V_{out} - 0.8V} - 1.696k \quad : \text{MPDTH12040}$$

General Specifications

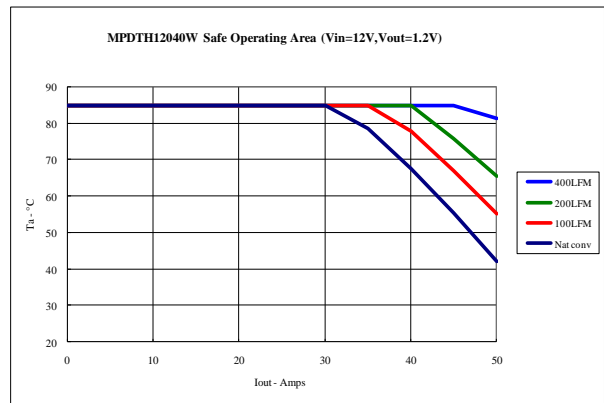
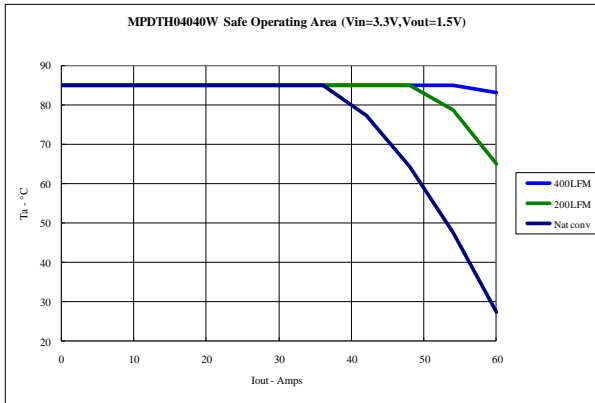
(Ta=25°C)

| Item | Symbol | Condition | Parts Number | Min. | Typ. | Max. | Unit |
|------------------------|--------|--------------------------------|--------------|------|------|------|-------|
| Input voltage | Vin | | MPDTH04040 | 2.95 | — | 5.5 | V |
| | | | MPDTH12040 | 8.0 | 12.0 | 14.0 | |
| Output voltage | Vout | Vin=2.95V to 4.5V | MPDTH04040 | 0.8 | — | 1.65 | V |
| | | Vin=4.5V to 5.5V | | 0.8 | — | 2.5 | |
| | | Vin=8.0V to 14.0V | MPDTH12040 | 0.8 | — | 5.5 | |
| Total output variation | Regtot | Rset 1% tolerance, ±100ppm/°C | | — | — | ±3 | %Vo |
| Output current | Iout | MPDTH04040 | | 0 | — | 60 | A |
| | | MPDTH12040 | | 0 | — | 50 | |
| Ripple voltage | Vrip | Vin=5.0V, Vout=2.5V, Iout=60A | | — | 15 | — | mVp-p |
| | | Vin=12.0V, Vout=3.3V, Iout=50A | | — | 15 | — | |
| Efficiency | Eff | Vin=5.0V, Vout=2.5V, Iout=45A | | — | 93 | — | % |
| | | Vin=12.0V, Vout=3.3V, Iout=35A | | — | 95 | — | |

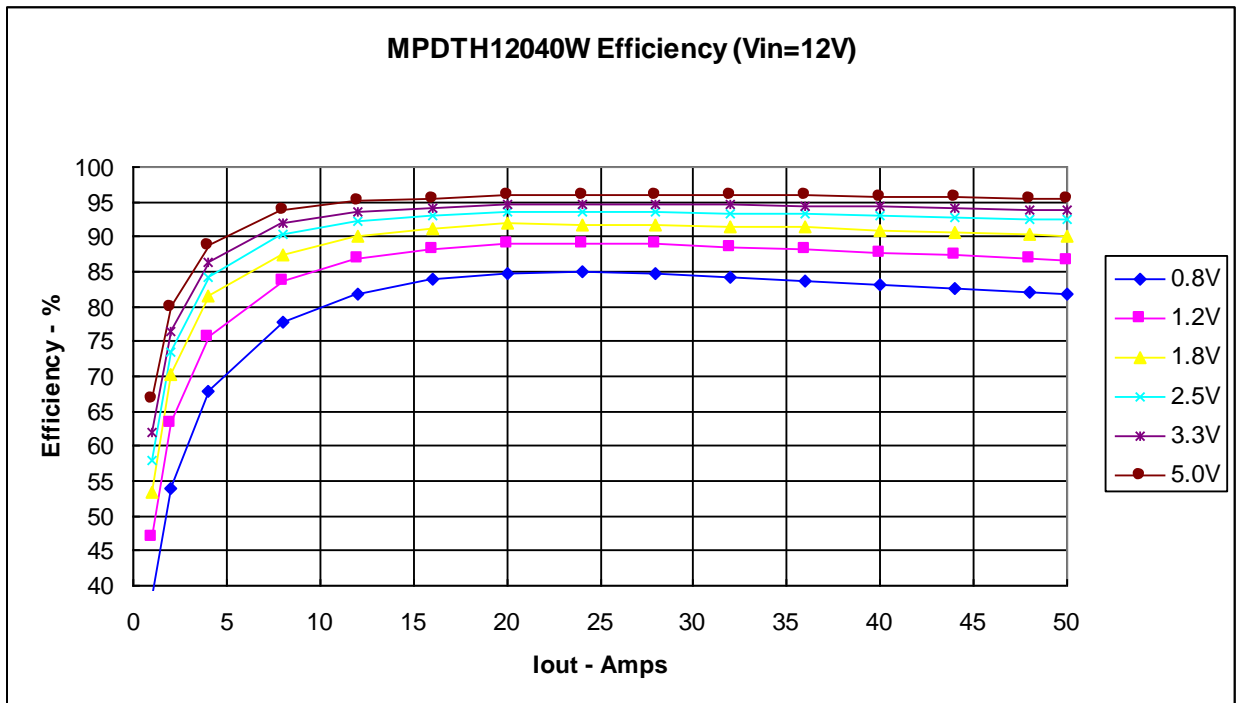
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Thermal Derating



Conversion Efficiency



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