

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

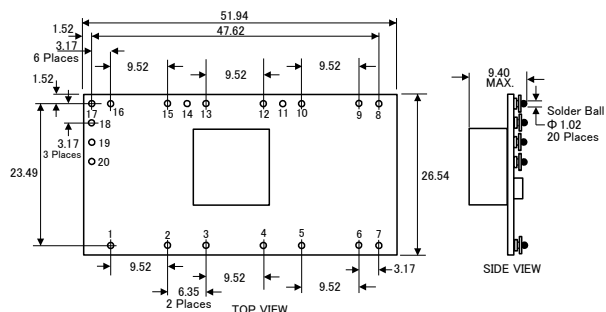


Ordering Information

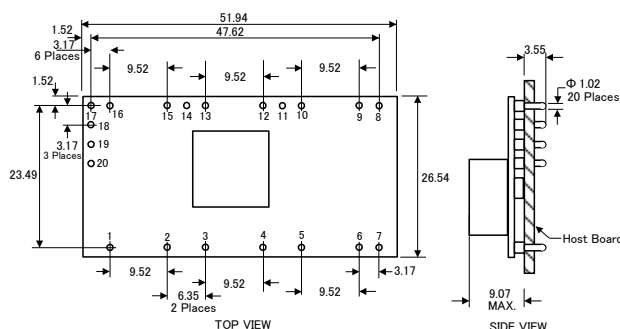
Input Voltage	Output Voltage	Output Current	Model Number
2.95V to 4.5V	0.8V to 1.65V	60A	MPDTH04040WA(S)/(H)
4.5V to 5.5V	0.8V to 2.5V	60A	MPDTH04040WA(S)/(H)
8V to 14V	0.8V to 5.5V	50A	MPDTH12040WA(S)/(H)

OPTIONS: “WAS” -- SMT termination, “WAH” – TH termination

Dimensions



SMT outline [in (mm)]



TH outline [in (mm)]

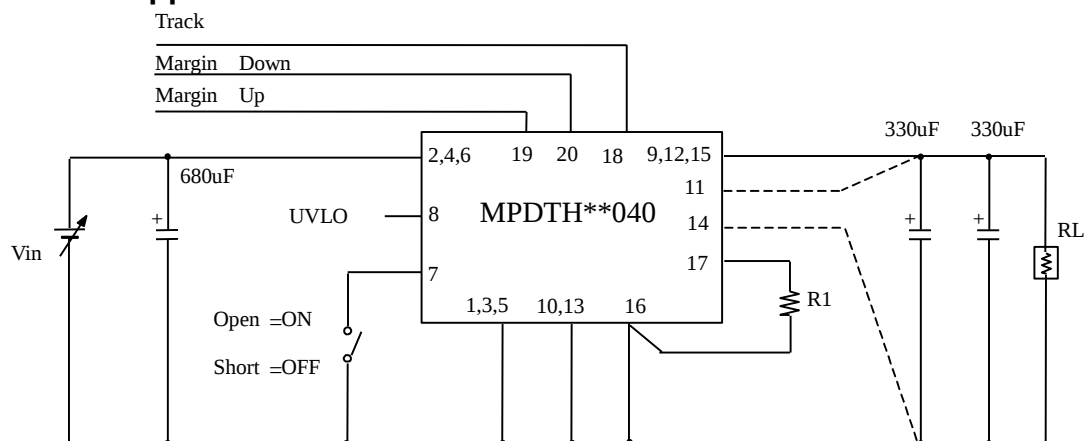
Pin No.	Signal	Pin No.	Signal
1.	GND	11.	+Sense
2.	Vin	12.	Vout
3.	GND	13.	GND
4.	Vin	14.	-Sense
5.	GND	15.	Vout
6.	Vin	16.	GND
7.	Inhibit	17.	VoAdjust
8.	UVLOprog	18.	Track
9.	Vout	19.	Margin Up
10.	GND	20.	Margin

Down

Note:

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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

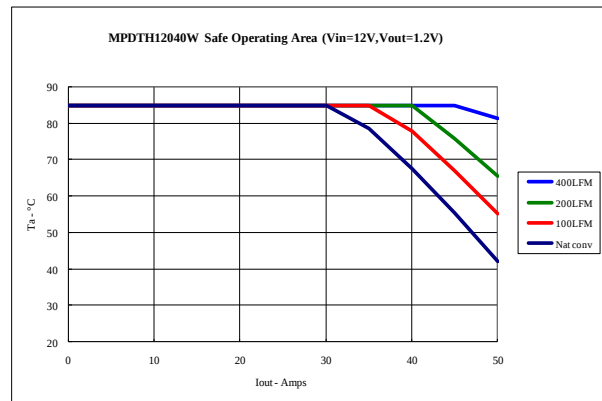
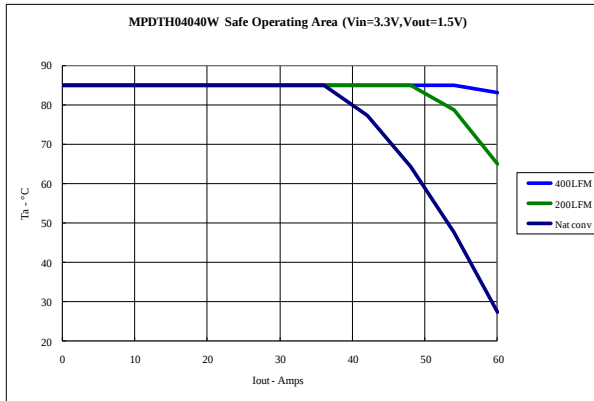
(Ta=25°C)

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=2.95Vto 4.5V	MPDTH04040	0.8	—	1.65	V
		Vin=4.5Vto 5.5V		0.8	—	2.5	
		Vin=8.0Vto14.0V	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	—	

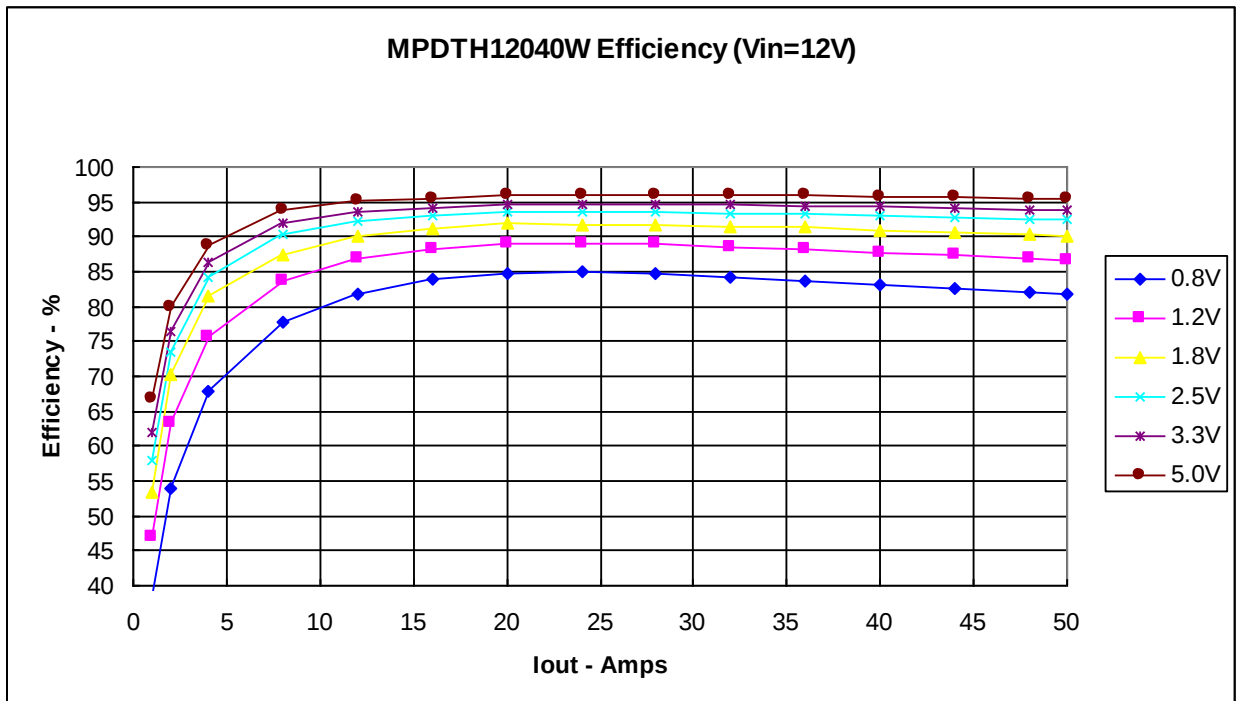
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Thermal Derating



Conversion Efficiency



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