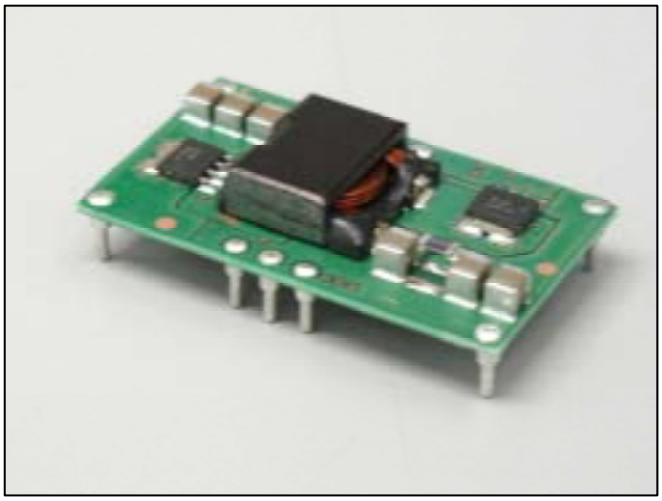
DC-DC Converter Short Form

MPDTH**020WAS/WAH (22A output POL-Alliance product)

■ Features

- Point-of-Load Alliance product
- Up to 22A output current
- Wide-Output Voltage Adjust (0.8-5.5V)
- High efficiency up to 95% TYP (@5Vin 3.3V/14Aout)
- Wide Operating Temp - 40 ºC to + 85 ºC
- 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

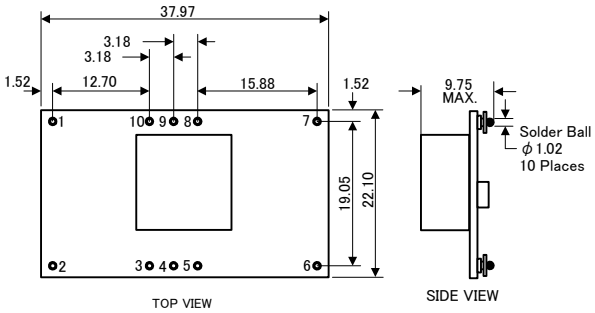


■ Ordering Information

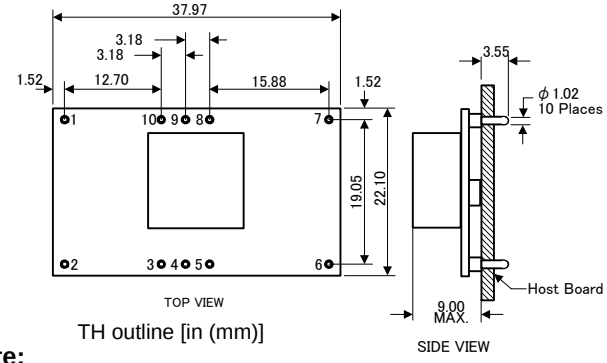
Input Voltage	Output Voltage	Output Current	Model Number
3.0V to 3.6V	0.8V to 2.5V	22A	MPDTH03020WA(S)/(H)
4.5V to 5.5V	0.8V to 3.6V	22A	MPDTH05020WA(S)/(H)
10.8V to 13.2V	1.2V to 5.5V	18A	MPDTH12020WA(S)/(H)

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

■ Dimensions



SMT outline [in (mm)]



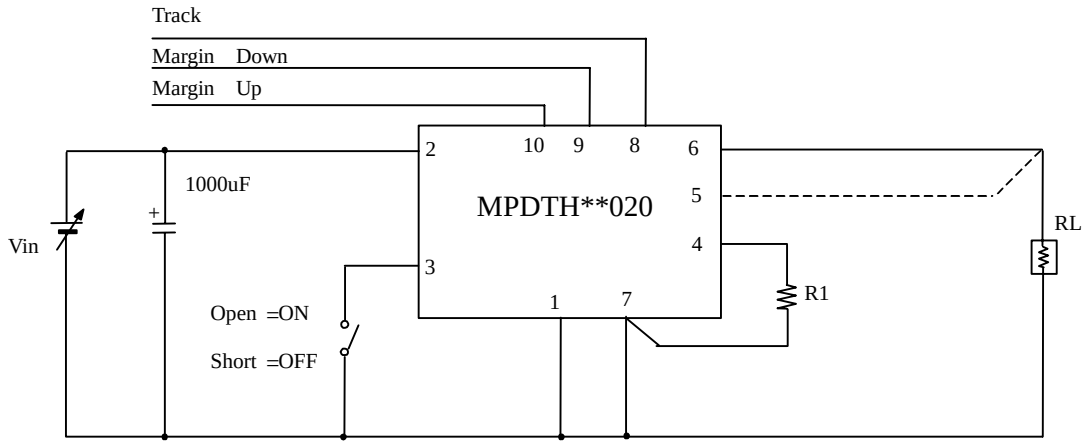
TH outline [in (mm)]

Pin No.	Signal	Pin No.	Signal
1.	GND	6.	Vout
2.	Vin	7.	GND
3.	Inhibit	8.	Track
4.	VoAdjus	9.	Margin Down
5.	VoSense	10.	Margin Up

⚠ **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

$$R1 = 10k \bullet \frac{0.8V}{Vout - 0.8V} - 2.49k \qquad : MPDTH03020 / 05020$$

$$R1 = 10k \bullet \frac{0.8V}{Vout - 1.2V} - 1.82k \qquad : MPDTH12020$$

■ General Specifications

（Ta=25ºC）

Item	Symbol	Condition	Parts Number	Min.	Typ.	Max.	Unit
Input voltage	Vin		MPDTH03020	2.95	3.3	3.65	V
			MPDTH05020	4.5	5.0	5.5	
			MPDTH12020	10.8	12.0	13.2	
Output voltage	Vout	Vin=2.95Vto 3.65V	MPDTH03020	0.8		2.5	V
		Vin=4.5V to 5.5V	MPDTH05020	0.8		3.6	
		Vin=10.8Vto13.2V	MPDTH12020	1.2		5.5	
Total output variation	Regtot	Rset 1% tolerance, ±100ppm/℃				±3	%Vo
Output current	Iout	MPDTH03020, MPDTH05020		0		22	A
		MPDTH12020		0		18	
Ripple voltage	Vrip	Vin=3.3V, Vout=2V,Iout=22A			20		mVp-p
		Vin=5.0V, Vout=3.3V,Iout=22A			20		
		Vin=12.0V, Vout=3.3V,Iout=18A			33		
Efficiency	Eff	Vin=3.3V,Vout=2.5V,Iout=10A			95		%
		Vin=5.0V,Vout=3.3V, Iout=14A			95		
		Vin=12.0V,Vout=5.0V, Iout=12A			95		

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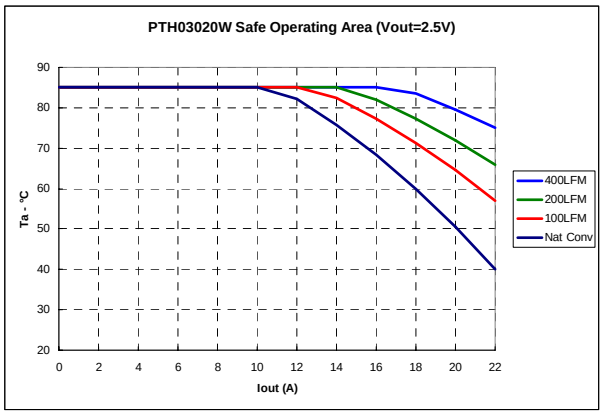
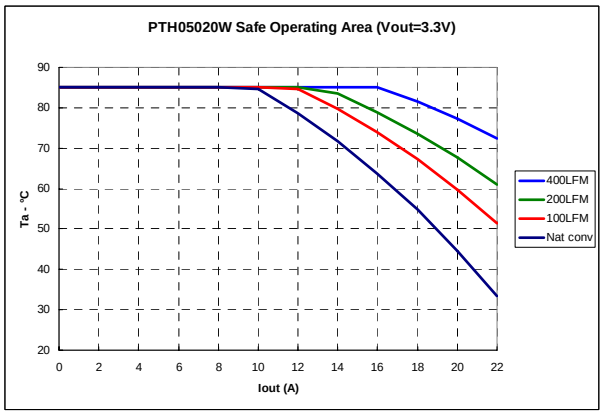
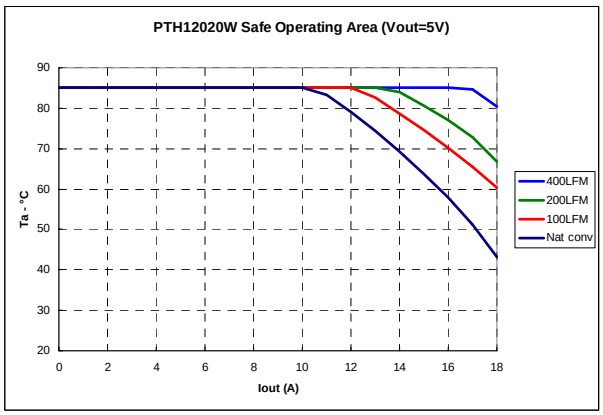
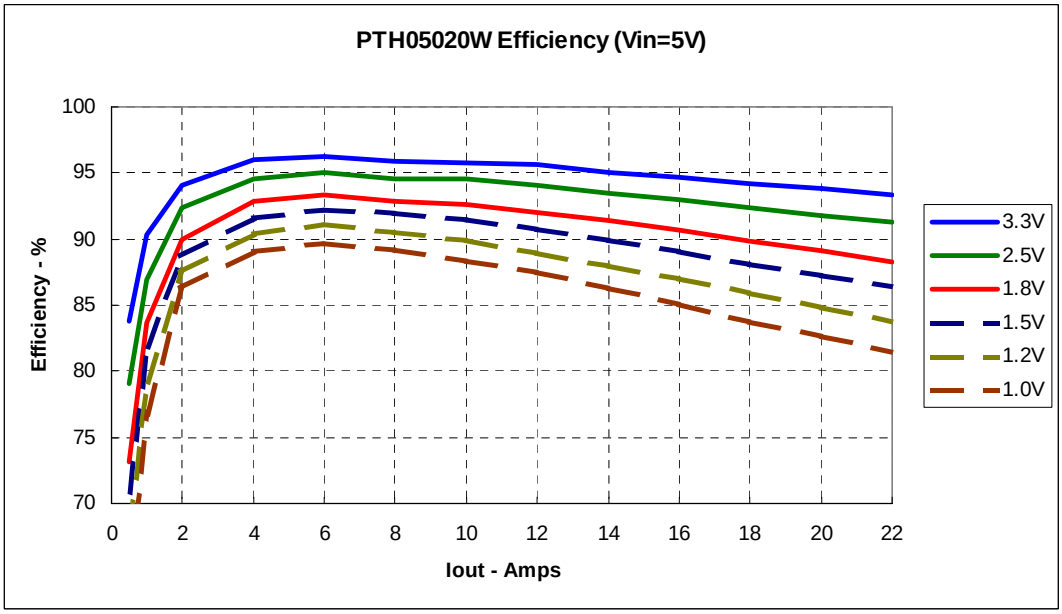
■ Thermal Derating







■ Conversion Efficiency



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