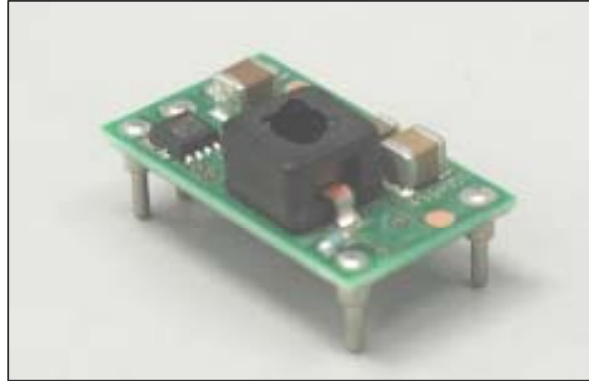


# DC-DC Converter Short Form

## MPDTH\*\*050YAS/YAH (6A output Point-of-Load Alliance)

### ■ Features

- VTT Bus Termination Output (Output Tracks the System Vref)
- High efficiency
  - 88% typical @3.3V input 1.25V/4A output
  - 87% typical @5.0V input 1.25V/4A output
  - 84% typical @12.0V input 1.25V/4A output
- Wide Operating Ambient Temperature
  - 40 °C to + 85 °C
- DDR、QDR Version
- ON/OFF Inhibit
- Under-Voltage Lockout
- Output Over-Current Protection

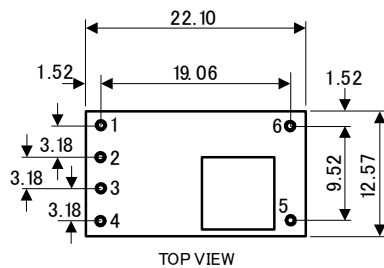


### ■ Ordering Information

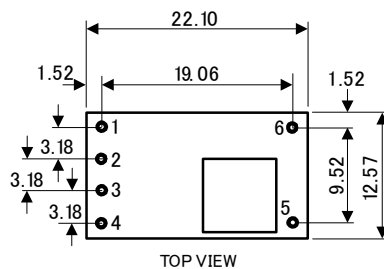
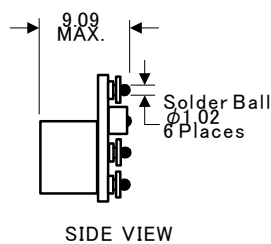
Input Voltage	Output Voltage	Output Current	Model Number
2.95V to 3.65V	0.55V to 1.8V	6A	MPDTH03050YA(S)/(H)
4.5V to 5.5V	0.55V to 1.8V	6A	MPDTH05050YA(S)/(H)
10.8V to 13.2V	0.55V to 1.8V	6A	MPDTH12050YA(S)/(H)

OPTIONS: "YAS" -- SMT termination, "YAH" – TH termination

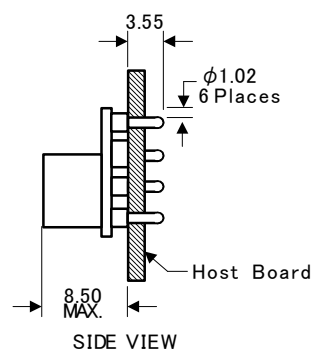
### ■ DIMENSIONS and PIN ASSIGN



SMT outline [in (mm)]



TH outline [in (mm)]

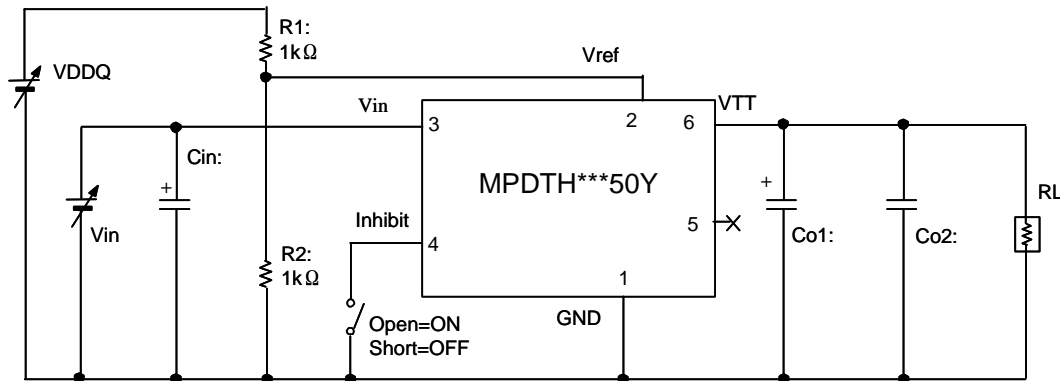


Pin No.	Signal
1.	GND
2.	VREF
3.	Vin
4.	Inhibit
5.	No Connect
6.	VTT

#### △ 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



Cin : 220 $\mu$ F(3.3V,5V Vin),560 $\mu$ F(12V Vin) Low-ESR Electrolytic Capacitor  
 Co1 : 470 $\mu$ F(3.3V,5V Vin),940 $\mu$ F(12V Vin) Low-ESR Electrolytic Capacitor  
 Co2 : 200 $\mu$ F(3.3V,5V Vin),400 $\mu$ F(12V Vin) Ceramic Capacitor

## General Specifications

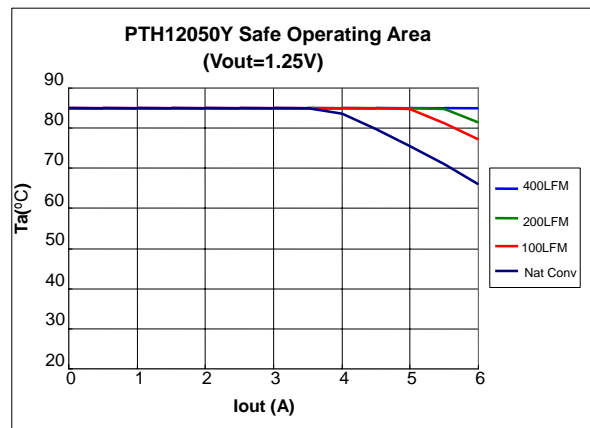
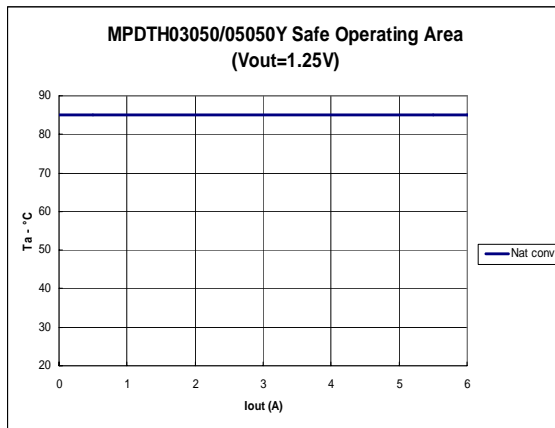
(Ta=25°C)

Item	Symbol	Condition	Parts Number	Min.	Typ.	Max.	Unit
Input voltage	Vin		MPDTH03050	2.95	3.3	3.65	V
			MPDTH05050	4.5	5.0	5.5	
			MPDTH12050	10.8	12.0	13.2	
Output voltage	Vout	Vref=0.55~1.8V		0.55		1.8	V
Output current	Iout	Continuous		0		±6	A
		Pulse		0		±8	
Ripple voltage	Vrip	Vin=3.3V, Vout=1.25V, Iout=6A			20		mVp-p
		Vin=5.0V, Vout=1.25V, Iout=6A			20		
		Vin=12.0V, Vout=3.3V, Iout=6A			20		
Efficiency	Eff	Vin=3.3V, Vout=1.25V, Iout=4A			88		%
		Vin=5.0V, Vout=1.25V, Iout=4A			87		
		Vin=12.0V, Vout=1.25V, Iout=4A			84		

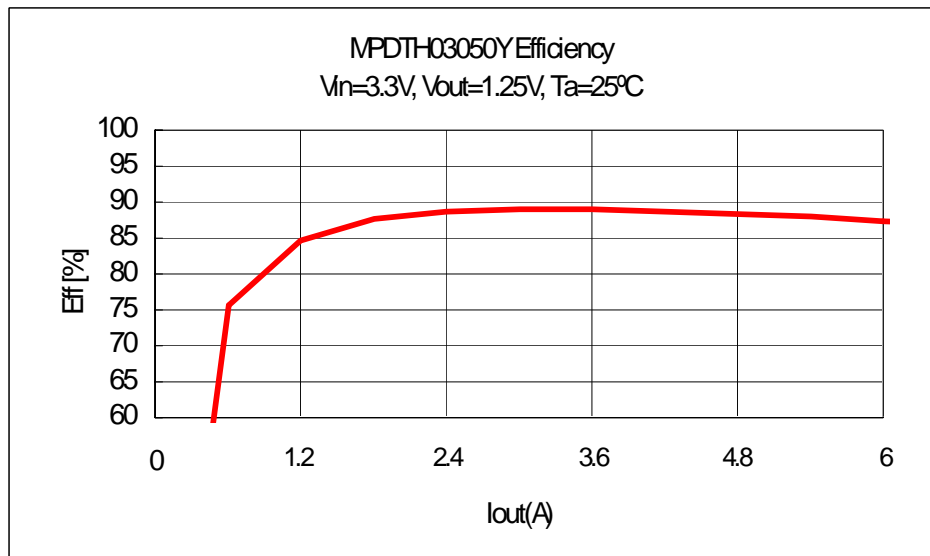
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## ■ Thermal Derating



## ■ Conversion Efficiency



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