

# MTA - Advanced Series

PCB mount ultra compact, regulated, high voltage DC-DC converter



36 standard products

◇ Reference: see chart for complete reference

◇ 3 output voltage ranges (Vout): 0 to 2kV or 2.5kV or 3kV

◇ 3 input voltage ranges (Vin): 3.6 to 10Vdc [5] or 6 to 15Vdc [12]



## General Description

◇ The MTA Series use an original design involving a high frequency, pulse by pulse regulated PWM regulator (Current Mode) which allows an exceptional wide input voltage range. Thus, those converters are recommended for unregulated supplies such as batteries, solar cells, etc...and too, for systems with versatile sources of power. A pre-regulator is useless and savings are made. Also, the technique allows a tight output regulation and a very low, free of pic, ripple. TC <50ppm/°C

Parameters	Specifications									
Input voltage Vin (pins 1 & 2)	[5]: absolute maximum 15Vdc, recommended: from 3.6 to 10Vdc [12]: absolute maximum 28Vdc, recommended: from 6 to 15Vdc [24]: absolute maximum 28Vdc, recommended: from 13.5 to 26Vdc									
Input current (room temperature)		[5]			[12]			[24]		
	Vin	3.6Vdc	5.0Vdc							
	Inhibit. Mode	<40µA	<60µA							
	HV setting = 0V	<6mA	<5mA	<5mA	<2mA		<3mA	<5mA	<6mA	<6mA
	HV setting = 2.5Vdc, no load		<90mA	<55mA						
HV setting = 2.5Vdc, full load										
HV output Vout (pin 9)	Programmable voltage: refer to the Selection Guide for voltage ranges									
Polarity	Fixed positive or negative									
HV setting (pins 3, 4)	Via an external voltage source 0 to + 2.5Vdc. An external potentiometer, minimum resistance 2k, can be used associated with the reference voltage (pin5). The input impedance of the HV setting is 1M. Accuracy: +/- 0.2% at rated output voltage.									



# MTA - Advanced Series

PCB mount ultra compact, regulated, high voltage DC-DC converter

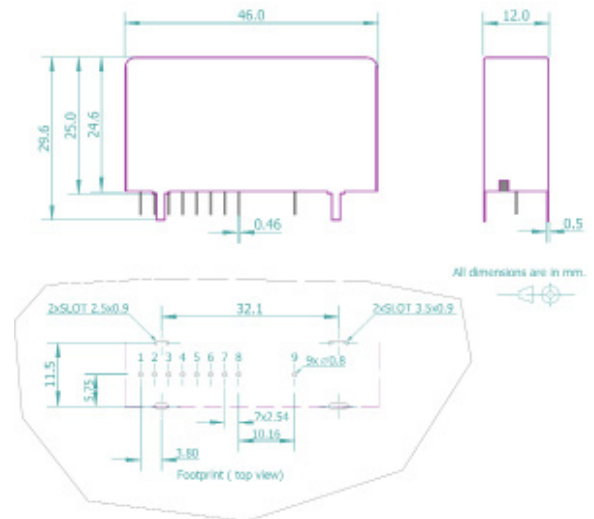
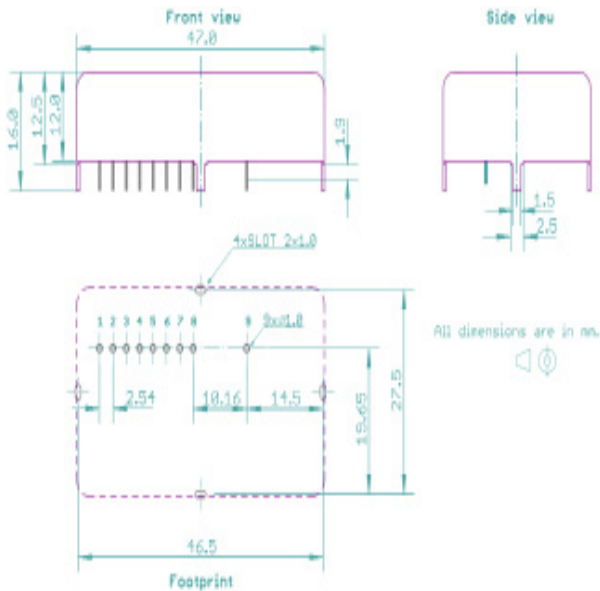
Parameters	Specifications
Max. output current I <sub>out</sub>	Refer to the Selection Guide
Load voltage regulation	±0,01 % for no load to full load
Line voltage regulation	±0,01 % over recommended input voltage range
Residual ripple	Raised mounting case: 0.002 % Flat mounting case: 0.004 %
Temperature coefficient	<50ppm/°C
Output HV monitoring (pin 6)	0/+ 2.500V, output impedance = 1kΩ Accuracy: +/- 0.2 % at rated output voltage
Output current monitoring (pin 7)	0/+2.500V, output impedance = 1Ω Accuracy: +/- 1 % after compensation (see note)
Output reference voltage (pin 5)	Refer to the Selection Guide
Inhibition mode (pin 8)	±0,01 % for no load to full load
Operating case temperature	-40°C to + 80°C
Storage temperature	-40°C to + 80°C
Safeguards	<ul style="list-style-type: none"><li>• Arc and short circuit protection</li><li>• Soft start feature: the start is guaranteed with no overshoot</li><li>• Protected against reverse Vin (-30Vdc max.)</li><li>• HV</li></ul>



# MTA - Advanced Series

PCB mount ultra compact, regulated, high voltage DC-DC converter

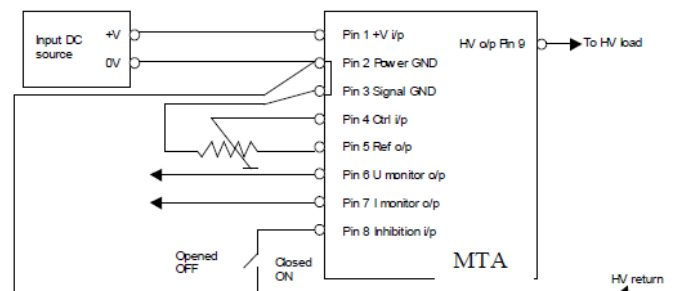
## Mechanical Dimensions



## Package Configuration

Case material	Tin steel plate Thickness 0.5 mm
Case dimensions LxHxW	MTF: 47.0 x 28.0 x 12.5 mm MTR: 47.0 x 28.0 x 12.5 mm
Pins	Through 0.46 round pins, length 3 mm, spacing: 2.54 mm, option: flying wire for HV output
PCB mounting (raised mounting models only)	Through 4 mounting tabs length: 5 mm, width: 1,5 mm, thickness : 0,5 mm
Weight	35g
Weight	5 g
Insulation	Fully potted in an epoxy resin

## Mechanical Dimensions



# MTA - Advanced Series

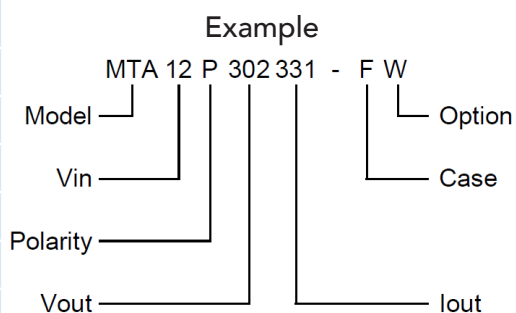
PCB mount ultra compact, regulated, high voltage DC-DC converter

## Pin Connections

Line input	1. Vin 2. 0V supply
HV setting	3. 0V signal 4. Control input 5. Output reference
HV monitoring	6. Voltage monitoring
I monitoring	7. Current monitoring
Inhibition	8. Inhibition input
HV output	9. Vout

## Ordering information

Model	Name of the series	MTA
Vin	3.6 to 10Vdc	5
	6 to 15Vdc	12
	13 to 26Vdc	24
Polarity	Positive output voltage	P
	Negative output voltage	N
Vout	Output voltage	See ordering code
Iout	Output current	See ordering code
Case	Raised mounting	R
	Flat mounting	F
Option	Fying wire to collect the HV output	W



+3000V,1W psu, 6 to 15Vdc i/p range,  
in the flat configuration,  
and with the optional flying wire for  
the HV output



# MTA - Advanced Series

PCB mount ultra compact, regulated, high voltage DC-DC converter

## MTA Series selection guide

Iout/Pout	Vout	Iout/Pout	Polarity	Case	Model
[5] 3.6 to 10.0V	300V	330 $\mu$ A/1W	+	Raised	MTA5P302331-R*
				Flat	MTA 5P302331-F*
			-	Raised	MTA 5N302331-R*
				Flat	MTA 5N302331-F*
	2500V	400 $\mu$ A/1W	+	Raised	MTA 5P252401-R*
				Flat	MTA 5P252401-F*
			-	Raised	MTA 5N252401-R*
				Flat	MTA 5N252401-F*
	2000V	500 $\mu$ A/1W	+	Raised	MTA 5P202501-R*
				Flat	MTA 5P202501-F*
			-	Raised	MTA 5N202501-R*
				Flat	MTA 5N202501-F*
[12] 6.0 to 158.0V	3000V	330 $\mu$ A/1W	+	Raised	MTA12P302331-R*
				Flat	MTA 12P302331-F*
			-	Raised	MTA 12N302331-R*
				Flat	MTA 12N302331-F*
	2500V	400 $\mu$ A/1W	+	Raised	MTA 12P252401-R*
				Flat	MTA 12P252401-F*
			-	Raised	MTA 12N252401-R*
				Flat	MTA 12N252401-F*
	2000V	500 $\mu$ A/1W	+	Raised	MTA 12P202501-R*
				Flat	MTA 12P202501-F*
			-	Raised	MTA 12N202501-R*
				Flat	MTA 12N202501-F*



# MTA - Advanced Series

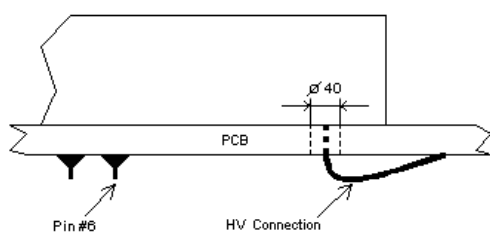
PCB mount ultra compact, regulated, high voltage DC-DC converter

## MTA Series selection guide (continued)

Iout/Pout	Vout	Iout/Pout	Polarity	Case	Model
[24] 13.5 to 26V	3000V	330 $\mu$ A/1W	+	Raised	MTA24P302331-R*
				Flat	MTA 24P302331-F*
			-	Raised	MTA 24N302331-R*
				Flat	MTA 24N302331-F*
	2500V	400 $\mu$ A/1W	+	Raised	MTA 24P252401-R*
				Flat	MTA 24P252401-F*
			-	Raised	MTA 24N252401-R*
				Flat	MTA 24N252401-F*
	2000V	500 $\mu$ A/1W	+	Raised	MTA 24P202501-R*
				Flat	MTA 24P202501-F*
			-	Raised	MTA 24N202501-R*
				Flat	MTA 24N202501-F*

## Application hints

Side view



Installation with the optional flying wire for HV output



This High Voltage power supply satisfies the requirements of EC Directives Safety.

Non contractual document.  
All specifications are subject to change without notice.

Rev.B 12/14

SDS  
High Voltage



Systems  
Development  
& Solutions

SDS High Voltage - Systems Development & Solutions  
53 rue Bourdignon - 94100 Saint-Maur-des-Fossés  
France - +33 (0)1 84 23 11 10 - contact@sdshv.com  
[www.sdshv.com](http://www.sdshv.com)