

# MTV Series

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



- 80 standard products
- ◇ Reference: see chart for complete reference
- ◇ Vin: 12Vdc, 15Vdc or 24Vdc
- ◇ Vout: 0 to 600V, 1000V, 1250V or 1500V
- ◇ Pout: 0.5W, 0.8W and 1W

## General Description

◇ The MTV Series is the ideal solution for PMTs that need a bias voltage ranging from 0 to 1500V, with very small current.

Low cost	Tight line / load regulation	Arc and continuous short circuit protection
Miniature and lightweight	Voltage monitoring	Self restoring output voltage
Raised PCB mounting	Low ripple (<0,003% p. to p.)	Option: flying wire for HV output

Parameters	Specifications
Input voltage Vin (pins 1 & 2)	12Vdc $\pm$ 0.5Vdc or 15Vdc $\pm$ 0.5Vdc or 24Vdc $\pm$ 1Vdc, according to type
Input current	At no load: 15mA At full load: from 65mA to 100mA
HV output Vout (pin 7 or lead - optional)	Programmable nominal voltage, refer to the Selection Guide for voltage ranges
Polarity	Fixed positive [MTP] or negative [MTN]
HV setting (pins 3, 4 & 5)	Via external potentiometer, minimum resistance 10k $\Omega$ or $\infty$ <ul style="list-style-type: none"><li>• Option 1: via external voltage source 0/ 5V <math>\pm</math>0.5% at full scale, and input impedance &gt;1M<math>\Omega</math></li><li>• Option 2: via external voltage source 0/10V <math>\pm</math>0.5% at full scale, and input impedance &gt;1M<math>\Omega</math></li></ul>
Max. output current Iout	Refer to the Selection Guide
Load voltage regulation	$\pm$ 0,01% of full output voltage ffor no load to full load
Line voltage regulation	$\pm$ 0,01% of full output voltage over specified input voltage range
Residual ripple	Between 10mV and 40mV peak-to-peak at full load
Temperature coefficient	100ppm/ $^{\circ}$ C for the maximum output voltage after starting and over temperature range 0 to 50 $^{\circ}$ C
Output HV monitoring (pin 6)	+1V/1kV max. or -1V/-1kV max. according to model polarity output impedance = 200k $\Omega$ $\pm$ 1%



# MTV Series

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

Parameters	Specifications
Output reference voltage (pin 5)	<ul style="list-style-type: none"> <li>• Option 1: 5V <math>\pm</math> 0.5 %, TC:50ppm/°C, max. output current:1mA</li> <li>• Option 2: 10V <math>\pm</math> 0.5 %, TC:50ppm/°C, max. output current:1mA</li> </ul>
Operating temperature	- 40°C to + 50°C
Storage temperature	- 40°C to + 70°C
Safeguards	<ul style="list-style-type: none"> <li>• Arc and short circuit protection</li> <li>• Protected against reverse Vin</li> </ul>
Options	<ul style="list-style-type: none"> <li>• Flying wire for HV output instead of pin 7</li> <li>• Suitable for use with an external potentiometer</li> </ul>

## Main Applications

- Avalanche Photo Diodes (APD)
- Photodiodes (PD)
- Photomultipliers Tubes (PM)

## 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

## 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
HV output	7. Vout



# MTV Series

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

## Marking

HV out: +1000V 1mA    Input: 24VDC

Sup 24V  
 Sup 0V  
 0V Signal  
 Control inp.  
 Ref output  
 Vol Monitor

HV OUT

5 Bvd de Créteil F 94100 Saint Maur  
 Tel : 33 (0)1 43 97 65 04  
 http://www.sdshv.com

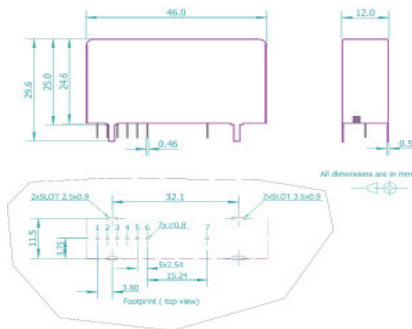
sds  
 RoHS Compliant Product

MODEL : MT24P102102  
 Serial number : 42063487  
 Made in France

CE

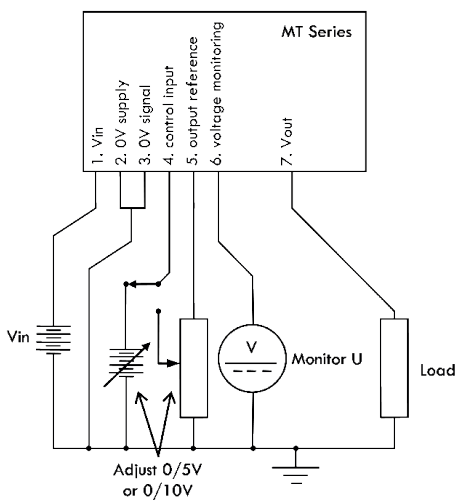
MTV model  
(raised mounting)

## Mechanical Dimensions

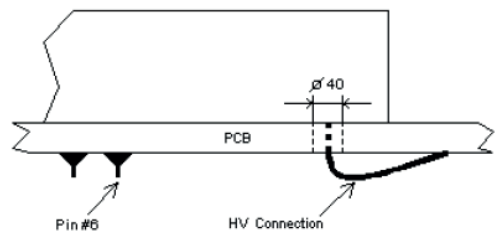


MTV model  
(raised mounting)

## Functional diagram



## Option: flying wire for HV output



# MTV Series

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

## MTV Series overview

		Vin (Vdc)		
		12	15	24
Vout (Vdc)	600	(0.5W) MT12x601831x	(0.8W) MT15x601132x	(1W) MT24x601172x
	1000	(0.5W) MT12x102501x	(0.8W) MT15x102801x	(1W) MT24x102102x
	1250	(0.5W) MT12x122401x	(0.8W) MT15x122641x	(1W) MT24x122801x
	1500	(0.5W) MT12x152331x	(0.8W) MT15x152531x	(1W) MT24x152671x

(Other output voltages and currents are available upon request)

## Ordering information

Model	Name of the series	MTV
Vin	12Vdc nominal	12
	15Vdc nominal	15
	24Vdc nominal	24
Polarity	Positive output voltage	P
	Negative output voltage	N
Vout	Output voltage	See ordering code
Iout	Output current	See ordering code
Control	05Vdc	5
	10Vdc	10
Case	Raised mounting	MTV Series
Option	Flying wire to collect the HV output	W

### Output voltage and current code

- The power supply units have a 6-digit ordering code;
- The first 3 digits concern the output voltage in V
  - The first 2 digits indicate the output voltage value
  - The last digit indicates the multiplier
- The last 3 digits concern the output current in  $\mu\text{A}$ 
  - The first 2 digits indicate the nominal output current value
  - The last digit indicates the multiplier

### Ordering example

• The ordering code of a +1500V@1W psu under 24Vdc in the flat configuration, with 0/5V analog command for setting, and with the optional flying wire for the HV output is : MTV24P152671-5W.



# MTV Series

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

## MTV Series selection guide

Vout	Iout/Pout	Vin	Polarity	Control	Model	
1500V	0.67mA/1.0W	24V	+	0/10V	MTV24P152671-10*	
				0/5V	MTV24P152671-5*	
			-	0/10V	MTV24N152671-10*	
				0/5V	MTV24N152671-5*	
	0.53mA/0.8W	15V	+	0/10V	MTV15P152531-10*	
				0/5V	MTV15P152531-5*	
			-	0/10V	MTV15N152531-10*	
				0/5V	MTV15N152531-5*	
	0.33mA/0.5W	12V	+	0/5V	MTV12P152331-5*	
			-	0/5V	MTV12N152331-5*	
	1250V	0.80mA/1.0W	24V	+	0/10V	MTV24P122801-10*
					0/5V	MTV24P122801-5*
-				0/10V	MTV24N122801-10*	
				0/5V	MTV24N122801-5*	
0.64mA/0.8W		15V	+	0/10V	MTV15P122641-10*	
				0/5V	MTV15P122641-5*	
			-	0/10V	MTV15N122641-10*	
				0/5V	MTV15N122641-5*	
0.40mA/0.5W		12V	+	0/5V	MTV12P122401-5*	
			-	0/5V	MTV12N122401-5*	
1000V		1.00mA/1.0W	24V	+	0/10V	MTV24P102102-10*
					0/5V	MTV24P102102-5*
	-			0/10V	MTV24N102102-10*	
				0/5V	MTV24N102102-5*	
	0.80mA/0.8W	15V	+	0/10V	MTV15P102801-10*	
				0/5V	MTV15P102801-5*	
			-	0/10V	MTV15N102801-10*	
				0/5V	MTV15N102801-5*	
	0.50mA/0.5W	12V	+	0/5V	MTV12P102501-5*	
			-	0/5V	MTV12N102501-5*	
	600V	1.67mA/1.0W	24V	+	0/10V	MTV24P601172-10*
					0/5V	MTV24P601172-5*
-				0/10V	MTV24N601172-10*	
				0/5V	MTV24N601172-5*	
1.33mA / 0.8W		15V	+	0/10V	MTV15P601132-10*	
				0/5V	MTV15P601132-5*	
			-	0/10V	MTV15N601132-10*	
				0/5V	MTV15N601132-5*	
0.83mA/0.5W		12V	+	0/5V	MTV12P601831-5*	
			-	0/5V	MTV12N601831-5*	

\* Specify -W for wire option