

MT Series

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



- 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 MT 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
Flat or 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 Ω or ∞ <ul style="list-style-type: none">• Option 1: via external voltage source 0/ 5V \pm0.5% at full scale, and input impedance >1MΩ• Option 2: via external voltage source 0/10V \pm0.5% at full scale, and input impedance >1MΩ
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 Ω \pm 1%



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

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



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Marking


Model: MT12N152331
Serial Nr: 01073664
 MADE IN FRANCE

5 Bvd de Créteil 94100 France
 St Maur des Fossés
 33 (0)1 43 97 65 04
 http://www.sdshv.com

RoHS Compliant
 7+2d, 0.4

- HV OUT
- Vol Monitor.
- Réf output.
- Control Inp.
- Ov Signal
- Sup.Ov
- Sup. 12v


MTF model
(flat mounting)

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

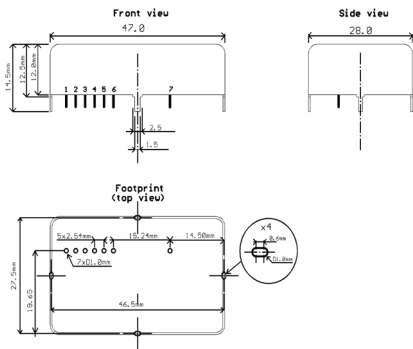

Model: MT24P102102
Serial number: 42063487
 Made in France

RoHS Compliant Product

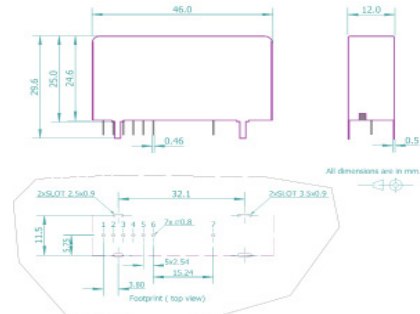



MTR model
(raised mounting)

Mechanical Dimensions

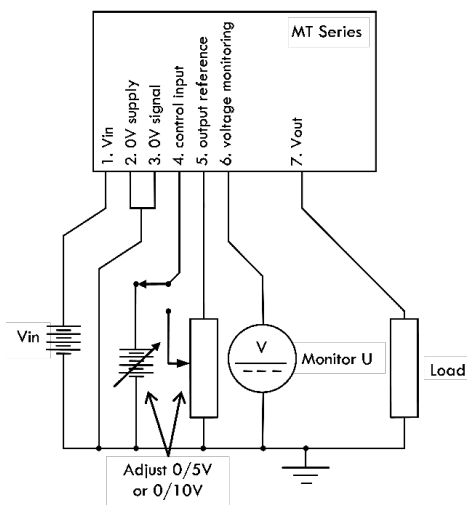


MTF model
(flat mounting)

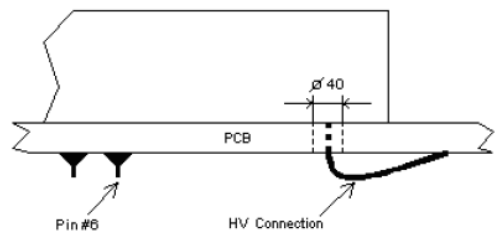


MTR model
(raised mounting)

Functional diagram



Option: flying wire for HV output



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MT 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	MT
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	R
	Flat mounting	F
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 μA
 - 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 : MT24P152671-5FW.



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MT Series selection guide

Vout	Iout/Pout	Vin	Polarity	Control	Case	Model
1500V	0.67mA/1.0W	24V	+	0/10V	Raised	MT24P152671-10R*
					Flat	MT24P152671-10F*
				0/5V	Raised	MT24P152671-5R*
			Flat		MT24P152671-5F*	
			-	0/10V	Raised	MT24N152671-10R*
					Flat	MT24N152671-10F*
	0/5V	Raised		MT24N152671-5R*		
		Flat	MT24N152671-5F*			
	0.53mA/0.8W	15V	+	0/10V	Raised	MT15P152531-10R*
					Flat	MT15P152531-10F*
				0/5V	Raised	MT15P152531-5R*
			Flat		MT15P152531-5F*	
-			0/10V	Raised	MT15N152531-10R*	
				Flat	MT15N152531-10F*	
	0/5V	Raised	MT15N152531-5R*			
Flat		MT15N152531-5F*				
0.33mA/0.5W	12V	+	0/5V	Raised	MT12P152331-5R*	
				Flat	MT12P152331-5F*	
		-	0/5V	Raised	MT12N152331-5R*	
				Flat	MT12N152331-5F*	
1250V	0.80mA/1.0W	24V	+	0/10V	Raised	MT24P122801-10R*
					Flat	MT24P122801-10F*
				0/5V	Raised	MT24P122801-5R*
			Flat		MT24P122801-5F*	
			-	0/10V	Raised	MT24N122801-10R*
					Flat	MT24N122801-10F*
	0/5V	Raised		MT24N122801-5R*		
		Flat	MT24N122801-5F*			
	0.64mA/0.8W	15V	+	0/10V	Raised	MT15P122641-10R*
					Flat	MT15P122641-10F*
				0/5V	Raised	MT15P122641-5R*
			Flat		MT15P122641-5F*	
-			0/10V	Raised	MT15N122641-10R*	
				Flat	MT15N122641-10F*	
	0/5V	Raised	MT15N122641-5R*			
Flat		MT15N122641-5F*				
0.40mA/0.5W	12V	+	0/5V	Raised	MT12P122401-5R*	
				Flat	MT12P122401-5F*	
		-	0/5V	Raised	MT12N122401-5R*	
				Flat	MT12N122401-5F*	

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MT Series selection guide (continued)

Vout	Iout/Pout	Vin	Polarity	Control	Case	Model			
1000V	1.00mA/1.0W	24V	+	0/10V	Raised	MT24P102102-10R*			
					Flat	MT24P102102-10F*			
				0/5V	Raised	MT24P102102-5R*			
			Flat		MT24P102102-5F*				
			-	0/10V	Raised	MT24N102102-10R*			
					Flat	MT24N102102-10F*			
	0/5V	Raised		MT24N102102-5R*					
		Flat	MT24N102102-5F*						
	1000V	0.80mA/0.8W	15V	+	0/10V	Raised	MT15P102801-10R*		
						Flat	MT15P102801-10F*		
					0/5V	Raised	MT15P102801-5R*		
				Flat		MT15P102801-5F*			
-				0/10V	Raised	MT15N102801-10R*			
					Flat	MT15N102801-10F*			
		0/5V	Raised	MT15N102801-5R*					
Flat			MT15N102801-5F*						
1000V		0.50mA/0.5W	12V	+	0/5V	Raised	MT12P102501-5R*		
						Flat	MT12P102501-5F*		
					-	0/5V	Raised	MT12N102501-5R*	
				Flat			MT12N102501-5F*		
	600V			1.67mA/1.0W		24V	+	0/10V	Raised
					Flat				MT24P601172-10F*
0/5V		Raised	MT24P601172-5R*						
		Flat	MT24P601172-5F*						
-		0/10V	Raised		MT24N601172-10R*				
			Flat		MT24N601172-10F*				
		0/5V	Raised	MT24N601172-5R*					
Flat			MT24N601172-5F*						
600V		1.33mA / 0.8W	15V	+	0/10V	Raised	MT15P601132-10R*		
						Flat	MT15P601132-10F*		
					0/5V	Raised	MT15P601132-5R*		
				Flat		MT15P601132-5F*			
	-			0/10V	Raised	MT15N601132-10R*			
					Flat	MT15N601132-10F*			
		0/5V	Raised	MT15N601132-5R*					
	Flat		MT15N601132-5F*						
	600V	0.83mA/0.5W	12V	+	0/5V	Raised	MT12P601831-5R*		
						Flat	MT12P601831-5F*		
					-	0/5V	Raised	MT12N601831-5R*	
				Flat			MT12N601831-5F*		