Systems Development & Solutions

Electronics and Power Conversion

LM Series

PCB-mount ultra compact power supply with fine current monitoring accuracy

5 standard models

Vin : 24Vdc

Vout : -40V to -400V @ 30mW through -350V to -3500V @ 300mW

- small volume and lightweight
- PCB flat mounting
- tight line/load regulation
- extremely low ripple
- low noise due to metal shielding
- voltage programming and monitoring
- fine current monitoring accuracy
- arc and continuous short circuit protection
- low power consumption

Parameters	Specifications
Input voltage Vin (pins 7 & 8)	24Vdc ±0.5Vdc
Input current	at no load : 15mA at full load : see chart
HV output Vout (pins 9 & 10)	from -40 to -400V up to -350 to ±3500V according to type (see chart)
Rising time	850ms at nominal load (voltage and current nominal)
Falling time	20ms at nominal load (voltage and current nominal)
HV setting (pins 3 & 5)	via external voltage source 0/10V, accuracy ±0.1% vs maximum over output voltage range, at 0V : Vout < 2V
Max. output current Iout	from 10µA to 100µA according to type
Short-circuit current	typical : high voltage current limited to 110% max
Load voltage regulation	±0,01% of full output voltage for no load to full load
Line voltage regulation	±0,01% of full output voltage over specified input voltage range
Polarity	fixed positive or negative according to type
Residual ripple	from 1.33×10^{-6} to 5×10^{-6} according to type
Temperature coefficient	100ppm/°C for the maximum output voltage after starting and over temperature range 0 to 50°C
Output HV monitoring (pin 4)	dc analog 0/10V bufferised output signal (accuracy ±0.15% from 1V to 10V), impedance = 10kΩ at 10V
Output current monitoring (pin 6)	dc analog 0/10V bufferised output signal (accuracy ± 0.5% from 1V to 10V), impedance = 10kΩ at 10V
Operating temperature	0°C to +50°C
Storage temperature	-20°C to +70°C
Safeguards	▪ arc and short circuit protection ▪ case connected to 0V
HV power input ON/OFF	to disable : opened remote interlock between inhib.1 and inhib.2 to enable : closed remote interlock

Possible Applications

- Avalanche Photodiodes (APD)
- Photodiodes (PD)
- Photomultiplier Tubes (PMT)

Package Configuration

Case material	tin plate thickness 0.5mm
Case dimensions LxHxW	63,5 x 17,5 x 44.0 mm
Input / Output connections	through section 0.63 x 0.63mm square pins, length : 4mm, spacing : 2.54mm
Weight	70g
Insulation	fully potted in an epoxy resin

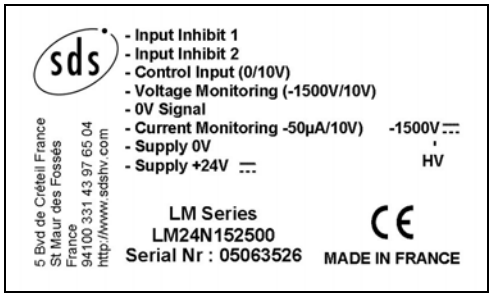
Pin Connections

Inhibition input:	1. inhib.1
	2. inhib.2
Line input :	7. supply 0V
	8. Vin
HV setting :	5. 0V signal
	3. control input
HV monitoring :	6. current monitoring
	4. voltage monitoring
HV output :	9. Vout
	10. Vout

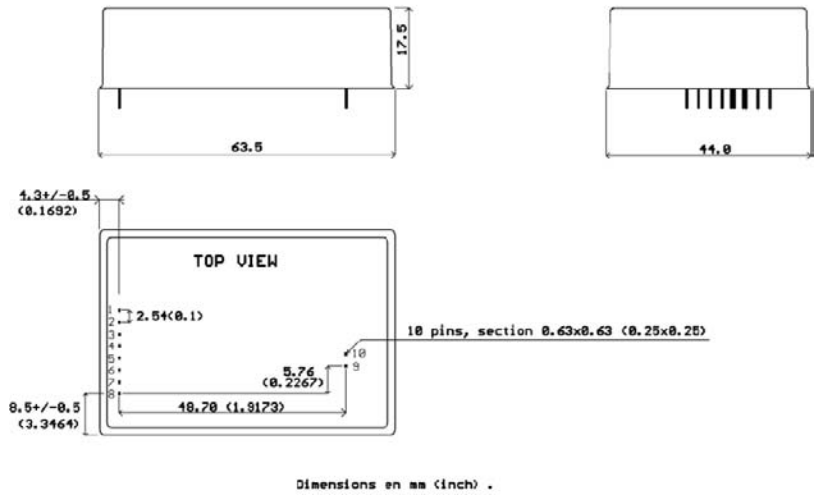
LM Series Selection Guide

Model	V_{in}	I_{in}	V_{out}	I_{out}	P_{out}	short-circuit current	ripple (p-p)
LM24N401750	24 Vdc	45 mA	-40 to -400 V	75 µA	30 mW	83 µA + 10 %	< 2 mV
LM24N152500	24 Vdc	50 mA	-150 to -1500 V	50 µA	75 mW	55 µA + 10 %	< 2 mV
LM24N152101	24 Vdc	100 mA	-150 to -1500 V	100 µA	150 mW	110 µA + 10 %	< 5 mV
LM24P202100	24 Vdc	40 mA	+200 to +2000 V	10 µA	20 mW	11 µA + 10 %	< 5 mV
LM24N352750	24 Vdc	90 mA	-350 to -3500 V	75 µA	262mW	83 µA + 10 %	< 10 mV

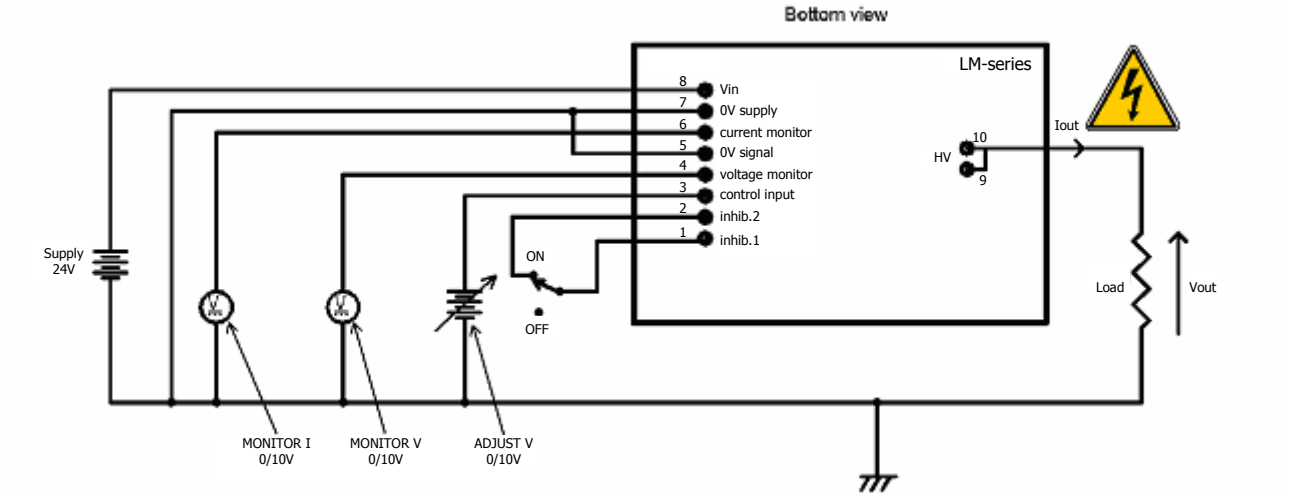
Marking

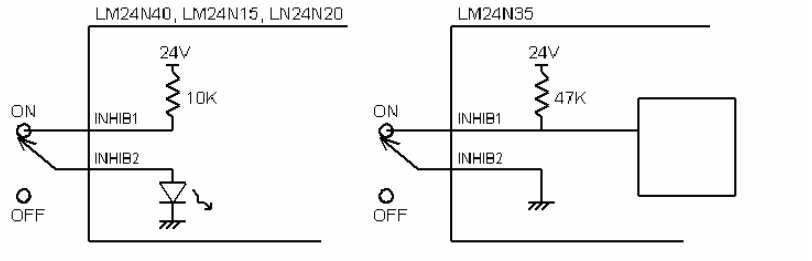


Mechanical Dimensions



Functional Diagrams





This High Voltage power supply satisfies the requirements of EC Directives Safety EN 61010-1 2001 Edition & EMC EN 61326-1: 1977 + A1: 1998 + A2: 2001 + A3 : 2004

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