



**15 Watt, Regulated, MEDICAL  
AC/DC Modules, PCB mounting  
Series DVM15M-L52-A3**



**Features**

- Input: 85 – 305VAC & 100 – 430 VDC
- Regulated Output, Low Ripple & Noise
- Efficiency to 87%
- Low No-Load Power Consumption 0,1W
- Meets IEC/EN/60601-1 (2xMOPP)
- IEC/EN/UL62368 approved
- Over Current Protection
- Over Voltage Protection
- Short Circuit Protection
- I/O Isolation 4000 VAC
- Meets EN60335 / EN61558
- Meets CISPR32 / EN55032 Class B / EN55014

MODEL NUMBER	OUTPUT VOLTAGE [ VDC ]	OUTPUT CURRENT MAX. [ mA ]	OUTPUT CURRENT MIN. [ A ]	EFF. [ % ]	OUTPUT POWER [ W ]	MAX. CAP. LOAD [ $\mu$ F ]	PACKAGE L52 [ mm ]
DVM15M-L52-S05-A3	5	3000	0	85	15	8000	52.40x27.20x24.00
DVM15M-L52-S12-A3	12	1250		86		4000	
DVM15M-L52-S15-A3	15	1000		87		3000	
DVM15M-L52-S24-A3	24	625		87		1000	

Note:

1. Unless otherwise specified, all specifications above are measured at rated input voltage and rated output load TA=25°C, humidity <75%

### INPUT SPECIFICATIONS:

Input Voltage Range.....	85 to 305VAC / 100 to 430VDC
Input Frequency.....	47 to 440Hz
Input Current.....	115VAC 500mA / 230VAC 300mA max.
Inrush Current.....	115VAC 20A typ. / 230VAC 45A typ.
Leakage Current (@277Vac/50Hz).....	0,1mA RMS max.

### OUTPUT SPECIFICATIONS:

Voltage Accuracy.....	±1,5% typ.
Line Regulation (Full Load).....	±0,5% typ.
Load Regulation (0-100% Load).....	±1% typ.
Min. Load.....	0%
Ripple & Noise (20MHz Bandwidth).....	150mVp-p max.
Short Circuit Protection.....	Hiccup, Continuous, self-recovery
Over Current Protection.....	≥110%Io, self-recovery
Over Voltage Protection.....	5Vout ..... ≤7,5Vdc
	12Vout ..... ≤20Vdc
	15Vout ..... ≤20Vdc
	24Vout ..... ≤30Vdc

### GENERAL SPECIFICATIONS:

Isolation Voltage (Test for 1min., leakage current≤5mA).....	Input/Output.....	4000Vac min.
Hold-up Time.....	115Vac,8ms typ. / 230Vac, 50ms typ.	
Operating Temperature Range.....		-40°C to +70°C
Derating.....		see Derating Curve
Input Voltage Derating.....		see Derating Curve
Storage Temperature Range.....		-40°C to +85°C
Humidity (non condensing).....		95%RH max.
Switching Frequency.....		65kHz typ.
Efficiency.....		see table
MTBF (MIL-HDBK-217 @25°C).....		>1.500.000h

### SAFETY:

EMI.....	CE/RE.....	EN55014 / CISPR32/EN55032/ Class B
Immunity.....		IEC/EN61000-4-2,3,4,5,6,11
Safety standards meets.....		EN/IEC/60601-1/ANSI/AAMI ES60601-1 standards (2xMOPP) & EN60335, EN61558
Safety approval.....		IEC/EN/UL62368-1
Safety Class.....		CLASS II

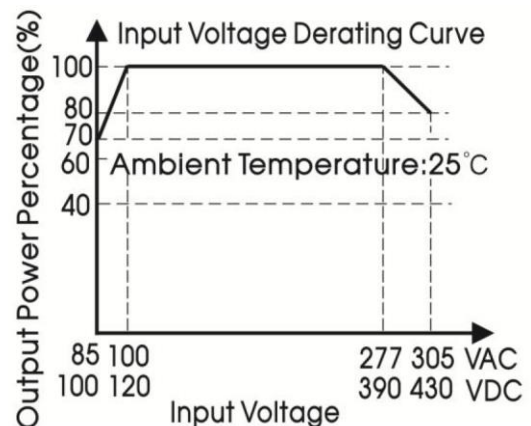
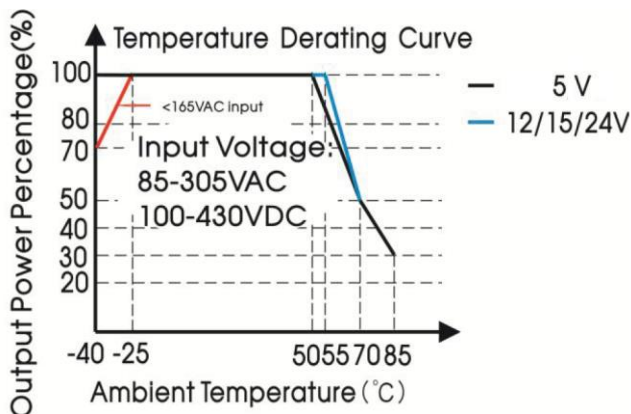
### MECHANICAL SPECIFICATIONS:

Case Material.....	Plastic UL94V-0
Dimension.....	52.40 x 27.20 x 24.00 mm
Weight.....	55g typ.

Note:

1. External input FUSE is recommended to use 3.15A/300V, slow blow.
2. External MOV S14K350 is recommended between AC(L) and AC(N).
3. Ripple and Noise are measured by the method of parallel lines.

### DERATING CURVE

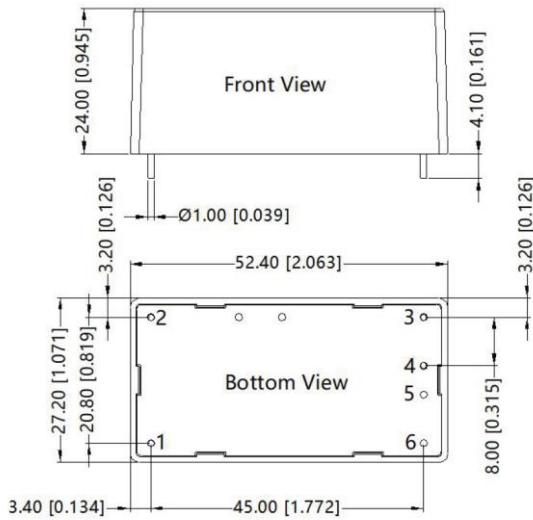


Note:

Unit: mm [inch]

Pin diameter tolerances:  $\pm 0.10\text{mm}$  [ $\pm 0.004$ ]

General tolerances:  $\pm 0.50\text{mm}$  [ $\pm 0.020$ ]



Pin	Single Output
1	AC (L)
2	AC (N)
3	-Vo
4	+Vo
5	NP
6	NP

NP=No Pin

## TYPICAL APPLICATION

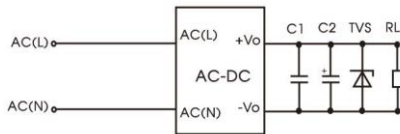


Fig. 1: Typical circuit diagram

Part No.	C1	C2	TVS
DVM15M-L52-S05-A3	1 $\mu$ F/50V	10 $\mu$ F/16V	SMBJ7.0A
DVM15M-L52-S12-A3		10 $\mu$ F/25V	SMBJ20A
DVM15M-L52-S15-A3		10 $\mu$ F/25V	SMBJ20A
DVM15M-L52-S24-A3		10 $\mu$ F/35V	SMBJ30A

### Output Filter Components:

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2 (refer to manufacture's datasheet). Choose a capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

### EMC compliance recommended circuit

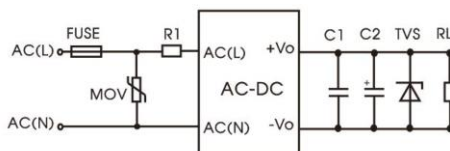


Fig 2: EMC application circuit with higher requirements

Component	Recommended value
FUSE	3.15A/300V, slow-blow, required
MOV	S14K350
R1	3 $\Omega$ /3W