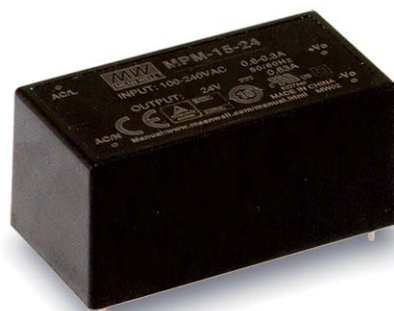




Наличие и актуальные цены на

**MPM-15-24**

<https://www.mean-well.ru/store/MPM-15-24/>



BS EN/EN60335-1 ANSI/AAMI ES60601-1 BS EN/EN60601-1 IEC60601-1 TPTC004

## Features

- 2.06"x1.07" compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/BS EN/EN60601-1
- Suitable for BF application with appropriate system consideration
- No load power consumption<0.1W
- Extremely low leakage current
- Wide operating temp. range -40 ~ +85°C
- EMI class B for class II configuration
- Protections:  
Short circuit / Overload / Over voltage / Over temperature
- No minimum load required
- 3 years warranty

## Applications

- Portable medical device
- Mobile clinical workstation
- Medical computer monitor
- Medical examination instrument

## GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## Description

MPM-15 is a 15W high density and small size (52.4\*27.2\*24mm) AC/DC module type medical power supply series offered in pin type. It features the operation for 80~264VAC, a low no load power consumption less than 0.1W, a high efficiency up to 87%, Class II (no FG) double insulation, outstanding dissipation and high lifespan thanks to the interior potting, 2G anti-vibration, high EMC performance, 4KVAC isolation, etc. The design observes IEC/BS EN/EN60601-1 and ANSI/AAMI ES60601-1 version three with 2xMOPP level and ultra-low leakage current (<80  $\mu$  A). It is very suitable for BF (patient contact) type medical device or relevant equipment.

## Model Encoding

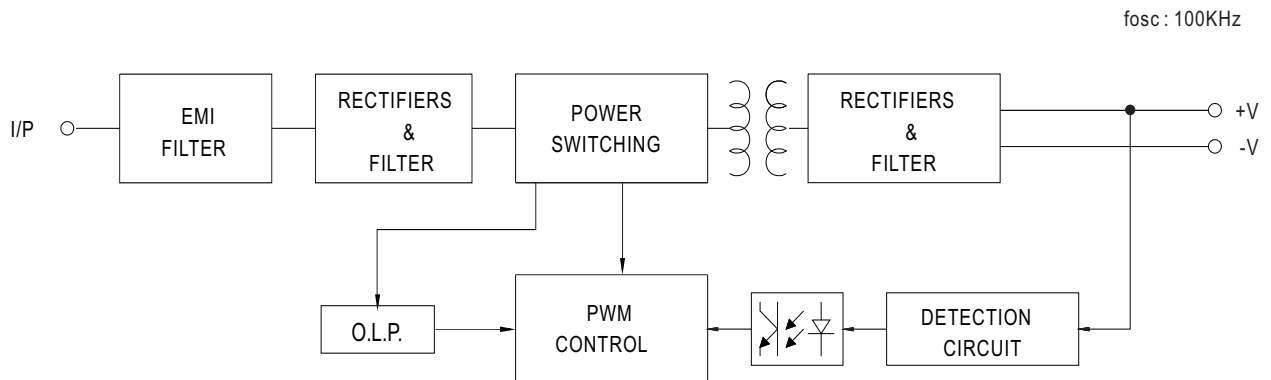
MPM - 15 - 5

Output voltage  
Rated wattage  
Series name

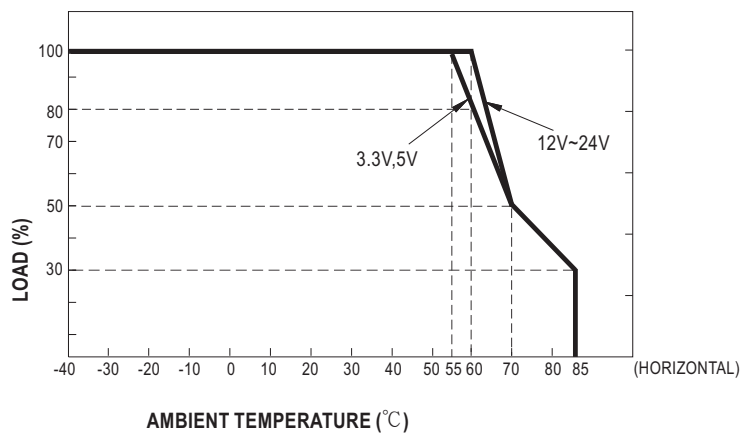
**SPECIFICATION**

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MPM-15-3.3                                                                                                                                                            | MPM-15-5                                                                                      | MPM-15-12    | MPM-15-15                                                              | MPM-15-24    |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------|--------------|
| OUTPUT                   | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3.3V                                                                                                                                                                  | 5V                                                                                            | 12V          | 15V                                                                    | 24V          |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.5A                                                                                                                                                                  | 3A                                                                                            | 1.25A        | 1A                                                                     | 0.63A        |
|                          | CURRENT RANGE <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 ~ 3.5A                                                                                                                                                              | 0 ~ 3A                                                                                        | 0 ~ 1.25A    | 0 ~ 1A                                                                 | 0 ~ 0.63A    |
|                          | PEAK CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3.85A                                                                                                                                                                 | 3.3A                                                                                          | 1.38A        | 1.1A                                                                   | 0.69A        |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 11.6W                                                                                                                                                                 | 15W                                                                                           | 15W          | 15W                                                                    | 15.1W        |
|                          | PEAK LOAD(10sec.) <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12.7W                                                                                                                                                                 | 16.5W                                                                                         | 16.6W        | 16.5W                                                                  | 16.6W        |
|                          | RIPPLE & NOISE (max.) <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 150mVp-p                                                                                                                                                              | 150mVp-p                                                                                      | 150mVp-p     | 180mVp-p                                                               | 180mVp-p     |
|                          | VOLTAGE TOLERANCE <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±2.0%                                                                                                                                                                 | ±2.0%                                                                                         | ±2.0%        | ±2.0%                                                                  | ±2.0%        |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±0.5%                                                                                                                                                                 | ±0.5%                                                                                         | ±0.3%        | ±0.3%                                                                  | ±0.3%        |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±0.5%                                                                                                                                                                 | ±0.5%                                                                                         | ±0.5%        | ±0.5%                                                                  | ±0.5%        |
|                          | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1500ms, 30ms/230VAC      1500ms, 30ms/115VAC at full load                                                                                                             |                                                                                               |              |                                                                        |              |
|                          | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 40ms/230VAC      10ms/115VAC at full load                                                                                                                             |                                                                                               |              |                                                                        |              |
| INPUT                    | VOLTAGE RANGE <small>Note.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 80 ~ 264VAC      113V~370VDC                                                                                                                                          |                                                                                               |              |                                                                        |              |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 47 ~ 440Hz                                                                                                                                                            |                                                                                               |              |                                                                        |              |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 83.5%                                                                                                                                                                 | 85.5%                                                                                         | 86.5%        | 87%                                                                    | 86.5%        |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.6A/115VAC      0.3A/230VAC                                                                                                                                          |                                                                                               |              |                                                                        |              |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | COLD START      20A/115VAC      45A/230VAC                                                                                                                            |                                                                                               |              |                                                                        |              |
|                          | LEAKAGE CURRENT (max.) <small>Note.7</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Touch current <80 $\mu$ A/264VAC                                                                                                                                      |                                                                                               |              |                                                                        |              |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 110% ~ 150% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                              |                                                                                               |              |                                                                        |              |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3.8 ~ 5V                                                                                                                                                              | 5.8~ 6.8V                                                                                     | 13.8 ~ 16.2V | 17.3 ~ 20.3V                                                           | 27.6 ~ 32.4V |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Protection type : Shut off o/p voltage, clamping by zener diode                                                                                                       |                                                                                               |              |                                                                        |              |
|                          | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Protection type : Shut down o/p voltage, recovers automatically after temperature goes down                                                                           |                                                                                               |              |                                                                        |              |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +85℃ (Refer to "Derating Curve")                                                                                                                                |                                                                                               |              |                                                                        |              |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 20 ~ 90% RH non-condensing                                                                                                                                            |                                                                                               |              |                                                                        |              |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40 ~ +85℃, 10 ~ 95% RH non-condensing                                                                                                                                |                                                                                               |              |                                                                        |              |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.03%/℃ (0 ~ 60℃)                                                                                                                                                    |                                                                                               |              |                                                                        |              |
|                          | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Wave soldering: 265℃, 5s (max.); Manual soldering: 390℃, 3s (max.)                                                                                                    |                                                                                               |              |                                                                        |              |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                                                               |                                                                                               |              |                                                                        |              |
|                          | OPERATING ALTITUDE <small>Note.8</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5000 meters                                                                                                                                                           |                                                                                               |              |                                                                        |              |
| SAFETY & EMC<br>(Note.9) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | IEC60601-1, TUV BS EN/EN60601-1, IEC60335-1, Dekra BS EN/EN60335-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1 (3.1 version), CAN/CSA-C22 3 <sup>rd</sup> Edition approved |                                                                                               |              |                                                                        |              |
|                          | ISOLATION LEVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Primary-Secondary: 2xMOPP                                                                                                                                             |                                                                                               |              |                                                                        |              |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | I/P-O/P:4KVAC                                                                                                                                                         |                                                                                               |              |                                                                        |              |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH                                                                                                                              |                                                                                               |              |                                                                        |              |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameter                                                                                                                                                             | Standard                                                                                      |              | Test Level / Note                                                      |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Conducted emission                                                                                                                                                    | BS EN/EN55011 (CISPR11)                                                                       |              | Class B                                                                |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Radiated emission                                                                                                                                                     | BS EN/EN55011 (CISPR11)                                                                       |              | Class B                                                                |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Harmonic current                                                                                                                                                      | BS EN/EN61000-3-2                                                                             |              | Class A                                                                |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Voltage flicker                                                                                                                                                       | BS EN/EN61000-3-3                                                                             |              | -----                                                                  |              |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | BS EN/EN55035, BS EN/EN60601-1-2                                                                                                                                      |                                                                                               |              |                                                                        |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Parameter                                                                                                                                                             | Standard                                                                                      |              | Test Level / Note                                                      |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ESD                                                                                                                                                                   | BS EN/EN61000-4-2                                                                             |              | Level 4, 15KV air ; Level 4, 8KV contact                               |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RF field susceptibility                                                                                                                                               | BS EN/EN61000-4-3                                                                             |              | Level 3, 10V/m( 80MHz~2.7GHz )<br>Table 9, 9~28V/m( 385MHz~5.78GHz )   |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EFT bursts                                                                                                                                                            | BS EN/EN61000-4-4                                                                             |              | Level 3, 2KV                                                           |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Surge susceptibility                                                                                                                                                  | BS EN/EN61000-4-5                                                                             |              | Level 3, 1KV/Line-Line                                                 |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Conducted susceptibility                                                                                                                                              | BS EN/EN61000-4-6                                                                             |              | Level 3, 10V                                                           |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Magnetic field immunity                                                                                                                                               | BS EN/EN61000-4-8                                                                             |              | Level 4, 30A/m                                                         |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Voltage dip, interruption                                                                                                                                             | BS EN/EN61000-4-11                                                                            |              | 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods |              |
|                          | OTHERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MTBF                                                                                                                                                                  | 7319.8K hrs min.      Telcordia SR-332 (Bellcore) ; 1210.0K hrs min.      MIL-HDBK-217F (25℃) |              |                                                                        |              |
| DIMENSION                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 52.4*27.2*24mm (L*W*H) or 2.06"*1.07"*0.94" inch                                                                                                                      |                                                                                               |              |                                                                        |              |
| PACKING                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.056Kg; 240pcs/14.4Kg/0.94CUFT                                                                                                                                       |                                                                                               |              |                                                                        |              |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. No minimum load required.<br>3. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power.<br>4. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 $\mu$ f & 47 $\mu$ f parallel capacitor.<br>5. Tolerance : includes set up tolerance, line regulation and load regulation.<br>6. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>7. Touch current was measured from primary input to DC output.<br>8. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).<br>9. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                                                                       |                                                                                               |              |                                                                        |              |

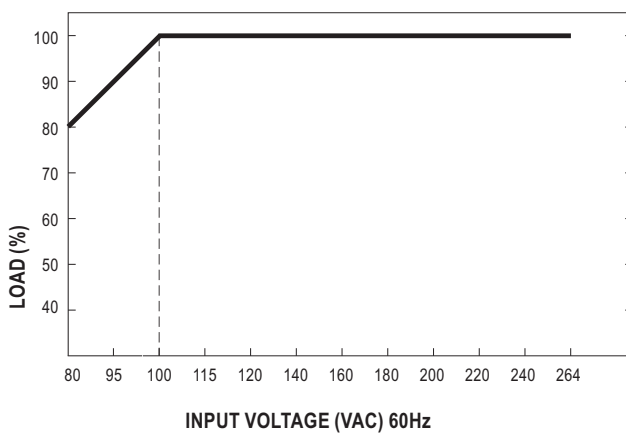
## Block Diagram



## Derating Curve

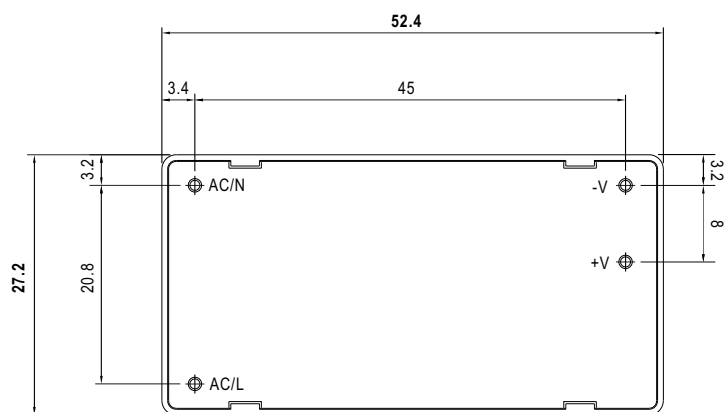


## Output Derating VS Input Voltage

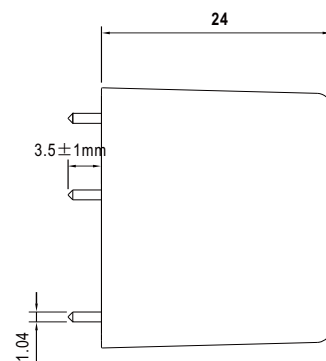


Case No.219A Unit:(mm)

## Mechanical Specification



BOTTOM VIEW



P/N diameter:1.04

SIDE VIEW

## Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>