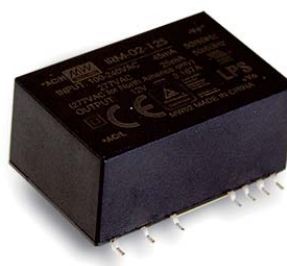




Наличие и актуальные цены на

**IRM-02-9**

<https://www.mean-well.ru/store/IRM-02-9/>



LPS



## Features

- Universal AC input / Full range
- No load power consumption<0.075W
- Compact size
- Comply with BS EN/EN55032 Class B without any additional components
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Isolation Class II
- High reliability, low cost
- 3 years warranty

## Applications

- Industrial electrical equipment
- Mechanical equipment
- Factory automation equipment
- Handheld electronic device

## GTIN CODE

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

## Description

IRM-02 is a 2W miniature (33.7\*22.2\*15mm) AC-DC module-type power supply, ready to be soldered onto the PCB boards of various kinds of electronic instruments or industrial automation equipments. This product allows a universal input voltage range of 85~305VAC. The phenolic case and potted with silicone enhance the heat dissipation and meet the anti-vibration demand up to 5G; moreover, it provides the fundamental resistance to dust and moisture. With the high efficiency up to 77% and the extremely low no-load power consumption below 0.075W, IRM-02 series fulfills the worldwide regulation for the low power consumption requirement for electronics. The entire series is a Class II design (no FG pin), incorporating the built-in EMI filtering components, enabling the compliance with BS EN/EN55032 Class B; the supreme EMC features keep the end electronic units from electromagnetic interference. In addition to module-type model, IRM-02 series also offers the SMD style model.

## Model Encoding

IRM - 02 - 5 S

Blank : PCB mounting style  
S : SMD style

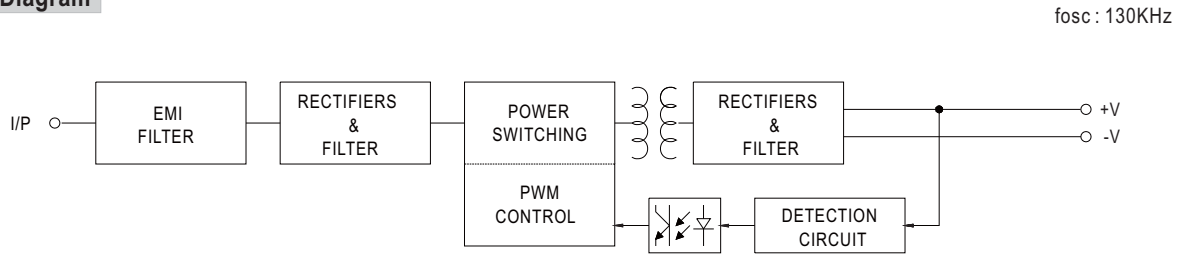
Output voltage  
Output wattage  
Series name



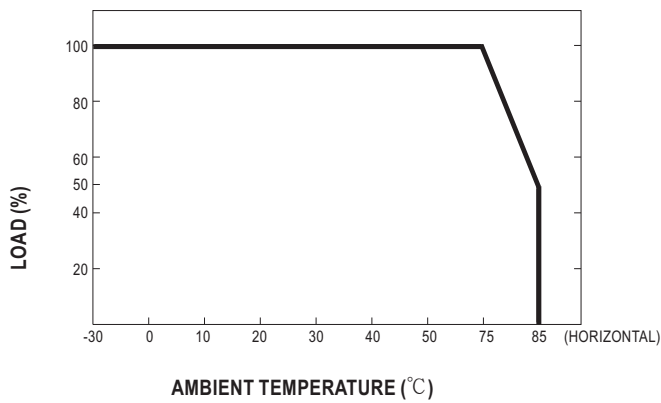
## SPECIFICATION

| MODEL        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | IRM-02-3.3                                                                                                         | IRM-02-5   | IRM-02-9     | IRM-02-12    | IRM-02-15    | IRM-02-24    |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------|--------------|--------------|--------------|--------------|
| OUTPUT       | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3.3V                                                                                                               | 5V         | 9V           | 12V          | 15V          | 24V          |
|              | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 600mA                                                                                                              | 400mA      | 222mA        | 167mA        | 133mA        | 83mA         |
|              | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0 ~ 600mA                                                                                                          | 0 ~ 400mA  | 0 ~ 222mA    | 0 ~ 167mA    | 0 ~ 133mA    | 0 ~ 83mA     |
|              | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2W                                                                                                                 | 2W         | 2W           | 2W           | 2W           | 2W           |
|              | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 150mVp-p                                                                                                           | 150mVp-p   | 150mVp-p     | 150mVp-p     | 200mVp-p     | 200mVp-p     |
|              | VOLTAGE TOLERANCE <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±2.5%                                                                                                              | ±2.5%      | ±2.5%        | ±2.5%        | ±2.5%        | ±2.5%        |
|              | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.5%                                                                                                              | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%        | ±0.5%        |
|              | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.5%                                                                                                              | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%        | ±0.5%        |
|              | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 600ms, 30ms/230VAC      600ms, 30ms/115VAC at full load                                                            |            |              |              |              |              |
|              | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 40ms/230VAC      12ms/115VAC at full load                                                                          |            |              |              |              |              |
| INPUT        | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 85 ~ 305VAC    120 ~ 430VDC                                                                                        |            |              |              |              |              |
|              | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 47 ~ 63Hz                                                                                                          |            |              |              |              |              |
|              | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 66%                                                                                                                | 70%        | 72%          | 74%          | 75%          | 77%          |
|              | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45mA/115VAC    30mA/230VAC    25mA/277VAC                                                                          |            |              |              |              |              |
|              | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5A/115VAC    10A/230VAC                                                                                            |            |              |              |              |              |
|              | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | < 0.25mA/277VAC                                                                                                    |            |              |              |              |              |
| PROTECTION   | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ≥110% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |            |              |              |              |              |
|              | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.8 ~ 4.9V                                                                                                         | 5.2 ~ 6.8V | 10.3 ~ 12.2V | 12.6 ~ 16.2V | 15.7 ~ 20.3V | 25.2 ~ 32.4V |
|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Protection type : Shut off o/p voltage, clamping by zener diode                                                    |            |              |              |              |              |
|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                    |            |              |              |              |              |
| ENVIRONMENT  | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -30 ~ +85℃ (Refer to "Derating Curve")                                                                             |            |              |              |              |              |
|              | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20 ~ 90% RH non-condensing                                                                                         |            |              |              |              |              |
|              | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -40 ~ +100℃, 10 ~ 95% RH                                                                                           |            |              |              |              |              |
|              | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±0.03%/℃ (0 ~ 75℃)                                                                                                 |            |              |              |              |              |
|              | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes                                            |            |              |              |              |              |
|              | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Wave soldering: 265℃,5s (max.); Manual soldering: 390℃,3s (max.); Reflow soldering(SMD style): 240℃,10s (max.)     |            |              |              |              |              |
| SAFETY & EMC | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004, BSMI CNS14336-1 approved, Design refer to BS EN/EN61558-1/-2-16     |            |              |              |              |              |
|              | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I/P-O/P:3KVAC                                                                                                      |            |              |              |              |              |
|              | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH                                                                           |            |              |              |              |              |
|              | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020, CNS13438 Class B               |            |              |              |              |              |
|              | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, heavy industry level (surge L-N : 1KV), EAC TP TC 020 |            |              |              |              |              |
| OTHERS       | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13571.4K hrs min.    Telcordia SR-332 (Bellcore) ; 1960.2K hrs min.    MIL-HDBK-217F (25℃)                         |            |              |              |              |              |
|              | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PCB mounting style : 33.7*22.2*15mm (L*W*H)      SMD style : 33.7*22.2*16mm (L*W*H)                                |            |              |              |              |              |
|              | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PCB mounting style : 0.024Kg; 640pcs/ 16.3 Kg/ 0.84CUFT      SMD style : 0.024Kg; 640 pcs/ 16.3 Kg/ 0.84CUFT       |            |              |              |              |              |
| NOTE         | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. 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>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                    |            |              |              |              |              |

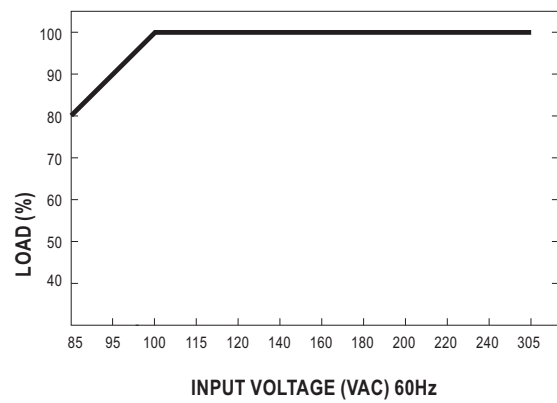
## Block Diagram



## Derating Curve



## Static Characteristics

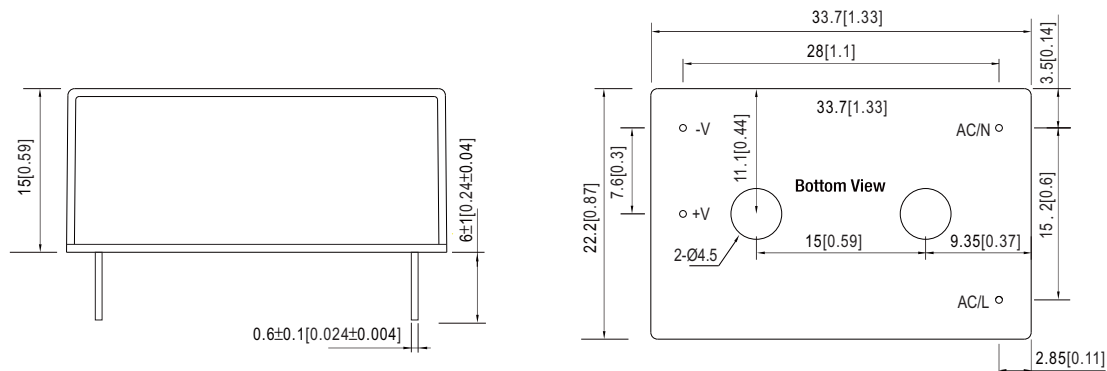


## ■ Mechanical Specification

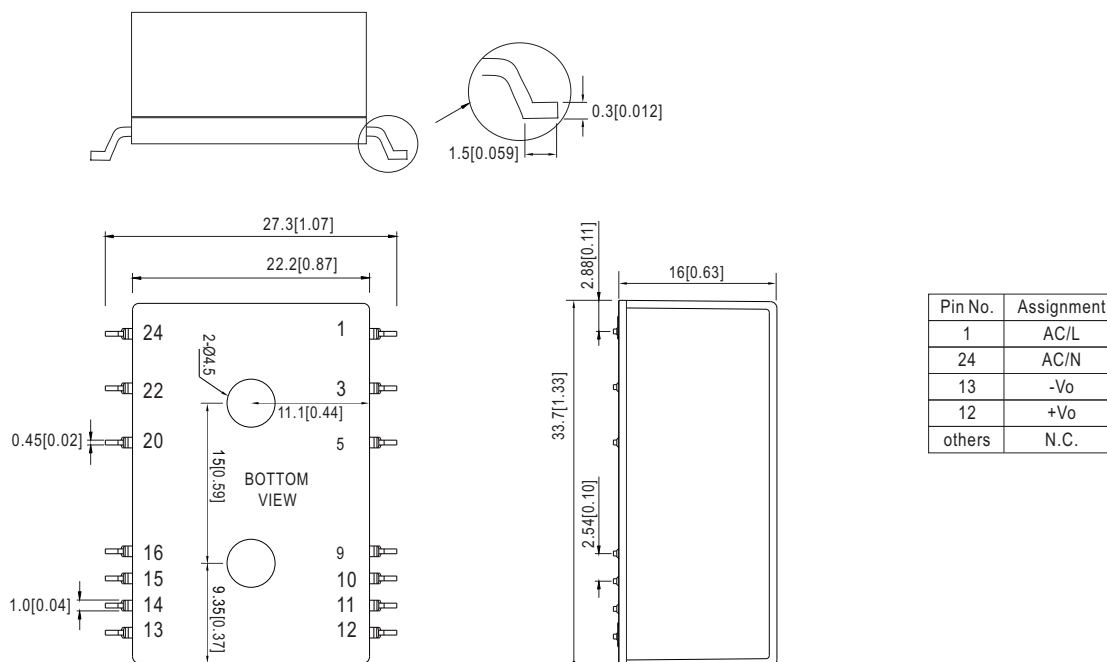
(Unit:mm[inch], Tolerance: $\pm 0.5[\pm 0.02]$ )

Case No.IRM02

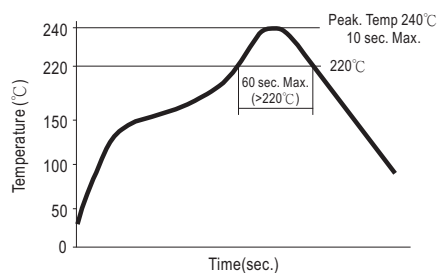
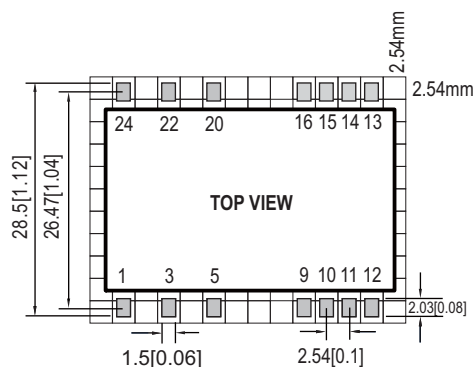
© PCB mounting style



© SMD style



■ Recommended PCB Layout (for SMD style) (Reflow soldering method available)



Remark : The curve applies only to the " Hot Air Reflow Soldering"

## ■ Installation Manual

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