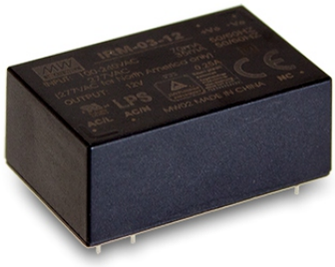
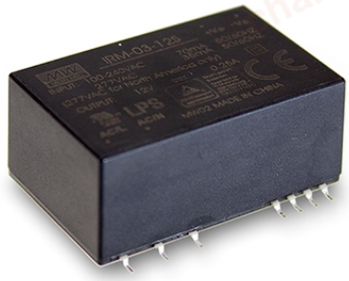
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# IRM-03 series

3W Single Output Encapsulated Type





## Features

- Universal AC input / Full range
- No load power consumption<0.075W
- Compact size
- Comply with EN55022 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

## Description

IRM-03 is a 3W miniature (37*24*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 the fully-potted 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 80% and the extremely low no-load power consumption below 0.075W, IRM-03 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 EN55022 Class B; the supreme EMC features keep the end electronic units from electromagnetic interference. In addition to module-type model, IRM-03 series also offers the SMD style model.

## Model Encoding

IRM - 03 - 5 S

- Blank : PCB mounting style
- S : SMD style

- Output voltage
- Output wattage
- Series name

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3W Single Output Encapsulated Type

# IRM-03 series

## SPECIFICATION

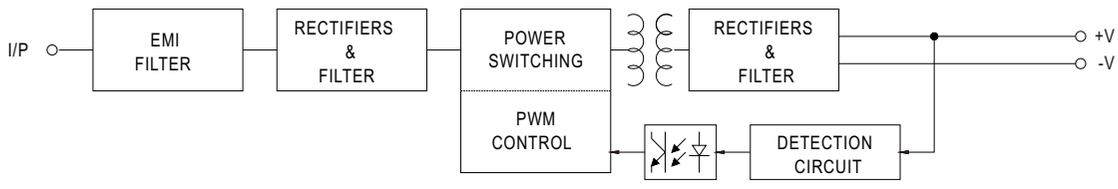
| MODEL | | IRM-03-3.3 | IRM-03-5 | IRM-03-9 | IRM-03-12 | IRM-03-15 | IRM-03-24 |
|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 9V | 12V | 15V | 24V |
| | RATED CURRENT | 900mA | 600mA | 333mA | 250mA | 200mA | 125mA |
| | CURRENT RANGE | 0 ~ 900mA | 0 ~ 600mA | 0 ~ 333mA | 0 ~ 250mA | 0 ~ 200mA | 0 ~ 125mA |
| | RATED POWER | 3W | 3W | 3W | 3W | 3W | 3W |
| | RIPPLE & NOISE (max.) Note.2 | 100mVp-p | 100mVp-p | 100mVp-p | 150mVp-p | 200mVp-p | 240mVp-p |
| | VOLTAGE TOLERANCE Note.3 | ±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 | ±1.0% | ±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 8ms/115VAC at full load | | | | | |
| INPUT | VOLTAGE RANGE | 85 ~ 305VAC 120~430VDC | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | |
| | EFFICIENCY (Typ.) | 68% | 72% | 77% | 78% | 78% | 80% |
| | AC CURRENT (Typ.) | 70mA/115VAC 40mA/230VAC 35mA/277VAC | | | | | |
| | INRUSH CURRENT (Typ.) | 10A/115VAC 20A/230VAC | | | | | |
| | LEAKAGE CURRENT | < 0.25mA/277VAC | | | | | |
| PROTECTION | OVERLOAD | 105%~260% rated output power | | | | | |
| | | 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 | 15.75 ~ 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 ~ 50℃) | | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | | |
| | LEAD TEMPERATURE | 260℃,10s (max.) | | | | | |
| SAFETY & EMC | SAFETY STANDARDS | UL60950-1, TUV EN60950, TUV EN60335-1 approved, Meet IEC60601-1, 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 EN55022 (CISPR22) Class B, EN61000-3-2,-3 | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, heavy industry level (surge L-N : 1KV), criteria A | | | | | |
| OTHERS | MTBF | 2137.6Khrs min. MIL-HDBK-217F (25℃) | | | | | |
| | DIMENSION | PCB mounting style : 37*24*15mm (L*W*H) SMD style : 37*24*16mm (L*W*H) | | | | | |
| | PACKING | PCB mounting style : 0.02Kg;560pcs/12.8Kg/0.96CUFT SMD style :0.02Kg;560pcs/12.8Kg/0.96CUFT | | | | | |
| 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. | | | | | | |

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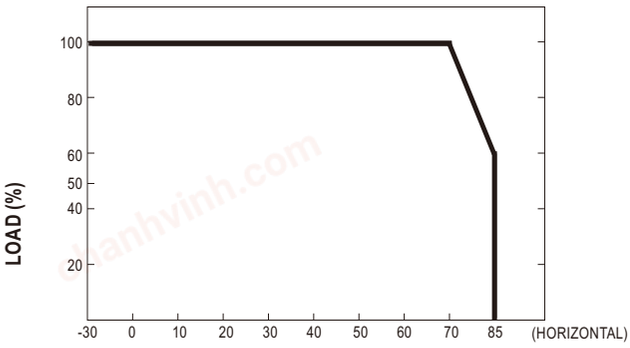


## ■ Block Diagram

fosc : 130KHz

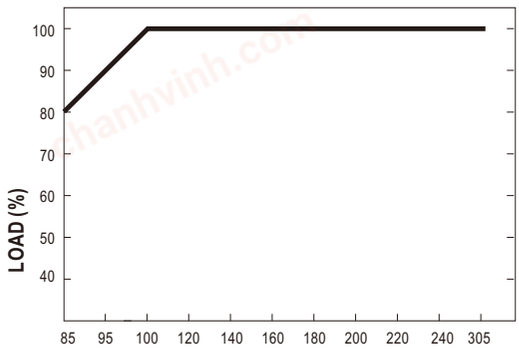



## ■ Derating Curve




AMBIENT TEMPERATURE (℃)

## ■ Output Derating VS Input Voltage




INPUT VOLTAGE (VAC) 60Hz

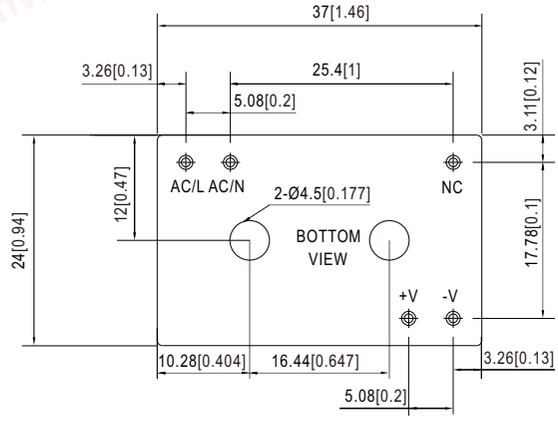
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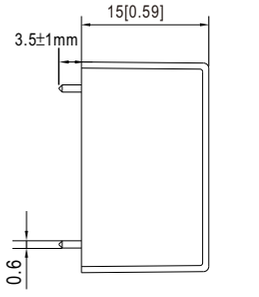
# 3W Single Output Encapsulated Type — IRM-03 series

## ■ Mechanical Specification

Case No.IRM03 Unit:mm[inch]
Tolerance:±0.5[±0.02]
unless otherwise specified

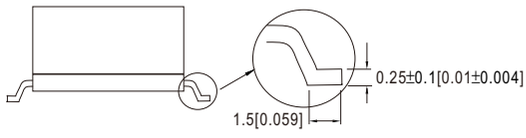
• PCB mounting style

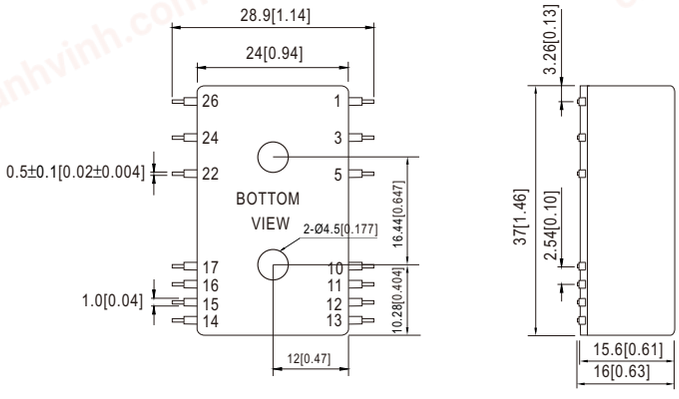



PIN diameter:0.6±0.1[0.024±0.004]

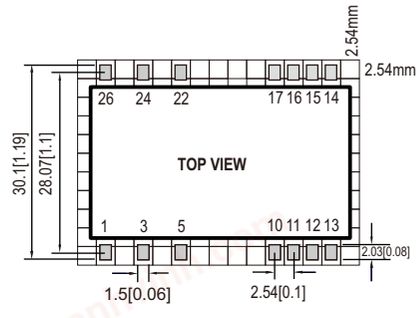
• SMD style

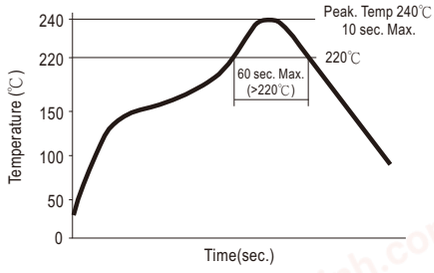



| Pin NO. | Assignment |
|---|---|
| 1 | AC/L |
| 3 | AC/N |
| 14 | -Vo |
| 16 | +Vo |
| others | NC |

## ■ 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