



## ■ 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

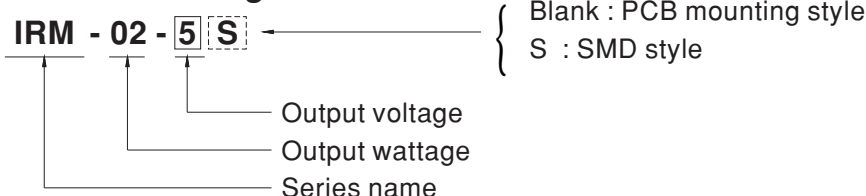
## ■ GTIN CODE

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



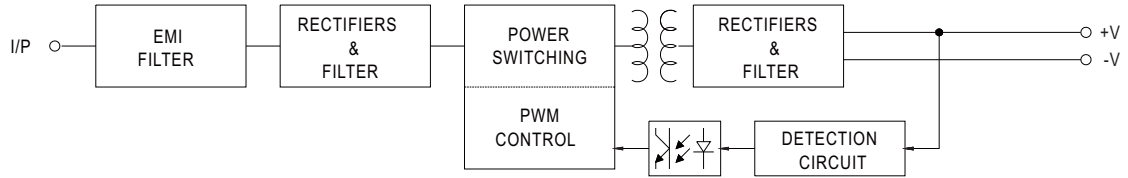


## SPECIFICATION

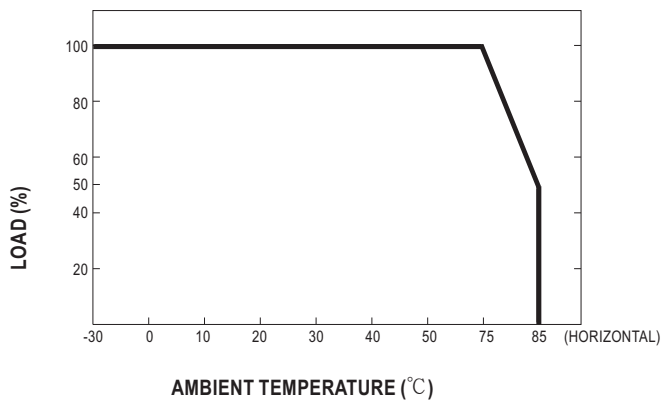
| MODEL        |   | IRM-02-3.3   | IRM-02-5   | IRM-02-9     | IRM-02-12    | IRM-02-15    | IRM-02-24    |
|--------------|---|--|------------|--------------|--------------|--------------|--------------|
| OUTPUT       | DC VOLTAGE  | 3.3V   | 5V         | 9V           | 12V          | 15V          | 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.) Note.2  | 150mVp-p   | 150mVp-p   | 150mVp-p     | 150mVp-p     | 200mVp-p     | 200mVp-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   | ±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 |
| ENVIRONMENT  | WORKING TEMP.   | -30 ~ +85°C (Refer to "Derating Curve")  |            |              |              |              |              |
|              | WORKING HUMIDITY  | 20 ~ 90% RH non-condensing   |            |              |              |              |              |
|              | STORAGE TEMP., HUMIDITY   | -40 ~ +100°C, 10 ~ 95% RH  |            |              |              |              |              |
|              | TEMP. COEFFICIENT   | ±0.03%/°C (0 ~ 75°C)   |            |              |              |              |              |
|              | VIBRATION   | 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes  |            |              |              |              |              |
|              | SOLDERING TEMPERATURE   | Wave soldering: 265°C, 5s (max.); Manual soldering: 390°C, 3s (max.); Reflow soldering(SMD style): 240°C, 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°C / 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°C)                          |            |              |              |              |              |
|              | 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         | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |  |            |              |              |              |              |

■ Block Diagram

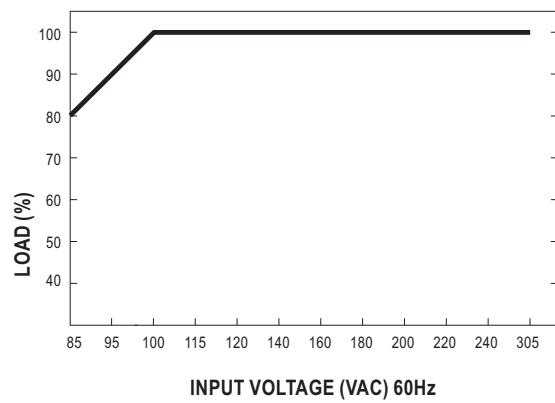
fosc: 130KHz



■ Derating Curve



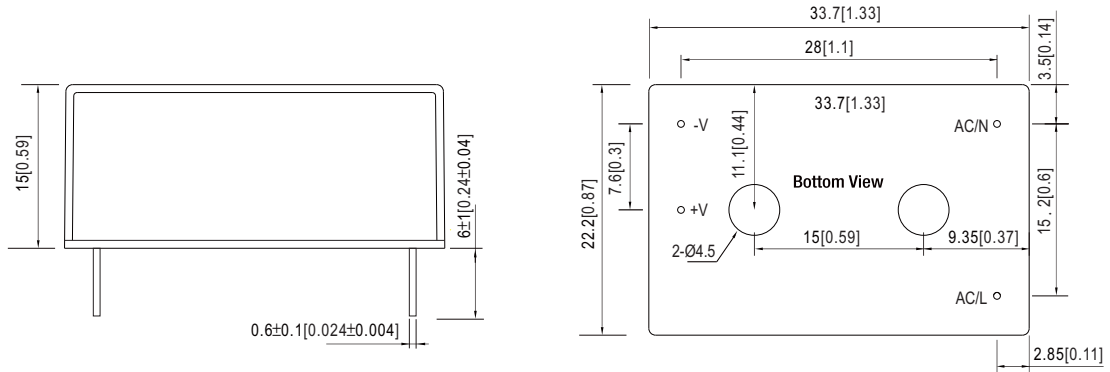
■ Static Characteristics



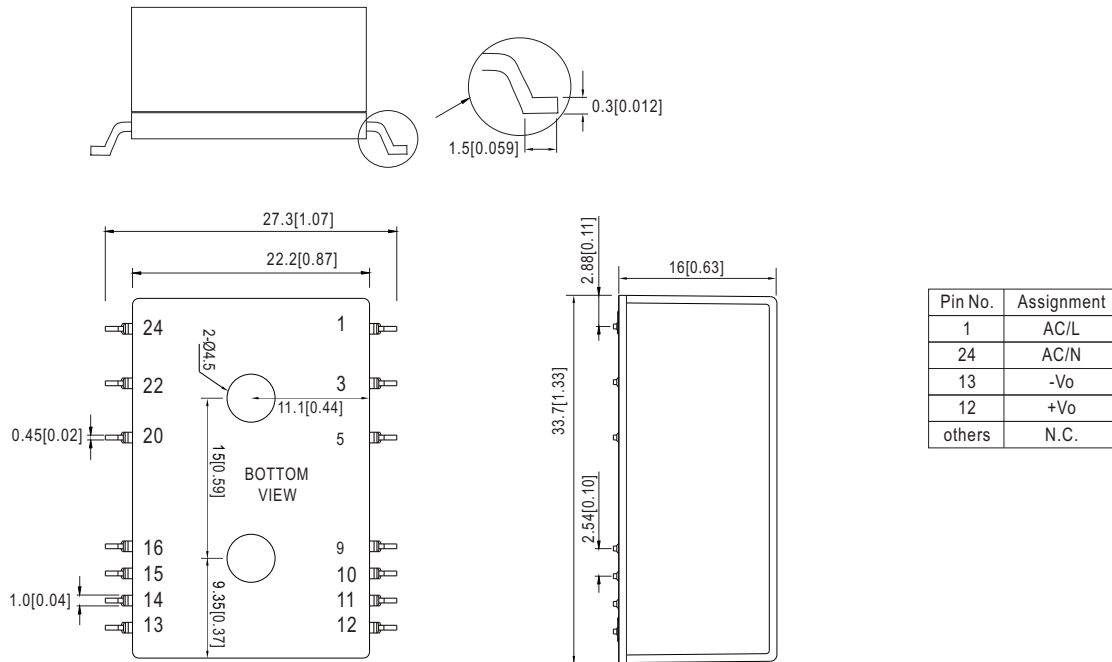
**Mechanical Specification**

Case No. IRM02  
Unit:mm[inch]

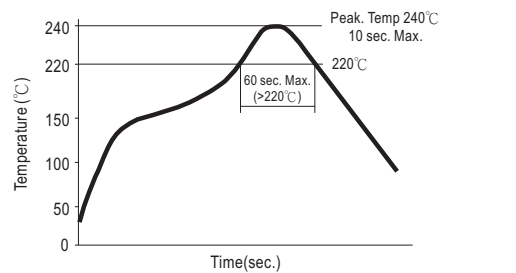
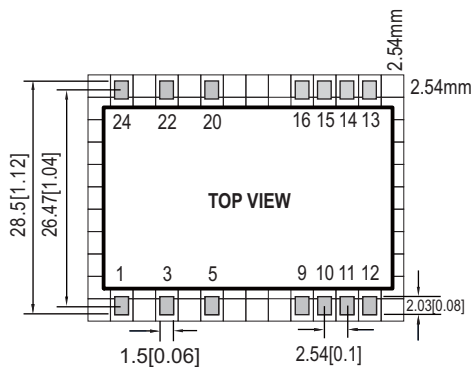
◎ PCB mounting style



◎ 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>