



■ 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

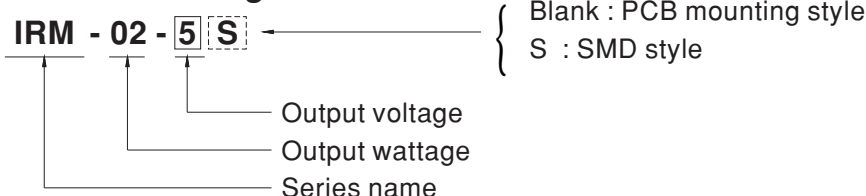
■ GTIN CODE

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



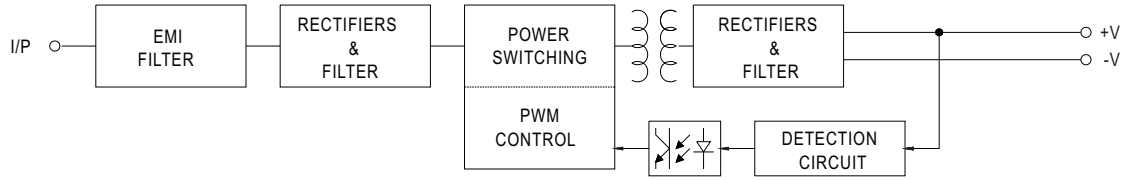


SPECIFICATION

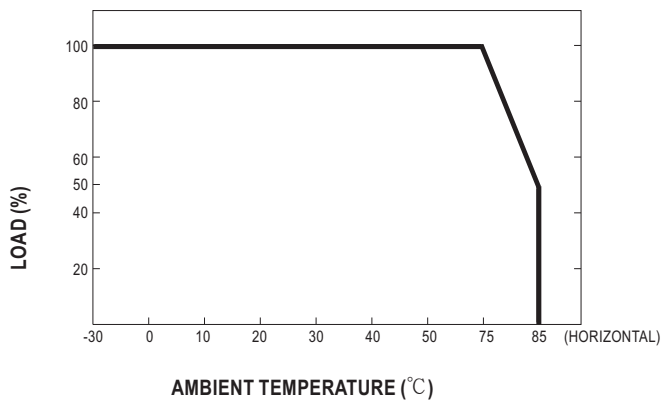
| MODEL | | IRM-02-3.3 | IRM-02-5 | IRM-02-9 | IRM-02-12 | IRM-02-15 | IRM-02-24 |
|--------------|---|--|------------|--------------|--------------|--------------|--------------|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 9V | 12V | 15V | 24V |
| | RATED CURRENT | 600mA | 400mA | 222mA | 167mA | 133mA | 83mA |
| | 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 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 & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 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 https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | |

Block Diagram

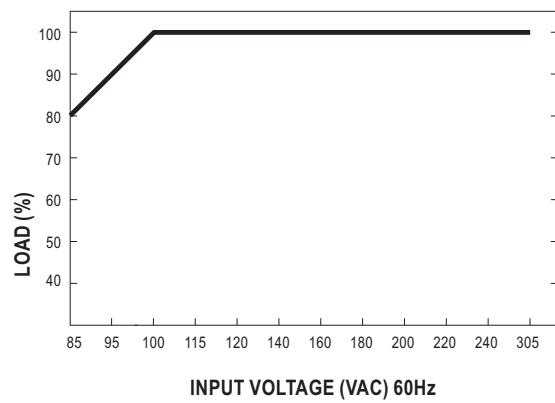
fosc: 130KHz



Derating Curve



Static Characteristics

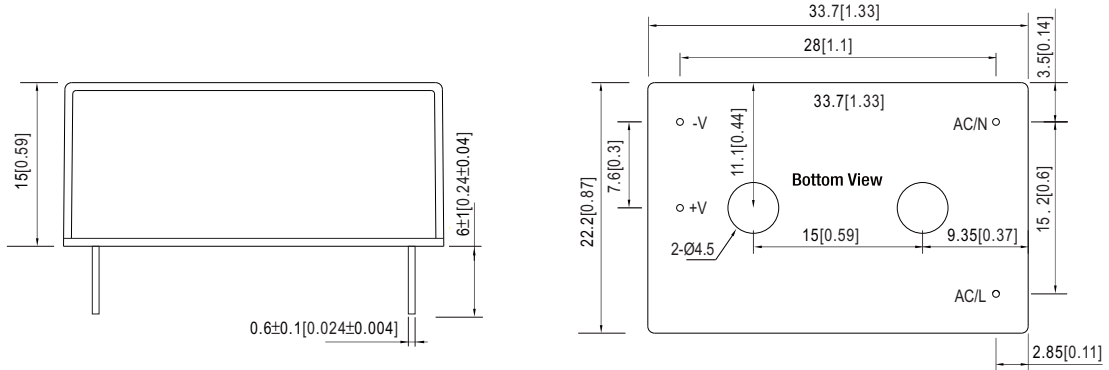


Mechanical Specification

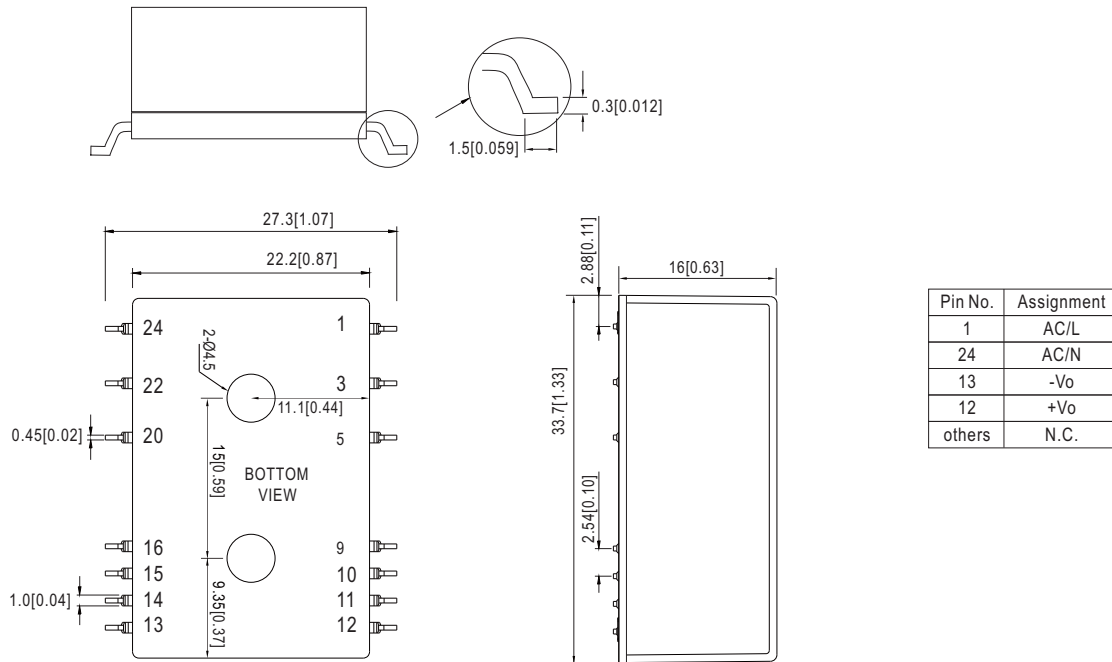
(Unit:mm[inch], Tolerance: $\pm 0.5[\pm 0.02]$)

Case No.IRM02

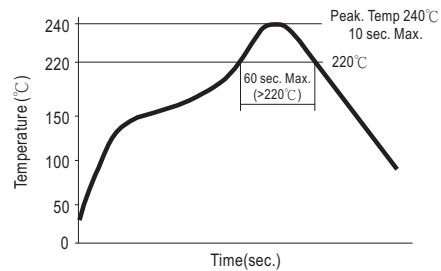
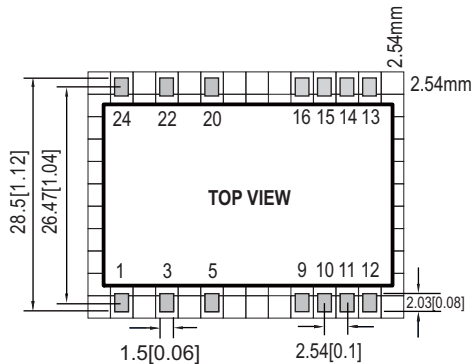
☉ PCB mounting style



☉ 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>