



(IRM-90)



(IRM-90-xxST)



UL62368-1

 CB
IEC62368-1

 EAC
TPTC004

CE

 UK
CA


■ Features

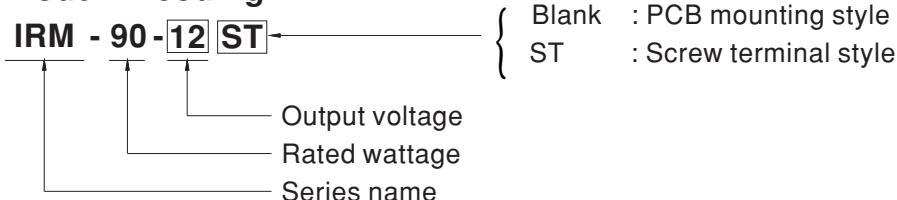
- 3.43"x2.05"compact size
- PCB,chassis or screw terminal mounting version
- Universal input 80~305VAC
- No load power consumption<0.21W
- EMI BS EN/EN55032 ClassB without additional components
- Wide operating temp. rage -30~80°C
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Isolation Class II
- Over voltage category III
- Operating attitude up to 4000 meters (Note.7)
- 100W peak(10 sec.)
- 3 years warranty

■ Description

IRM-90 is a 90W miniature (87*52*29.5mm) AC-DC PCB-mount 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 the universal input voltage range of 80~305VAC. The 94V-0 flame retardant plastic case and the fully-potted silicone enhance the heat dissipation and meet the anti-vibration demand up to 2~5G anti-vibration by model; moreover, it provides the fundamental resistance to dust and moisture.

With the high efficiency up to 93% and the extremely low no-load power consumption below 0.21W, IRM-90 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 from electromagnetic interference. In addition to the PCB mounting style model, IRM-90 series also offers the screw terminal style model (ST).

■ Model Encoding



■ Applications

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

SPECIFICATION

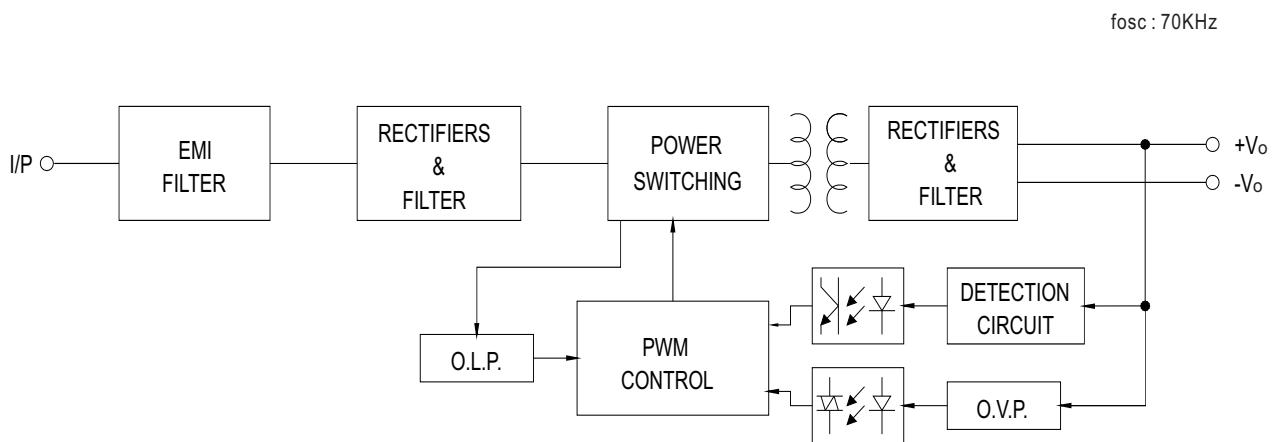
MODEL	IRM-90-12 <input type="checkbox"/>	IRM-90-15 <input type="checkbox"/>	IRM-90-24 <input type="checkbox"/>	IRM-90-48 <input type="checkbox"/>			
OUTPUT	DC VOLTAGE	12V	15V	24V			
	CURRENT	Peak(10 sec.) Convection	7.37A 6.23A 5.67A	4.13A 3.75A 1.88A			
	RATED POWER	Peak(10 sec.) ^{Note.2} Convection	88.4W 80.4W	93.5W 85.05W			
	RIPPLE & NOISE (max.) Note.3	120mVp-p	150mVp-p	200mVp-p			
	VOLTAGE TOLERANCE Note.4	±2.0%	±2.0%	±2.0%			
	LINE REGULATION	±0.5%	±0.5%	±0.5%			
	LOAD REGULATION	±1.0%	±0.5%	±0.5%			
	SETUP, RISE TIME	1000ms, 30ms/230VAC	1000ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	30ms/230VAC	10ms/115VAC at full load				
	VOLTAGE RANGE Note.5	80 ~ 305VAC	113 ~ 431VDC				
INPUT	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	92%	92.5%	93%	93%		
	AC CURRENT (Typ.)	1.9A/115VAC	1.1A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START	30A/115VAC	65A/230VAC			
	LEAKAGE CURRENT (max.) Note.6	< 0.25mA/240VAC					
PROTECTION	OVERLOAD	115% ~ 160% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	12.6 ~ 16.2V	15.8 ~ 20.3V	25.2 ~ 32.4V	50.4 ~ 64.8V		
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-30 ~ +80°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP.	-40 ~ +85°C					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	SOLDERING TEMPERATURE	260°C ±5°C/10sec.max.					
	VIBRATION	Blank:10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes ST:10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC (Note 8)	OPERATING ALTITUDE Note.7	III; EN62368-1;altitude up to 2000 meters					
	SAFETY STANDARDS	IEC62368-1, UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved; Design refer to BS EN/EN60335-1(by request)					
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC					
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH					
	EMC EMISSION	Parameter	Standard	Test Level / Note			
		Conducted	BS EN/EN55032 (CISPR32)	Class B			
		Radiated	BS EN/EN55032 (CISPR32)	Class B			
		Harmonic Current	BS EN/EN61000-3-2	Class A			
	EMC IMMUNITY	Voltage Flicker	BS EN/EN61000-3-3	-----			
		BS EN/EN5035, BS EN/EN61000-6-2					
		Parameter	Standard	Test Level / Note			
		ESD	BS EN/EN61000-4-2	Level 3, 8KV air; Level 2, 4KV contact, criteria A			
		RF field susceptibility	BS EN/EN61000-4-3	Level 3, criteria A			
		EFT bursts	BS EN/EN61000-4-4	Level 3, criteria A			
		Surge susceptibility	BS EN/EN61000-4-5	Level 4, 2KV/L-N, criteria A			
		Conducted susceptibility	BS EN/EN61000-4-6	Level 3, criteria A			
		Magnetic field immunity	BS EN/EN61000-4-8	Level 4, criteria A			
OTHERS	Voltage dip, interruption	BS EN/EN61000-4-11					
	MTBF	310Khrs min. MIL-HDBK-217F (25°C); 1694.28Khrs min. Telcordia TR/SR-332 (Bellcore) (25°C)					
	DIMENSION	PCB mounting style : 87*52*29.5mm (L*W*H) Screw terminal style : 109*52*33.5mm (L*W*H)					
NOTE	PACKING	PCB mounting style : 0.197Kg;60pcs/11.8Kg/0.94CUFT Screw terminal style : 0.219Kg;50pcs/12Kg/0.56CUFT					
	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. 3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μf & 47 μf parallel capacitor. 4. Tolerance : includes set up tolerance, line regulation and load regulation. 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. Leakage current was measured from primary input to DC output. 7. 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). 8. 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." (as available on http://www.meanwell.com) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx						



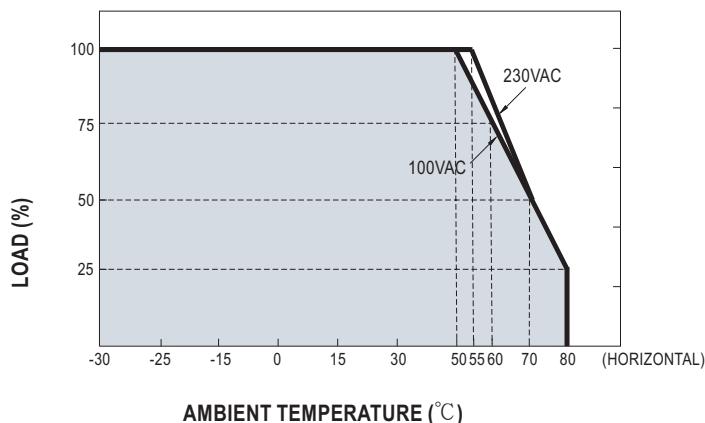
90W AC-DC PCB-Mount Green Power Module

IRM-90 series

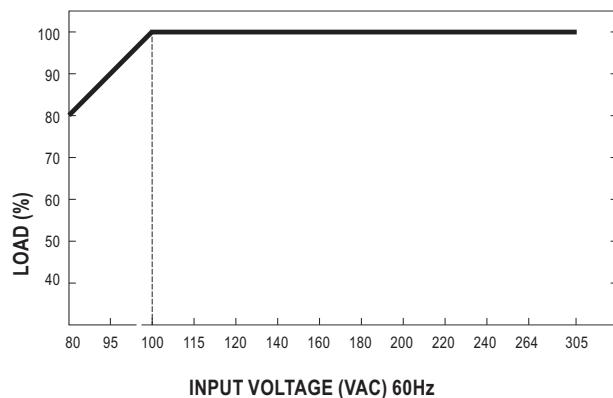
■ Block Diagram



■ Derating Curve



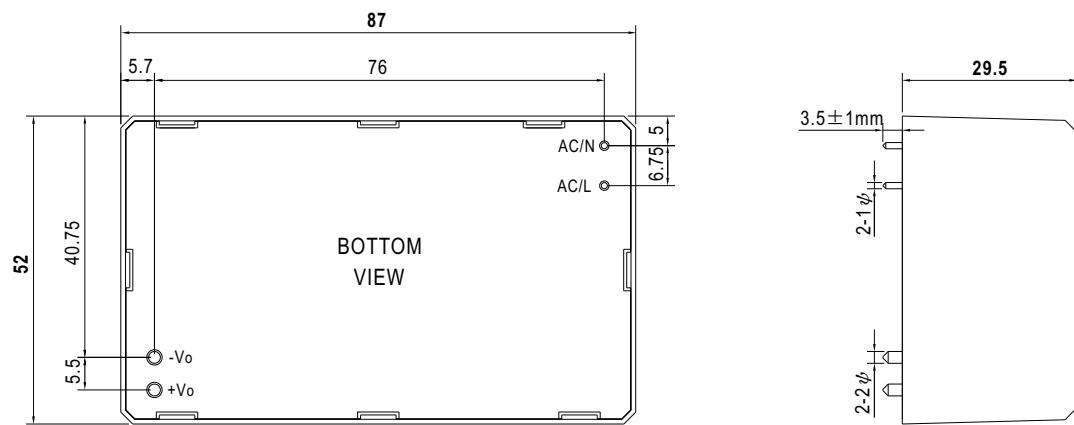
■ Output Derating VS Input Voltage



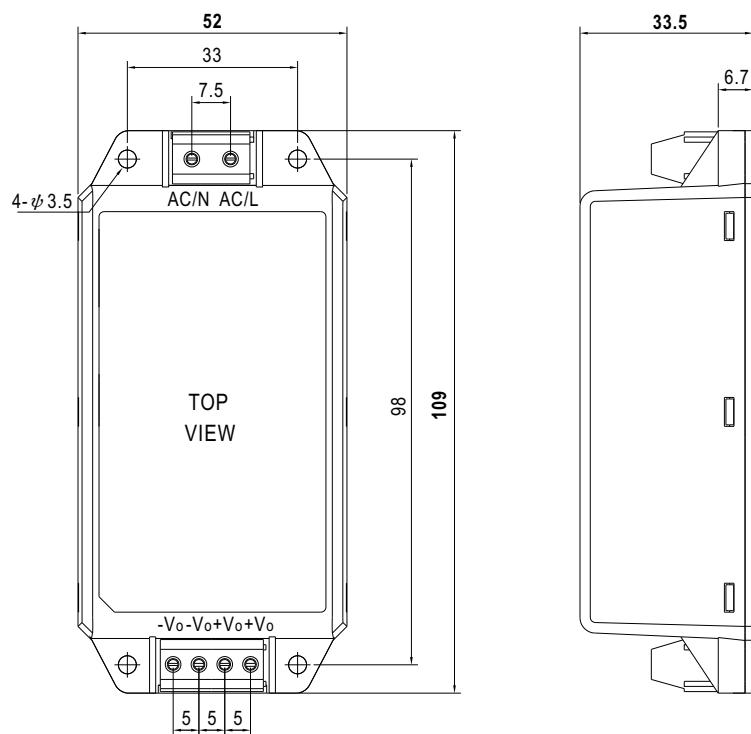
■ Mechanical Specification

Case No.IRM60 Unit:mm

- PCB mounting style (IRM-90)


 AC/L, AC/N P/N diameter: 1 ϕ
 +Vo, -Vo P/N diameter: 2 ϕ

- Screw terminal style (IRM-90-xxST)


■ Installation Manual

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