



20W AC-DC PCB-Mount Green Power Module

IRM-20 series



■ Features

- 2.06"x1.07"compact size
- Universal input 85~305VAC
- No load power consumption<0.1W
- EMI Class B without additional components
- Wide operating temp. range -30~70°C
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Isolation Class II
- Pass LPS
- 3 years warranty

■ Applications

- Industrial electrical equipment
- Mechanical equipment
- Factory automation equipment
- Hand-held electronic device

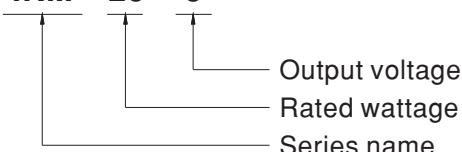
■ Description

IRM-20 is a 20W miniature (52.4*27.2*24mm) 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 the universal input voltage range of 85~305VAC. The 94V-0 flame retardant plastic case and the fully-potted silicone enhance the heat dissipation and meet the anti-vibration demand up to 2G; moreover, it provides the fundamental resistance to dust and moisture.

With the high efficiency up to 85% and the extremely low no-load power consumption below 0.1W, IRM-20 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.

■ Model Encoding

IRM - 20 - 5



SPECIFICATION

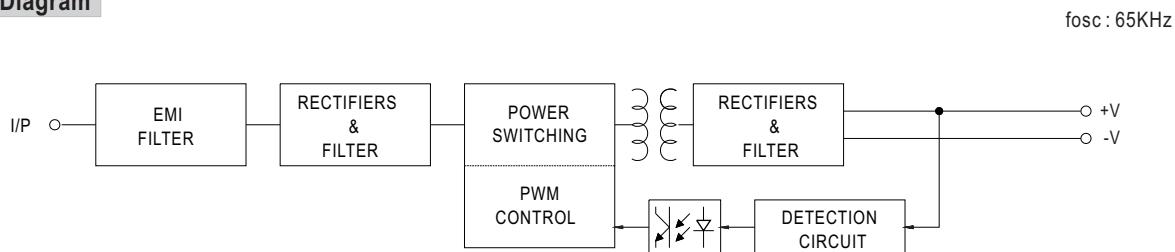
MODEL	IRM-20-3.3	IRM-20-5	IRM-20-12	IRM-20-15	IRM-20-24						
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V						
	RATED CURRENT	4.5A	4A	1.8A	1.4A						
	CURRENT RANGE	0 ~ 4.5A	0 ~ 4A	0 ~ 1.8A	0 ~ 1.4A						
	RATED POWER	14.85W	20W	21.6W	21W						
	ripple & noise (max.) Note.2	200mVp-p	200mVp-p	200mVp-p	200mVp-p						
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.5%	±2.5%	±2.5%						
	LINE REGULATION	±0.5%	±0.5%	±0.3%	±0.3%						
	LOAD REGULATION	±1%	±1%	±0.5%	±0.5%						
	SETUP, RISE TIME	1000ms, 20ms/230VAC	1000ms, 20ms/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 ~ 440Hz									
	EFFICIENCY (Typ.)	76%	79%	84%	84%						
	AC CURRENT (Typ.)	0.6A/115VAC	0.4A/230VAC	0.3A/277VAC							
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC	40A/230VAC								
	LEAKAGE CURRENT	< 0.25mA/277VAC									
PROTECTION	OVERLOAD	115%~160% rated output power									
		Protection type : Hiccup mode, recovers automatically after fault condition is removed									
	OVER VOLTAGE	3.8 ~ 4.46V	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V						
ENVIRONMENT	Protection type : Shut off o/p voltage, clamping by zener diode										
	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")									
	WORKING HUMIDITY	20 ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH									
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)									
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes									
	LEAD TEMPERATURE	260±5°C, 5s (max.)									
SAFETY & EMC (Note.5)	OPERATING ALTITUDE Note.4	2000 meters									
	SAFETY STANDARDS	IEC62368-1, UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004, BSMI CNS14336-1 approved									
	WITHSTAND VOLTAGE	I/P-O/P:3kVAC									
	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), CNS13438	Class B							
		Radiated	BS EN/EN55032(CISPR32), CNS13438	Class B							
		Harmonic Current (Note 5)	BS EN/EN61000-3-2	Class A							
		Voltage Flicker	BS EN/EN61000-3-3	-----							
	EMC IMMUNITY	BS EN/EN55035, 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							
		Radiated Susceptibility	BS EN/EN61000-4-3	Level 3, criteria A							
		EFT/Burst	BS EN/EN61000-4-4	Level 3, criteria A							
		Surge	BS EN/EN61000-4-5	Level 4, 2kV/L-N, criteria A							
		Conducted	BS EN/EN61000-4-6	Level 3, criteria A							
		Magnetic Field	BS EN/EN61000-4-8	Level 4, criteria A							
	Voltage Dips and interruptions		BS EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods							
OTHERS	MTBF	970.3Khrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	52.4*27.2*24mm (L*W*H)									
	PACKING	0.05Kg/240pcs/13Kg/0.94CUFT									
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 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). 5. The power supply is considered as an independent unit ,but the final equipment still need to re-confirm that the whole system complies with the 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											



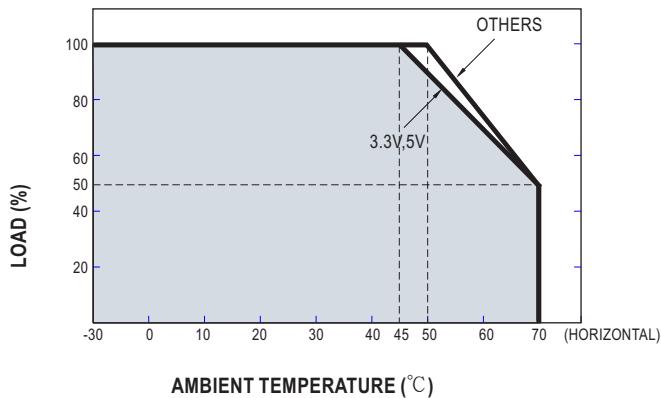
20W AC-DC PCB-Mount Green Power Module

IRM-20 series

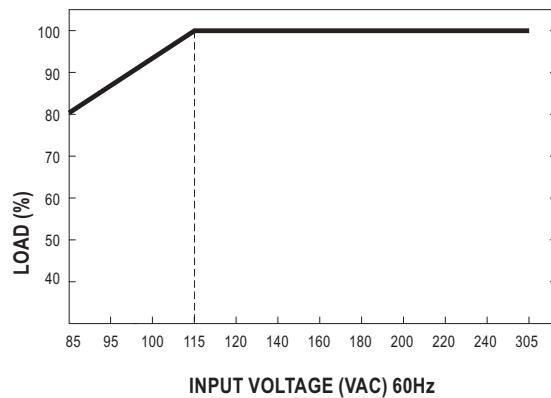
■ Block Diagram



■ Derating Curve

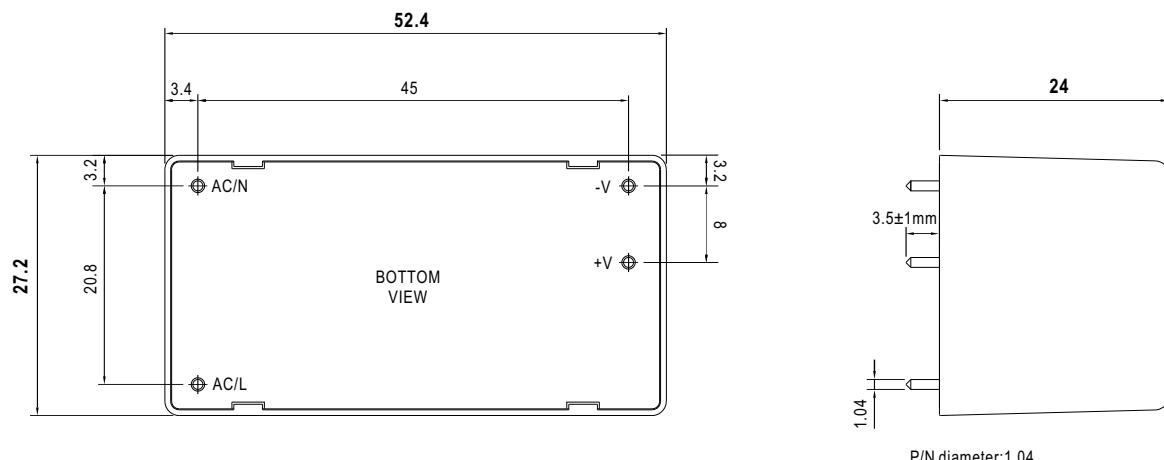


■ Output Derating VS Input Voltage



■ Mechanical Specification

Case No.219A Unit:(mm)



■ Installation Manual

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