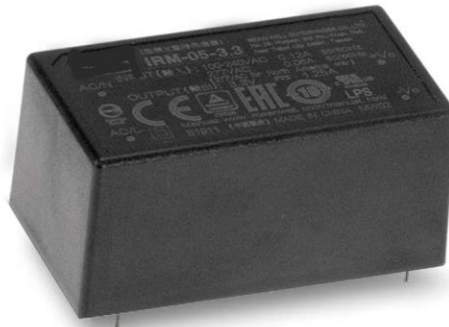




E-Star Power Development Co., Ltd. (E-STAR)  
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 22069, Taiwan (R.O.C.)  
 Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

**5W Open Frame type Single output power supply > IRM-05**



**Features**

- 1.8"x1" 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-05 is a 5W miniature (45.7\*25.4\*21.5mm) 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 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 0.1W, IRM-05 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 EN55032 Class B; the supreme EMC features keep the end electronic units from electromagnetic interference.

**Model Encoding**

**IRM - 05 - 5**

↑      ↑      ↑  
 Output voltage  
 Rated wattage  
 Series name



**5W Open Frame type Single output power supply > IRM-05**

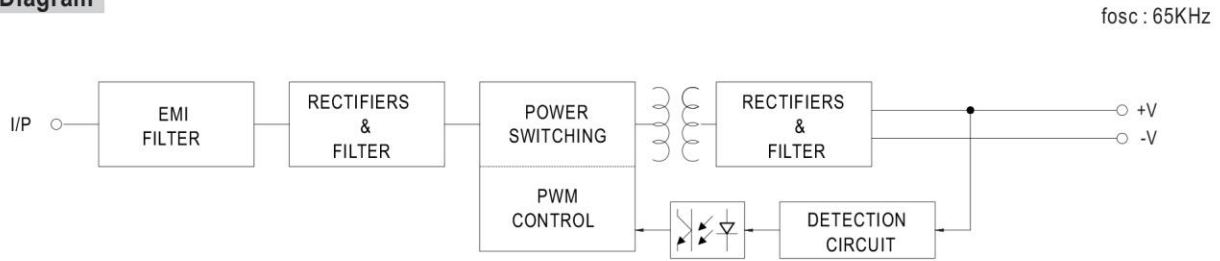
**SPECIFICATION**

MODEL		IRM-05-3.3	IRM-05-5	IRM-05-12	IRM-05-15	IRM-05-24	
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V	24V	
	RATED CURRENT	1.25A	1A	0.42A	0.33A	0.23A	
	CURRENT RANGE	0 ~ 1.25A	0 ~ 1A	0 ~ 0.42A	0 ~ 0.33A	0 ~ 0.23A	
	RATED POWER	4.125W	5W	5.04W	4.95W	5.52W	
	RIPPLE & NOISE (max.) Note.2	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.5%	±2.5%	±2.5%	±2.5%	
	LINE REGULATION	±0.3%	±0.3%	±0.3%	±0.3%	±0.3%	
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	SETUP, RISE TIME Note.4	600ms, 30ms at full load					
HOLD UP TIME (Typ.)	80ms/230VAC	15ms/115VAC at full load					
INPUT	VOLTAGE RANGE	85 ~ 305VAC	120 ~ 430VDC				
	FREQUENCY RANGE	47 ~ 440Hz					
	EFFICIENCY (Typ.)	68%	71%	75%	75%	77%	
	AC CURRENT (Typ.)	0.12A/115VAC	0.08A/230VAC	0.06A/277VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC		40A/230VAC			
	LEAKAGE CURRENT	< 0.25mA/277VAC					
PROTECTION	OVERLOAD	115% ~ 260% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	3.8 ~ 4.95V	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	
ENVIRONMENT	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, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes					
	LEAD TEMPERATURE	260±5°C, 5s (max.)					
	OPERATING ALTITUDE Note.5	2000 meters					
SAFETY & EMC (Note.6)	SAFETY STANDARDS	IEC62368-1, UL62368-1, TUV 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	EN55032(CISPR32), CNS13438		Class B		
		Radiated	EN55032(CISPR32), CNS13438		Class B		
		Harmonic Current (Note 5)	EN61000-3-2		Class A		
		Voltage Flicker	EN61000-3-3		-----		
	EMC IMMUNITY	EN55035, EN61000-6-2					
		Parameter	Standard		Test Level / Note		
ESD		EN61000-4-2		Level 3, 8KV air; Level 2, 4KV contact, criteria A			
Radiated Susceptibility		EN61000-4-3		Level 3, criteria A			
EFT/Burest		EN61000-4-4		Level 3, criteria A			
Surge		EN61000-4-5		Level 3, 1KV/L-N, criteria A			
Conducted		EN61000-4-6		Level 3, criteria A			
Magnetic Field		EN61000-4-8		Level 4, criteria A			
Voltage Dips and interruptions		EN61000-4-11		>95% dip 0. 5 periods, 30% dip 25 periods, >95% interruptions 250 periods			
OTHERS	MTBF	1495.8Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	45.7*25.4*21.5 mm (L*W*H)					
	PACKING	0.033Kg;270pcs/ 9.8Kg/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. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 5. 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). 6. 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."						

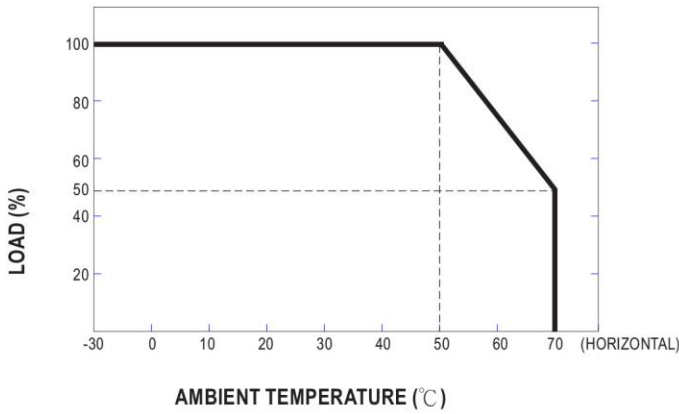


**5W Open Frame type Single output power supply > IRM-05**

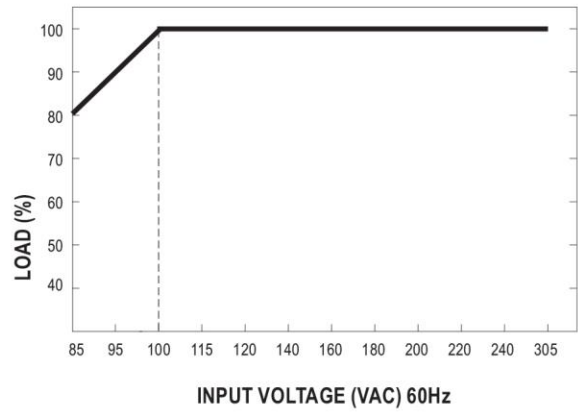
**Block Diagram**



**Derating Curve**

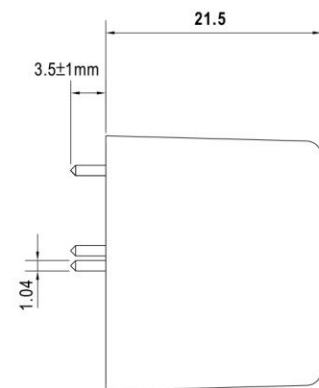
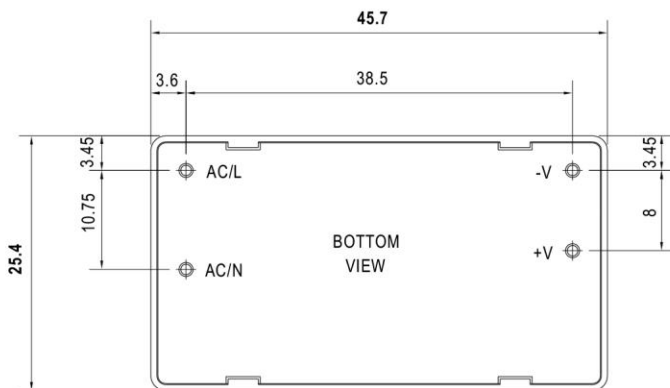


**Output Derating VS Input Voltage**



**Mechanical Specification**

Case No.222A Unit:(mm)



P/N diameter:1.04