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# 350W Single Output Switching Power Supply

# NES-350 series



■ Features :

- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage/ Over temperature
- Forced air cooling by built-in DC fan
- Withstand 300vac surge input for 5 second
- Built-in cooling Fan ON-OFF control
- Built-in constant current limiting circuit
- 100% full load burn-in test
- LED indicator for power on
- Fixed switching frequency at 90KHz
- Low cost,high reliability
- 2 years warranty

User's Manual

## SPECIFICATION

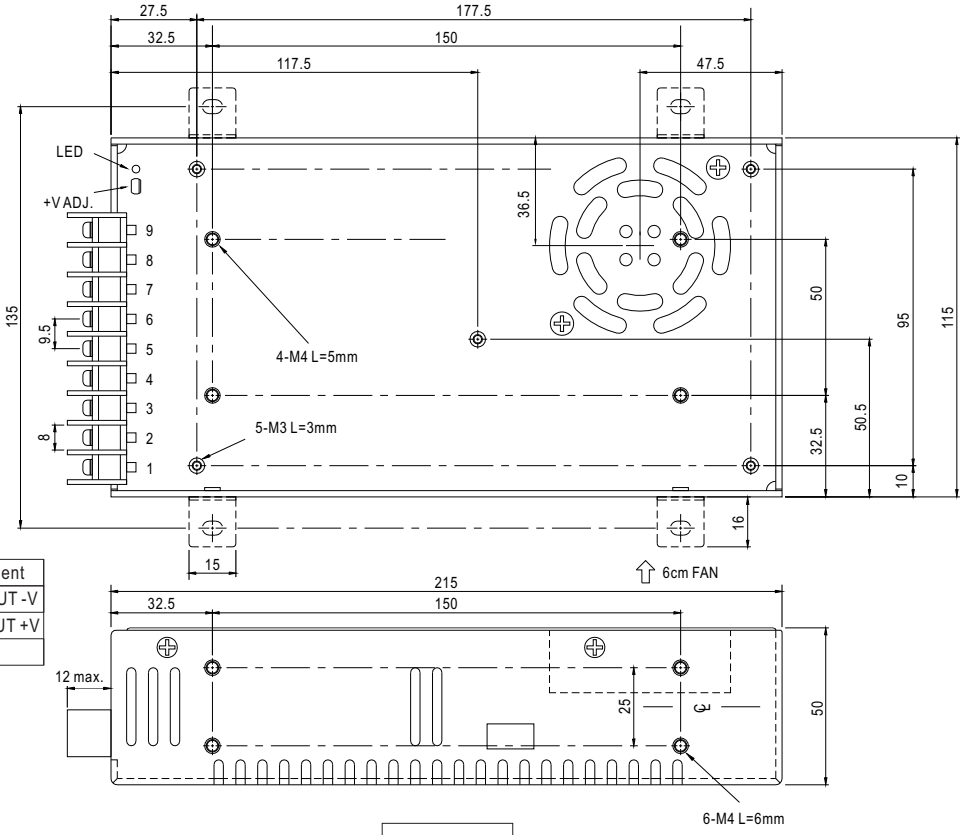
| MODEL | | NES-350-3.3 | NES-350-5 | NES-350-7.5 | NES-350-12 | NES-350-15 | NES-350-24 | NES-350-27 | NES-350-36 | NES-350-48 |
|---|---|---|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 7.5V | 12V | 15V | 24V | 27V | 36V | 48V |
| | RATED CURRENT | 60A | 60A | 46A | 29A | 23.2A | 14.6A | 13A | 9.7A | 7.3A |
| | CURRENT RANGE | 0 ~ 60A | 0 ~ 60A | 0 ~ 46A | 0 ~ 29A | 0 ~ 23.2A | 0 ~ 14.6A | 0 ~ 13A | 0 ~ 9.7A | 0 ~ 7.3A |
| | RATED POWER | 198W | 300W | 345W | 348W | 348W | 350.4W | 351W | 349.2W | 350.4W |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 240mVp-p | 240mVp-p |
| | VOLTAGE ADJ. RANGE | 2.97 ~ 3.7V | 4.5 ~ 5.6V | 6 ~ 9V | 10 ~ 13.5V | 13.5 ~ 18V | 20 ~ 26.4V | 26 ~ 32V | 32~40V | 41 ~ 56V |
| | VOLTAGE TOLERANCE Note.3 | +3%,-4.5% | ±3.0% | ±2.0% | ±1.5% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±2.5% | ±2.0% | ±2.0% | ±1.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 1000ms, 50ms/230VAC 1000ms,50ms/115VAC at full load | | | | | | | | |
| | HOLD UP TIME (Typ.) | 20ms/230VAC 16ms/115VAC at full load | | | | | | | | |
| INPUT | VOLTAGE RANGE Note.4 | 90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC | | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | |
| | EFFICIENCY (Typ.) | 74% | 78% | 80% | 83% | 84% | 87% | 88% | 87.5% | 87.5% |
| | AC CURRENT (Typ.) | 7A/115VAC 4A/230VAC | | | | | | | | |
| | INRUSH CURRENT (Typ.) | 40A/115VAC 60A/230VAC | | | | | | | | |
| | LEAKAGE CURRENT | <3.5mA / 240VAC | | | | | | | | |
| PROTECTION | OVER LOAD | 105 ~ 135% rated output power | | | | | | | | |
| | | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | |
| | OVER VOLTAGE | 3.8 ~ 4.6V | 5.75 ~ 7.5V | 9.4 ~ 11.25V | 13.8 ~ 16.2V | 18 ~ 21V | 27.6 ~ 32.4V | 33.7 ~ 39.2V | 41.4~46.8V | 57.6 ~ 67.2V |
| | | Protection type :Shut down O/P voltage, re-power on to recover | | | | | | | | |
| | OVER TEMPERATURE | 90℃±5℃(3.3~7.5V); 85℃±5℃(12~15V); 80℃±5℃(24V);75℃±5℃(27~48V) (TSW1) Detect on case | | | | | | | | |
| | | Protection type : Shut down O/P voltage, recovers automatically after temperature goes down | | | | | | | | |
| FUNCTION | FAN ON/OFF CONTROL(Typ.) | RTH2≧50℃ FAN ON, ≦45℃ FAN OFF (3.3 ~ 7.5V) | | | | | | | | |
| | | RTH2≧55℃ FAN ON, ≦50℃ FAN OFF (12 ~ 48V) | | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +60℃ (Refer to output load derating curve) | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -20 ~ +85℃, 10 ~ 95% RH | | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 50℃) | | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes | | | | | | | | |
| SAFETY | SAFETY STANDARDS | UL60950-1 approved | | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC | | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃/ 70% RH | | | | | | | | |
| OTHERS | MTBF | 234.3K hrs min. MIL-HDBK-217F (25℃) | | | | | | | | |
| | DIMENSION | 215*115*50mm (L*W*H) | | | | | | | | |
| | PACKING | 1.07Kg; 12pcs/13.5Kg/0.9CUFT | | | | | | | | |

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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.

## ■ Mechanical Specification

Case No. 912C Unit:mm



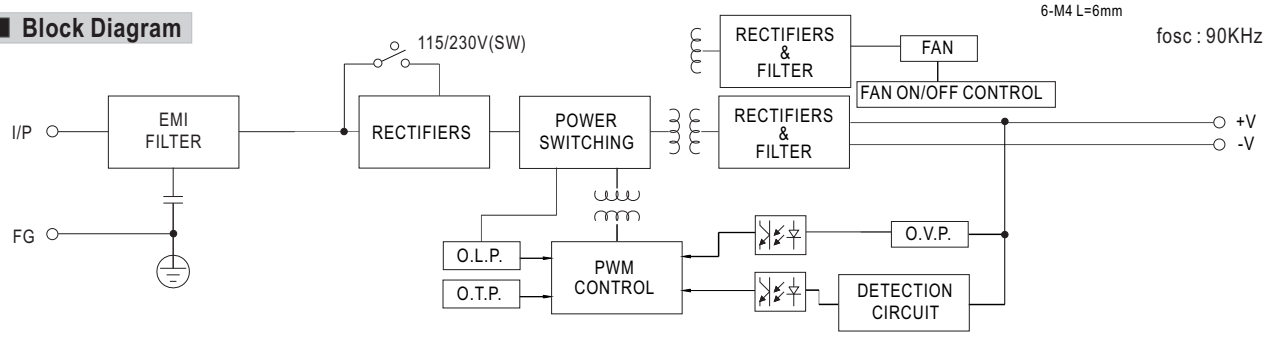

Terminal Pin No. assignment :

| Pin No. | Assignment | Pin No. | Assignment |
|---|---|---|---|
| 1 | AC/L | 4~6 | DC OUTPUT -V |
| 2 | AC/N | 7~9 | DC OUTPUT +V |
| 3 | FG ⏚ | | |

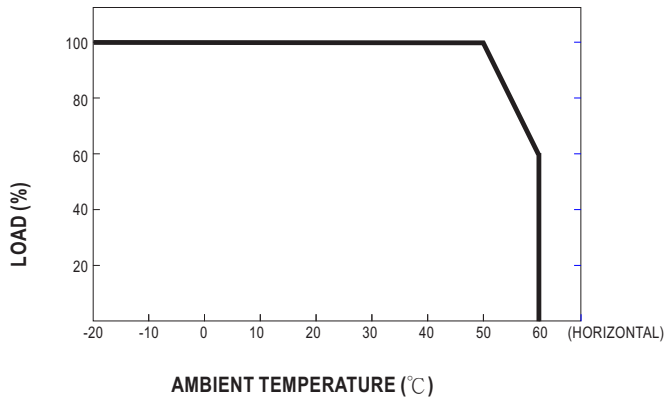



## ■ Block Diagram

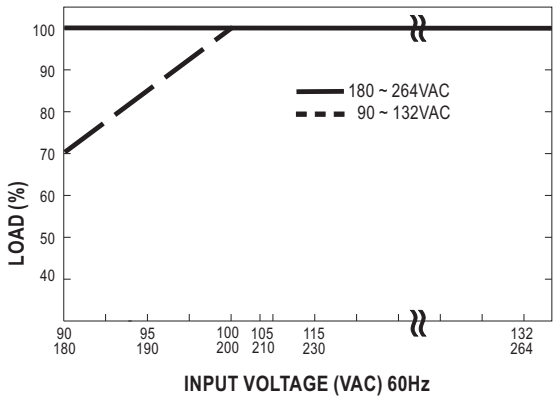
fosc : 90KHz




## ■ Derating Curve




## ■ Static Characteristics



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