



■ Features :

- Universal AC input / Full range
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Ultra-miniature size, light weight
- Cooling by free air convection
- Isolation class II
- UL60601-1/IEC60601-1/EN60601-1 medical safety approved
- No load power consumption<0.5W
- 100% full load burn-in test
- Fixed switching frequency at 67KHz
- High reliability
- 3 years warranty



SPECIFICATION

| MODEL | NFM-15-3.3 | NFM-15-5 | NFM-15-12 | NFM-15-15 | NFM-15-24 | |
|-----------------------|--|--|--------------|--------------|----------------|--------------|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 12V | 15V | 24V |
| | RATED CURRENT | 3.5A | 3A | 1.25A | 1A | 0.63A |
| | CURRENT RANGE | 0 ~ 3.5A | 0 ~ 3A | 0 ~ 1.25A | 0 ~ 1A | 0 ~ 0.63A |
| | RATED POWER | 11.55W | 15W | 15W | 15W | 15.12W |
| | RIPPLE & NOISE (max.) Note.2 | 80mVp-p | 80mVp-p | 150mVp-p | 150mVp-p | 240mVp-p |
| | VOLTAGE ADJ. RANGE | 3 ~ 3.63V | 4.5 ~ 5.5V | 10.8 ~ 13.2V | 13.5 ~ 16.5V | 21.6 ~ 26.4V |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% |
| | LINE REGULATION | ±1.0% | ±1.0% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 1000ms, 20ms/230VAC 1000ms, 20ms/115VAC at full load | | | | |
| HOLD UP TIME (Typ.) | 100ms/230VAC 24ms/115VAC at full load | | | | | |
| INPUT | VOLTAGE RANGE | 85 ~ 264VAC 120 ~ 370VDC | | | | |
| | FREQUENCY RANGE | 47 ~ 440Hz | | | | |
| | EFFICIENCY (Typ.) | 73% | 76% | 78% | 79% | 81% |
| | AC CURRENT (Typ.) | 0.35A/115VAC 0.2A/230VAC | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 30A/115VAC 50A/230VAC | | | | |
| PROTECTION | OVERLOAD | Above 105% 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 |
| | OVER TEMPERATURE Note.5 | Tj 140°C typically (U1) detect on main control IC Protection type : Shut down o/p voltage, recovers automatically after temperature goes down | | | | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +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 | | | | |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS | UL60950-1,UL60601-1,TUV EN60601-1, IEC60601-1 approved | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:4KVAC | | | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH | | | | |
| | EMC EMISSION | Compliance to EN55011(CISPR11), EN55022 (CISPR22) Class B, EN61000-3-2,-3 | | | | |
| OTHERS | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN60601-1-2, EN61204-3, medical level, criteria A | | | | |
| | MTBF | 499.7Khrs min. MIL-HDBK-217F (25°C) | | | | |
| | DIMENSION | 70*48*22mm (L*W*H) | | | | |
| NOTE | PACKING 0.065Kg; 120pcs/8.8Kg/0.97CUFT | | | | | |
| NOTE | <ol style="list-style-type: none"> 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 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. 5. The over temperature protection (OTP) is the built-in function of the control IC (U1). The activating level described above is based on the specification provided by the IC manufacturer. | | | | | |

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Mechanical Specification Unit: inch(mm)

AC INPUT: 1.89" (48mm) total height, 0.788" (20mm) for AC/N terminal, 0.157" (4mm) for AC/L terminal. T2A/250V fuse. DC OUTPUT: 0.906" (23.01mm) for -V terminal, 0.492" (12.5mm) for +V terminal. Total width: 2.441" (62mm) for main body, 2.75" (69.85mm) including terminals. Side view shows a height of 0.87" (22mm) with mounting holes at 0.07" (1.8mm) and 0.177" (4.5mm) from the edge, and a hole diameter of 0.138" (3.5mm).

Block Diagram fosc : 67KHz

Derating Curve **Output Derating VS Input Voltage**

Derating Curve Data:

| Ambient Temperature (°C) | Load (%) |
|--------------------------|----------|
| -20 to 50 | 100 |
| 50 to 70 | 50 |
| 70 | 0 |

Output Derating VS Input Voltage Data:

| Input Voltage (VAC) 60Hz | Load (%) |
|--------------------------|----------|
| 85 | 80 |
| 115 | 100 |
| 115 to 264 | 100 |

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