



■ Features :

- Universal AC input / Full range
- Protections: Short circuit / Overload / 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



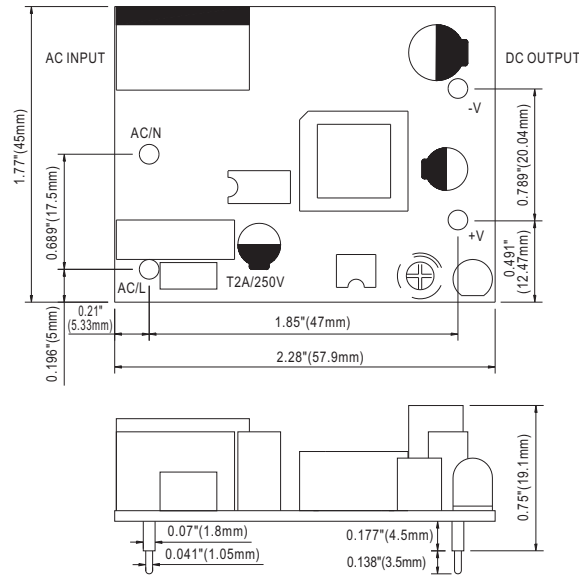
**SPECIFICATION**

| MODEL                 | NFM-05-3.3   | NFM-05-5   | NFM-05-12    | NFM-05-15    | NFM-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   | 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.)  | 67%  | 71%          | 73%          | 74%            | 76%          |
|                       | AC CURRENT (Typ.)  | 0.12A/115VAC 0.08A/230VAC  |              |              |                |              |
|                       | INRUSH CURRENT (Typ.)  | COLD START 25A/115VAC 45A/230VAC   |              |              |                |              |
| PROTECTION            | OVERLOAD   | Above 105% rated output power<br>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 145°C typically (U1) detect on main control IC<br>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   | 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   | 738.7Khrs min. MIL-HDBK-217F (25°C)  |              |              |                |              |
|                       | DIMENSION  | 58*45*19.1mm (L*W*H)   |              |              |                |              |
|                       | PACKING  | 0.03Kg; 120pcs/4.6Kg/0.97CUFT  |              |              |                |              |
| NOTE                  | <ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF &amp; 47uF parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>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.</li> <li>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.</li> </ol> |  |              |              |                |              |

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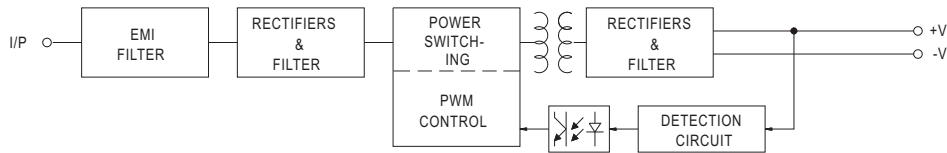
### Mechanical Specification

Unit: inch(mm)

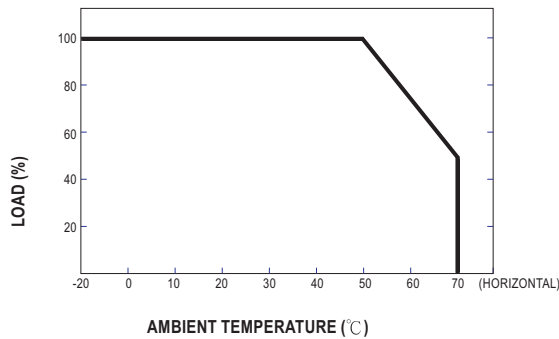


### Block Diagram

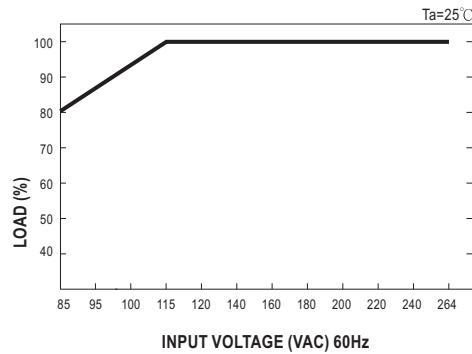
fosc : 67KHz



### Derating Curve



### Output Derating VS Input Voltage



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