

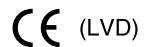
NFS25 Series

Dual and triple output

- 5.0 x 3.0 x 1.2 inch package (1U applications)
- Industry standard package
- Overvoltage and short circuit protection
- 25W with free air convection cooling
- EN55022, EN55011 conducted emissions level A
- UL, VDE and CSA safety approvals



The NFS25 series is a 25W universal input AC/DC power supply on a 5 x 3 inch card with a maximum component height of 1.2 inches for use in 1U applications. The NFS25 series is available with a wide range of models in the industry standard 5 x 3 inch footprint and has proven itself to be a reliable and versatile product for a wide range of communication and industrial applications. The NFS25 provides 25W of output power with free air convection cooling which can be boosted to 30W with 20CFM of air. Standard features include OVP and short circuit protection. The series, with full international safety approval and the CE mark, meets conducted emissions EN55022 level A. The NFS25 series is designed for use in low power data networking, computer, telecom and industrial applications such as wireless switchers, hubs, POS terminals, PABX's and machine control. This list is not exclusive as the generic feature of the series with industry standard output configurations provide a solution for most high volume applications including many industrial applications.



2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

| | | |
|--------------------------------------|--|---|
| Output power (See Note 2) | Continuous Peak (60s) | 25W 35W |
| Line regulation LL to HL, FL | Main output (Output 1) Output 2 Output 3 | ±0.2% max. ±1% max. ±0.2% max. |
| Total regulation (See Notes 4, 5) | Main output (Output 1) Auxiliary output 2 Auxiliary output 3 | ±2.0% max. see table see table |
| Overshoot/undershoot | At turn-on | 0% |
| Transient response | +5V (1.5 to 3A step) | ±120mV max. dev. 500µs recovery |
| Temperature coefficient | All outputs | ±0.02%/°C max. |
| Overvoltage protection | +5V output | 6.25V ±0.75V |
| Output power limit | Primary power limited | 60W Pin limit max. 35W Pout limit min. |
| Short circuit protection | | Continuous |

INPUT SPECIFICATIONS

| | | |
|----------------------------------|--|-------------------------------|
| Input voltage range | Universal input | 85 to 264VAC 120 to 370VDC |
| Input frequency range | | 47 to 440Hz |
| Input surge current | 110VAC, cold start 230VAC, cold start | 15A max. 32A max. |
| Safety ground leakage current | 132VAC, 60Hz 264VAC, 50Hz | 0.62mA max. 1mA max. |

EMC CHARACTERISTICS

| | | |
|---------------------|----------------------|------------------|
| Conducted emissions | EN55022, FCC part 15 | Level A |
| Radiated emissions | EN55022, FCC part 15 | Level A |
| ESD air | EN61000-4-2, level 3 | Perf. criteria 1 |
| ESD contact | EN61000-4-2, level 4 | Perf. criteria 1 |
| Surge | EN61000-4-5, level 3 | Perf. criteria 1 |
| Fast transients | EN61000-4-4, level 3 | Perf. criteria 1 |
| Radiated immunity | EN61000-4-3, level 3 | Perf. criteria 2 |
| Conducted immunity | EN61000-4-6, level 3 | Perf. criteria 1 |

GENERAL SPECIFICATIONS

| | | |
|--|-------------------------------|--|
| Hold-up time | 110VAC input 230VAC input | 16ms 80ms |
| Efficiency | 25W output | 70% typical |
| Isolation voltage | Input/output Input/chassis | 3000VAC 1500VAC |
| Switching frequency | | Variable |
| Approvals and standards (See Note 10) | | IEC950, IEC1010, EN60950 UL1950, VDE0805 CSA C22.2 No. 950 |
| Weight | | 280g (9.6oz) |
| MTBF (See Note 9) | MIL-HDBK-217E, 25°C | 170,000 hours |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|--|---|--|
| Thermal performance (See Notes 6, 7, 8) | 0°C to 50°C ambient, convection cooled 50°C to +70°C ambient convection cooled Peak (0°C to +50°C, max. 60 seconds) Non-operating | 25W max. Derate to 50% load 35W -40°C to +85°C |
| Relative humidity | Non-condensing | 5% to 95% RH |
| Altitude | Operating Non-operating | 10,000 feet max. 30,000 feet max. |
| Vibration | Random vibration Three orthogonal axes 10 min. test per axis | 2.4G rms approx. 5Hz to 500Hz |

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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

| OUTPUT VOLTAGE | OUTPUT CURRENTS | | | RIPPLE (3) | TOTAL REGULATION (4) | MODEL NUMBER (D) |
|--------------------------|-----------------|---------|----------|------------|----------------------|------------------|
| | MIN (9) | MAX (1) | PEAK (2) | | | |
| +5.1V (I _A) | 0A | 2.0A | 5.0A | 50mV | ±2.0% | NFS25-7608 (4) |
| +12.0V (I _B) | 0A | 1.5A | 3.0A | 120mV | ±5.0% | |
| -12.0V | 0A | 0.2A | 1.0A | 120mV | ±5.0% | |
| +5.1V | 0A | 3.0A | 5.0A | 50mV | ±2.0% | NFS25-7628 (5) |
| +12.0V | 0A | 0.2A | 1.0A | 120mV | ±2.0% | |
| -12.0V | 0A | 0.2A | 1.0A | 120mV | ±2.0% | |
| +5.1V (I _A) | 0A | 2.0A | 5.0A | 50mV | ±2.0% | NFS25-7629 (4) |
| +12.0V (I _B) | 0A | 1.5A | 3.0A | 120mV | ±5.0% | |

Notes

- Natural convection cooling.
- Peak output current lasting less than 60 seconds with duty cycle less than 5%. During peak loading, outputs may go outside of total regulation limits. Total peak power output is 35 Watts.
- Figure is peak-to-peak. Output noise measurements are made across a 50MHz bandwidth using a 12 inch twisted pair, terminated with a 47µF capacitor.
- Total regulation is defined as the static output regulation at 25°C, including initial tolerance, line voltage within stated limits, load currents within stated limits and output voltages adjusted to their factory settings. Also, $0.5 \leq I_A / I_B \leq 3$ to maintain stated regulation. This does not apply to the NFS25-7628.
- The NFS25-7628 has separately regulated +12V and -12V outputs. The loading condition in note 4 does not apply.
- Derate linearly from 25 Watts at 50°C to 12.5 Watts at 70°C.
- Derating curve is application specific for ambient temperatures > 50°C, for optimum reliability no part of the heatsink should exceed 120°C and no semiconductor case temperature should exceed 125°C.
- Caution: Allow a minimum of 1 second after disconnecting the power before making thermal measurements.
- A 4 Watt minimum load is required to achieve design MTBF.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.

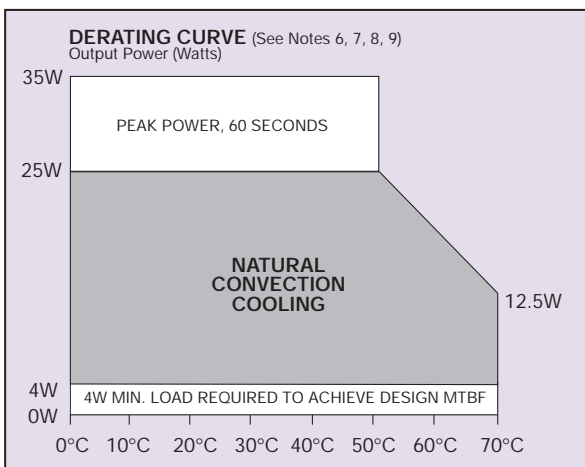
| PIN CONNECTIONS | | | |
|-----------------|---------------|------------|------------|
| | -7608 | -7628 | -7629 |
| J1 | | | |
| Pin 1 | AC Line | AC Line | AC Line |
| Pin 2 | AC Neutral | AC Neutral | AC Neutral |
| J2 | | | |
| Pin 1 | +12V | +12V | +12V |
| Pin 2 | +5.1V | +5.1V | +5.1V |
| Pin 3 | +5.1V | +5.1V | +5.1V |
| Pin 4 | Return | Return | Return |
| Pin 5 | Return | Return | Return |
| Pin 6 | -12V | -12V | N/C |
| P1 | | | |
| Pin 1 | Safety Ground | | |

AC mating connector

Molex 09-50-3031 or equivalent with Molex 08-50-0105 crimp terminals or equivalent

DC mating connector

Molex 09-91-0600 or equivalent with Molex 08-50-0164 crimp terminals or equivalent



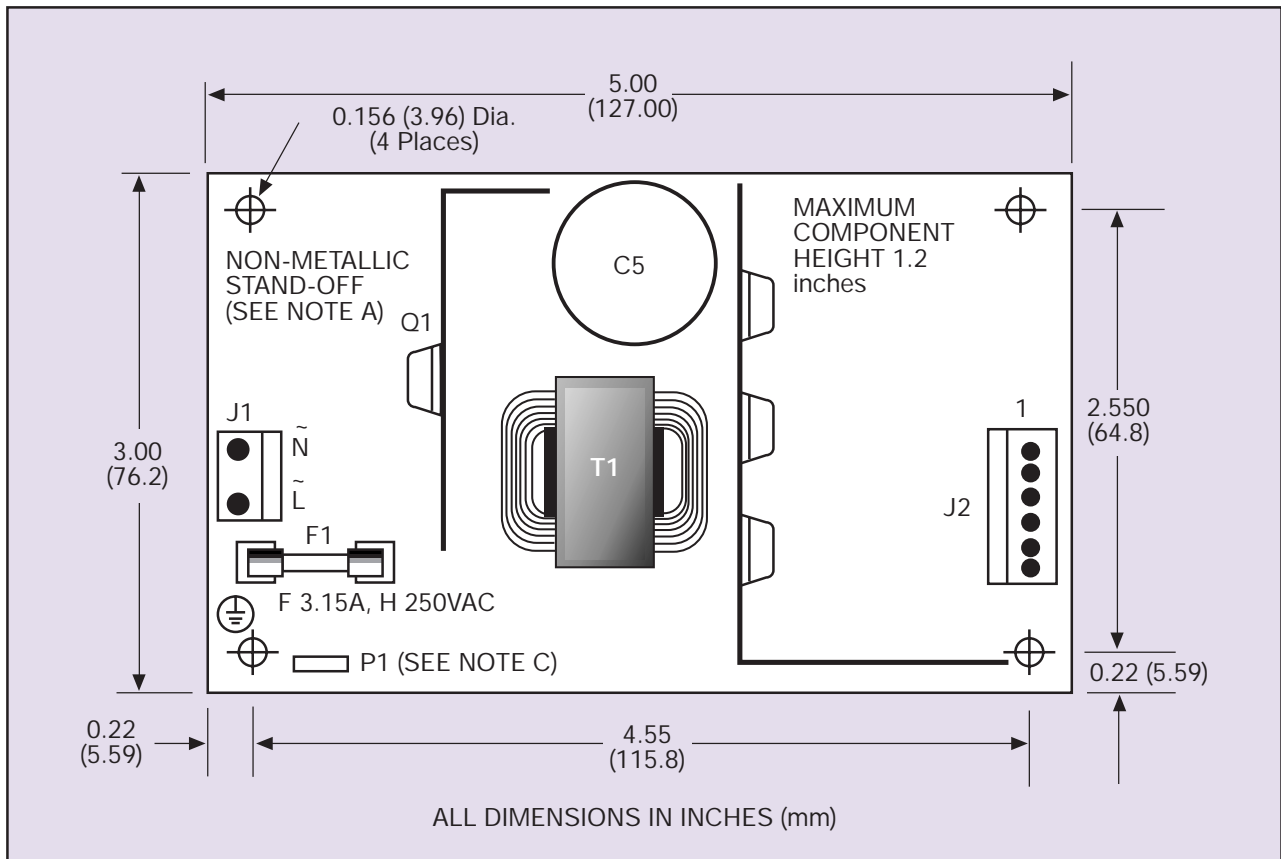
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Mechanical Notes

- A In order to meet safety requirements, a non-metallic stand-off is mandatory for one hole as specified in the mechanical drawing above.
- B The ground pad of the mounting hole near P1 allows system grounding through a metal stand-off.
- C To improve conducted noise, the ground pad of the mounting hole near the output connector should be connected with the ground pad of the mounting hole near P1. Use metal stand-offs attached to a common metal chassis. This connection also significantly attenuates common mode noise.
- D A standard L-bracket and cover is available for mounting which contains all screws, connectors and necessary mounting hardware. Order part number 'NFS40 COVER KIT'.



International Safety Standard Approvals



VDE0805/EN60950/IEC950/IEC1010
File No. 10401-3336-1044 Licence No. 2559, 1651



UL1950 File No. E136005



CSA C22.2 No. 950 File No. LR41062C

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