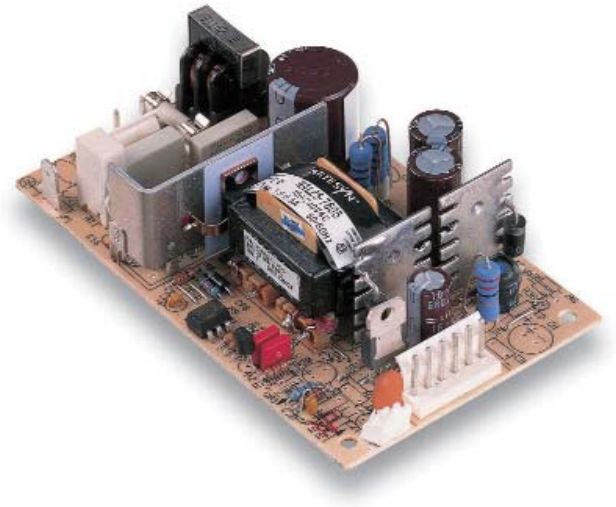
NAL25 Series
Single and triple output



Total Power: 25W
Input Voltage: 90 - 264VAC
120 - 370VDC
# of Outputs: Single and triple

Special Features

- 5.0 x 3.0 x 1.2 inch package (1U applications)
- Ideal for high volume designs
- Industry standard package
- Overvoltage and short circuit protection
- 25W with free air convection cooling
- EN55022, EN55011 conducted emissions level A
- UL, VDE, CSA and BABT safety approvals
- Available RoHS compliant
- 2 year warranty

Safety

VDE0805/EN60950/
IEC950/IEC1010
File No. 10401-3336-1076
Licence No. 70567,
1076 and 90354

UL1950 File No. E136005

CSA22.2/950
File No. LR41062C
Certificate No. PS/605107

The NAL25 series are 25W universal input AC/DC power supplies on a 5 x 3 inch card with a maximum component height of 1.2 inches for use in 1U applications. This series is available in an industry standard 5 x 3 inch footprint at low cost making the series ideal for new and existing high volume communication and industrial applications. The NAL25 series meets level A conducted emissions. The NAL25 series provide 25W of output power with free air convection cooling with a peak of 30W for a maximum of 60 seconds. The NAL25 series are designed for use in high volume low power data networking, computer and telecom applications such as hubs, POS terminals, modems and small PABX's. This list is not exclusive as the generic feature set of both series with industry standard output configurations provide a solution for most high volume applications including many industrial applications.

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Specifications

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

OUTPUT SPECIFICATIONS

Line regulation	Main output Auxiliary outputs	±0.5% ±1.0%
Total regulation	Main output Auxiliary outputs	±3.0% ±5.0%
Overshoot/undershoot	At turn-on	≤10%
Transient response	+5.1V (1A to 2A step)	±150mV max. dev., 500µs recovery
Temperature coefficient		±0.02%/°C
Overvoltage protection	+5.1V output	5.5V to 7.0V
Output power limit	Primary power limited	80W Pin limit, max. 30W Pout limit, min.
Short circuit protection		Continuous
Minimum output current		See derating curve

INPUT SPECIFICATIONS

Input voltage range		90 to 264VAC 120 to 370VDC
Input frequency range		47Hz to 440Hz
Input surge current	110VAC 230VAC	18A max. 38A max.
Safety ground leakage current	110VAC, 60Hz 230VAC, 50Hz	0.2mA 0.4mA

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 2
ESD contact	EN61000-4-2, level 4	Perf. criteria 2
Surge	EN61000-4-5, level 3	Perf. criteria 2
Fast transients	EN61000-4-4, level 3	Perf. criteria 2
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 230VAC	10ms @ 25W 60ms @ 25W
Efficiency		70%
Isolation voltage	Input/output Input/chassis	3000VAC 1500VAC
Switching frequency		Variable
Approvals and standards (See Note 8)		VDE0805, EN60950, IEC950 BABT, IEC1010, UL1950 CSA C22.2 No. 950
Weight		200g (7.06oz)
MTBF	MIL-HDBK-217F	150,000 hours min.

ENVIRONMENTAL SPECIFICATIONS

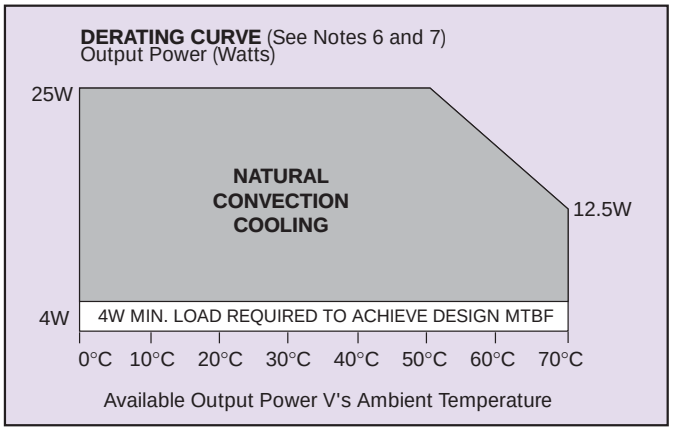
Thermal performance (See Notes 6, 7)	Operating ambient, (See derating curve)	0°C to +70°C
	Non-operating	-40°C to +85°C
	50°C to 70°C ambient, convection cooled	Derate to 50% load
	0C to 50C, ambient, convection cooled	25W
	Peak (0°C to +50°C, 60s)	30W
Relative humidity	Non-condensing	5% to 95% RH
Altitude	Operating Non-operating	10,000 feet max. 30,000 feet max.
Vibration (See Note 5)	5Hz to 500Hz	2.4G rms

Specifications Contd.

OUTPUT VOLTAGE	OUTPUT CURRENT		RIPPLE [3]	TOTAL REGULATION [4]	MODEL NUMBERS [9]
	MAX [1]	PEAK [2]			
+ 5.1V (I_A)	2.0A	5.0A	50mV	±3.0%	NAL25-7608J
+ 12V (I_B)	1.5A	3.0A	120mV	±5.0%	
–12V (I_C)	0.2A	1.0A	120mV	±5.0%	
5V	5.0A	5.0A	50mV	±3.0%	NAL25-7605J

Notes

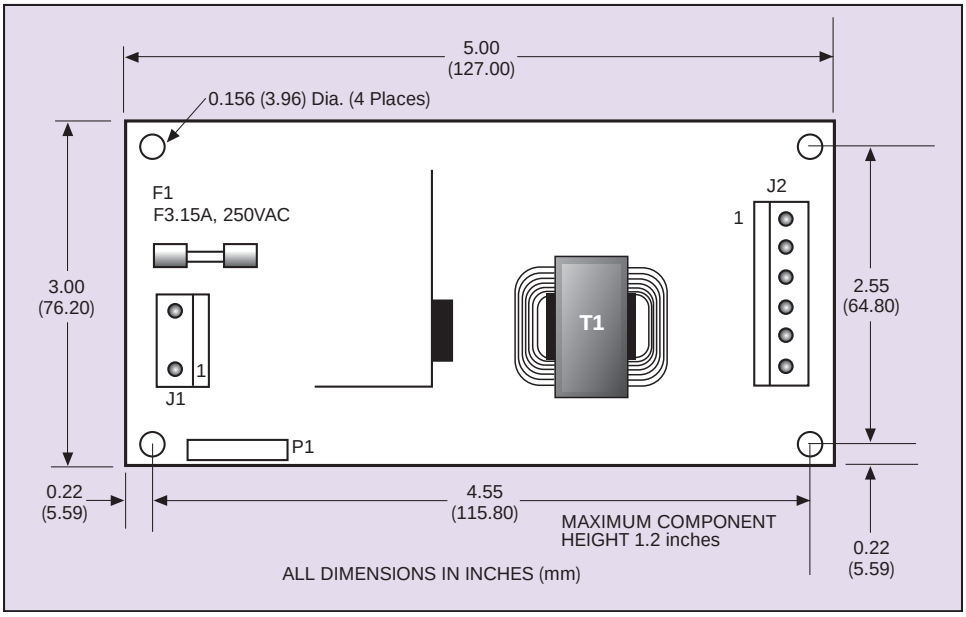
1 Natural convection cooling (25W maximum).
2 Peak output current lasting less than 60 seconds with duty cycle less than 5%. During peak loading, output voltage may exceed total reg. limits.
3 Figure is peak-to-peak. Output noise measurements are made across a 50MHz bandwidth using a 12 inch twisted pair, terminated with a 47µF capacitor.
4 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. For multiple output units to maintain stated regulation then:
0.25 ≤ $I_A / I_B \leq 5$, for $I_B > 0.3A$
0.50 ≤ $I_A / I_B \leq 5$, for $I_B < 0.3A$
Minimum load must also be 4W to achieve design MTBF.
For maximum output current I(C) on triple-output models, i.e. for I_C = IMax., then I_B min. ≥ 0.5A and $I_B \geq I_C$.
5 Three orthogonal axes, random vibration, ten minute test for each axis.
6 Derating curve is application specific for ambient temperatures >50°C, for optimum reliability, no part of the heatsink should exceed 120ºC, and no semiconductor case temperature should exceed 130ºC.
7 CAUTION: Allow a minimum of 1 second after disconnecting line power when making thermal measurements.
8 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
9 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.



Specifications Contd.

Mechanical Notes

A Ground pad encircling mounting hole near P1 allows system grounding through a metal stand-off of up to 8mm diameter max. to metal chassis



INPUT	
PIN CONNECTIONS	
J1	
Pin 1	AC Neutral
Pin 2	No Pin
Pin 3	AC Line
P1	
Pin 1	Safety Ground

OUTPUT PIN CONNECTIONS		
J2	-7605J	-7608J
P1	+Vout	+12V
P2	+Vout	+5.1V
P3	+Vout	+5.1V
P4	Return	Return
P5	Return	Return
P6	Return	-12V

AC (J1) mating connector
Molex 09-50-3031 or equiv. with Molex 08-50-0105 or equiv. crimp terminals.

DC (J2) mating connector
Molex 09-91-0600 or equiv. with Molex 08-50-0164 or equiv. crimp terminals.

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