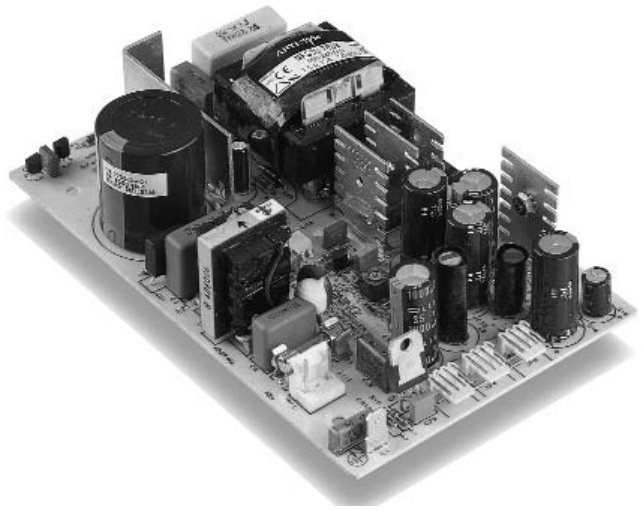
Rev.02.16.07
NFS50_7608J

NFS50_7608J
Triple output



Total Power: 50 - 60W
Input Voltage: 85 - 264VAC
120 - 370VDC
# of Outputs: Triple

Special Features

- 6.3 x 3.94 x 1.5 inch package (1U applications)
- Overvoltage and short circuit protection
- 50W with free air convection cooling
- Regulation to no load
- Isolated output option
- EN55022, EN55011 conducted emissions level A
- UL, VDE and CSA safety approvals
- NFS50 Medical IEC601 approved
- Available RoHS compliant
- 2 year warranty

Safety

VDE0805/EN60950/
IEC950/IEC1010
File No. 10401-3336-1036
Licence No 1485 and 1650

UL1950 File No. E136005

CSA C22.2 No. 950
File No. LR41062C

The NFS50 series is a 50W universal input AC/DC power supply on a 6.3 x 3.94 inch card with a maximum component height of 1.5 inches for use in 1U applications. The NFS50 series can regulate on the auxiliary outputs down to no load making it suitable for applications that require a heavy logic load on the main 5V output and low nominal loads with high peak capability for drives, relays or switches on the auxiliary outputs. The NFS50 provides 50W of output power with free air convection cooling which can be boosted to 60W with 20CFM of air. Standard features include overvoltage and short circuit protection. The series, with full international safety approval and the CE mark, meets conducted emissions EN55022 level A. The NFS50 series is designed for use in low power data networking, computer, telecom and industrial applications such as POS terminals, servers, PABX's, industrial PC's and process automation.

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Specifications

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

OUTPUT SPECIFICATIONS		
Voltage adjustability	+5V output +12V tracks the 5V output	±3%
Line regulation	LL to HL at max. load	±0.3%
Total regulation	Main output (output 1) All other outputs (See Notes 5, 6)	±2.5% ±5.0%
Overshoot/undershoot	At turn-on	0%
Transient response	5V (2.5A to 5A)	500mV max. dev. 500µs recovery to 0.5%
	12V (1A to 2A)	300mV max. dev. 500µs recovery to 0.5%
Temperature coefficient	All outputs	±0.03%/°C, max.
Overvoltage protection	+5V output	6.25V ±0.65V
Output power limit	Primary power limited	90W Pin max. 60W Pout min.
Short circuit protection		Yes, with auto-restart
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	10A, max. 20A max.
Safety ground leakage current	132VAC, 60Hz 264VAC, 50Hz	0.2mA, max. 0.4mA, max.
EMC CHARACTERISTICS		
Conducted emissions Radiated emissions ESD air	EN55022, FCC part 15 EN55022, FCC part 15 EN61000-4-2, level 3	Level A Level A Perf. criteria 1

EMC CHARACTERISTICS		
ESD contact Surge Fast transients Radiated immunity Conducted immunity	EN61000-4-2, level 4 EN61000-4-5, level 3 EN61000-4-4, level 3 EN61000-4-3, level 3 EN61000-4-6, level 3	Perf. criteria 1 Perf. criteria 1 Perf. criteria 2 Perf. criteria 2 Perf. criteria 2
GENERAL SPECIFICATIONS		
Hold-up time	110VAC, 50W output power 230VAC, 50W output power	16ms 100ms
Efficiency		70%, typ.
Isolation voltage	Input/output Input/chassis	3000VAC 1500VAC
Switching frequency	Variable	25kHz to 250kHz
Approvals and standards		VDE0805, EN60950, IEC950 IEC1010, CSA C22.2 No. 950
Weight		400g (14oz)
MTBF (See Note 7)	MIL-HDBK-217E, 25°C	160,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating range (See derating curve)	0°C to +70°C
	Non-operating	–40°C to +85°C
	0°C to 50°C ambient temp., Convection cooled	50W
	0°C to 50°C ambient, Forced air @ 20 CFM	60W
	50°C to 70°C ambient	Derate linearly to 50% load
	Peak (30 seconds)	60W
Relative humidity	Non-condensing	5% to 95% RH
Altitude	Operating Non-operating	10,000 feet max. 30,000 feet max.
Vibration (See Note 9)	5Hz to 500Hz	2.4G rms (approx)

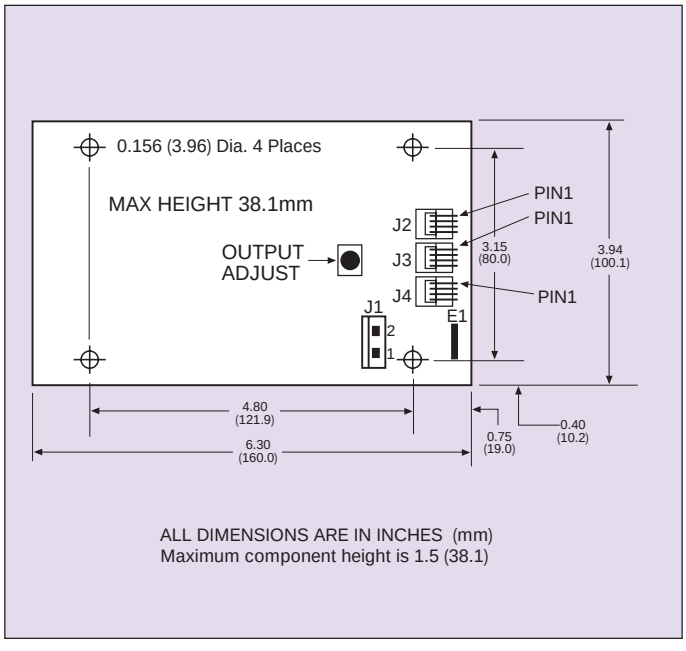
Specifications Contd.

OUTPUT VOLTAGE	OUTPUT CURRENTS			RIPPLE [4]	TOTAL REGULATION[5,6]	MODEL NUMBER [12]
	MAX[1]	PEAK [2]	FAN [3]			
+5.1V (I_1) [6]	5.0A	7.0A	7.0A	50mV	±2.5%	NFS50-7608J
+12.0V (I_2)	2.0A	5.0A	2.5A	120mV	±5.0%	
-12.0V	0.5A	1.0A	0.7A	120mV	±5.0%	

Notes

1 Convection cooled, maximum 50W output power.
2 Peak outputs lasting less than 30 seconds with duty factor less than 10%. During peak loading output may go outside total regulation limits. Maximum output during peak loading is 60 Watts.
3 Forced air, 20 CFM at 1 atmosphere.
4 Figure is peak-to-peak. Output noise measurements are across a 50MHz bandwidth made using a 12" twisted pair, terminated with a 47µF capacitor.
5 Total regulation is defined as the static output regulation at 25°C, including initial tolerance, line voltage within stated limits and output voltages adjusted to their factory settings. Also, for stated I(2) regulation: I(1)/I(2)≤5.
6 A minimum load of 0.5 Amps is required on the +5.1V output to obtain full current from the -12V output.
7 Derating curve is application specific for ambient temperatures > 50°C, for optimum reliability no part of the heatsink should exceed 110°C and no semiconductor case temperature should exceed 115°C.
8 Caution: Allow a minimum of 1 second after disconnecting the power when making thermal measurements.
9 Three orthogonal axes, random vibration, ten minute test for each axis.
10 A 5 Watt minimum load is recommended to achieve design MTBF.
11 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
12 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.

PIN CONNECTIONS	
J1	NFS50-7608J
Pin 1	AC Line
Pin 2	AC Neutral
J2, J3, J4	
Pin 1	-12V
Pin 2	+12V
Pin 3	Return
Pin 4	+5.1V
E1	
Pin 1	Ground

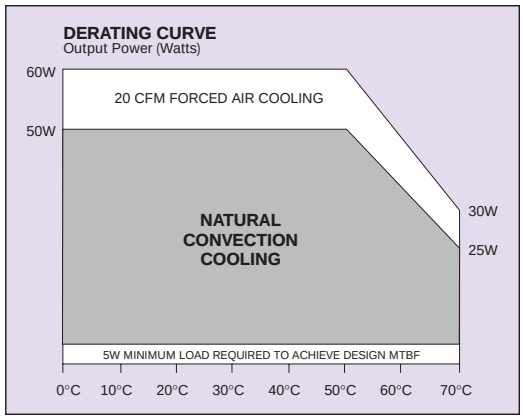


AC mating connector

Molex 09-50-3031 or equivalent with Molex 08-50-0105 or equivalent crimp terminal.

DC mating connector

Molex 22-01-1043 or equivalent with Molex 08-50-0031 or equivalent crimp terminal.



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