Features

- RoHS compliant for all six substances
- 40.5 to 72 VDC Input Range
- 12 V output
- 2000 VAC I/O electric strength test
- Highly-efficient topology
- High-density design
- 4" x 1.65" x 8.5" cassette
- I2C interface
- Supervisory signaling
- Overtemperature, output overvoltage, and output overcurrent protection
- ORing diode included for true redundant operation
- Safety approvals: UL60950-1/ CSA 60950-1, & TUV EN60950-1

Applications

- Telecommunications equipment

Description

The FND300-1012G is a highly-efficient bus converter with one high current output, which can be used in a wide range of applications. Passive current share along with internal ORing diodes allow this unit to be also used in redundant, hot-swap applications.

The FND300 meets international safety standards and displays the CE Mark for the low Voltage Directive.

Model Selection

Model	Nominal Output Voltage (VDC)	Input Current Max (ADC)	Adjustment Range (VDC)	Output Rated Current I_{rated} (ADC)	Output Ripple/Noise, mV p-p	Typical Efficiency @ I_{rated} %
FND300-1012G	12	10	N/A	25	<120	>80

Input Specifications

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Input Voltage	With full output power	40.5	48/60	72	VDC
Inrush current limitation	48 / 60 VDC			<12 / 15	A
Efficiency	V_i nom, I_o nom			>80	%

Output Specifications

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Nominal output current V1	V_i min to V_i max		25		A
Output voltage setting V1	V_i nom, 12.5 A, Tc = 25 °C		12.0		VDC
Static Line Regulation V1	V_i min to V_i max, V_i nom, 5 to 100% I_o nom			±0.5	%
Static Load Regulation V1* * (droop characteristic)	V_i min to V_i max, V_i nom, 5 to 100% I_o nom			±5	%
Minimum load	No minimum load requirements				
Hold-Up time	At full load, starting at V_i = 60 VDC			>8	ms
Dynamic load regulation Settling time	V1: ΔI_o = 8A, dI_o/dt = 2A/µs			±2 400	%Vout µs
Start-up time	V_i nom, I_o nom			<1	s
Output voltage ripple and noise	V_i nom, I_o nom, 20 MHz BW			<120	mVp-p

Interface Signals and Internal Protection[1]

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Overvoltage Protection	Latch-style overvoltage protection.			14.5	V
Overcurrent Protection	(Latch-style) 110 to 120% I_o nom				
Overtemperature	Self-recovery; shut down at Tc = 95 °C				
Input fuses	15 AF, Not user-accessible				
Input transient protection	VDR, reverse polarity protection				
I^2C Digital Bus	Reports information and monitors alarm functions				
PS seated signal	Contact closure to GND				
PS Remote Shut Down	TTL-compatible signal, inhibited at High or TTL "1"				
Power Fail	Indicates output voltage is out of regulation				
Fan Fail	Indicates low fan speed				
Current share	Droop load characteristic				
Status indication	LEDs: Input OK (green/red), Output OK (green/red)				

Environmental, Mechanical Specifications & Reliability

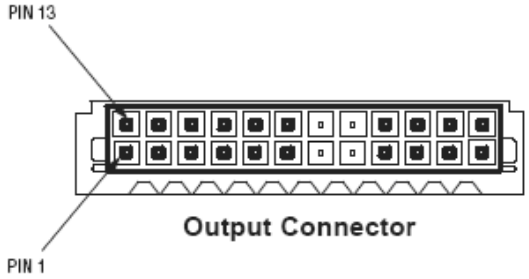
Parameter	Conditions/Description	Min	Nom	Max	Units
Operating Temperature	V_i min to V_i max, Io nom, cooling by internal fan	0		55	°C
Storage Temperature	Ambient	-40		85	°C
Operating Humidity	Relative Humidity, Non-cond.	10		90	%
Storage Humidity	Relative Humidity, Non-cond.	5		95	%
Shock	IEC/EN 60068-2-27, 11 ms			30	g
Sinusoidal Vibration	IEC/EN 60068-2-6 2 to 8 Hz 8 to 200 Hz 200 to 500 Hz			 7.5 2 4	 mm g_n g_n
Weight			1		kg
Dimensions	(Overall)	8.5 L (215.9)	4.0 W (101.6)	1.65 H (41.9)	in (mm)
MTBF	MIL-HDBK-217F Notice 2, G_B, 25 °C	150'000 (calculated)			h

Safety Regulatory Compliance & EMC

Safety Agency or Parameter	Standard Approved To:	Marking or Related Test Value
UL/CSA	UL60950-1 / CSA 60950-1	
TUV product service	TUV EN60950-1	
Electric strength test voltage	Class I, I/case (basic insulation)	1.41 kVDC
Electric strength test voltage	Class I, I/O (reinforced insulation)	2.82 kVDC
Electrostatic discharge	IEC/EN 61000-4-2, level 4 (contact/air)	8/15 kV, criterion B
Electromagnetic field	IEC/EN 61000-4-3, level 3	10 V/m, criterion A
Electr. fast transients/burst	IEC/EN 61000-4-4, level 4 (direct capacitive)	4/2 kV, criterion B
Surge	IEC/EN 61000-4-5, level 2 (L/L, L/C)	0.5/1 kV, criterion B
Electromagnetic emissions	CISPR 22/EN 55022/EN61204 conducted/radiated	Class B

Output Connector Pin Allocation

Connector: Molex (15-06-0241)



Pin	Signal Name	Description
1-3, 13-15	V1 RTN	V1 Output Return
4-6, 16-18	V1	V1 Output
7	-	Not Used
8	-	Not Used
9	PF	Power Fail
10	I^2C	I^2C Voltage Input/Output
11	SDA	Serial Data Line
12	SCL	Serial Clock Line
19	-	Not Used
20	-	Not Used
21	LSB	Address Input Line
22	RSD	Power Supply Remote Shut Down
23	PS_PRSNT_L	Power Supply Present signal
24	Fan Fail	Fan Fail signal

Connector Information

Power Supply:
Output - 24-Pin Molex connector 15-06-0241 with pre-plated tin over copper Molex terminals 39-00-0038

Mating Connections:
Output - 24-Pin Molex connector 15-06-0245 with pre-plated tin over copper Molex terminals 39-00-0040

Airflow Direction

Characteristic Curves

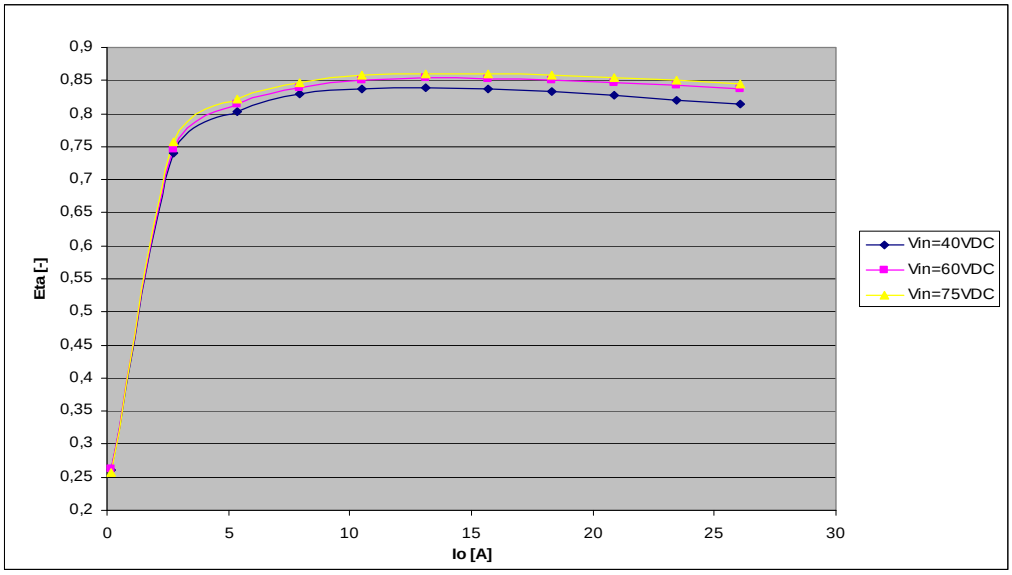


Figure 1. Efficiency vs. Output Load

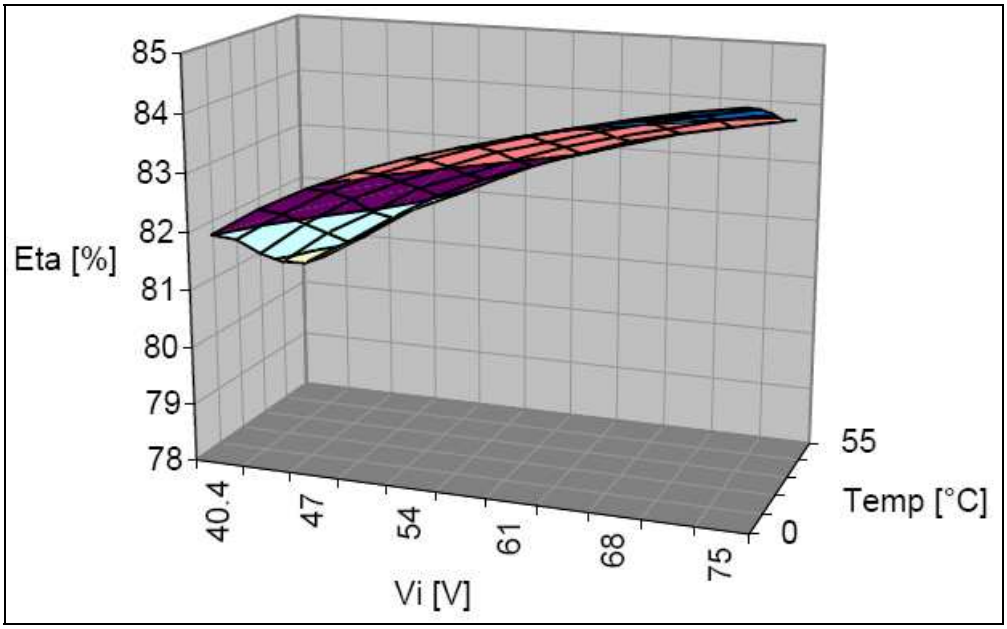


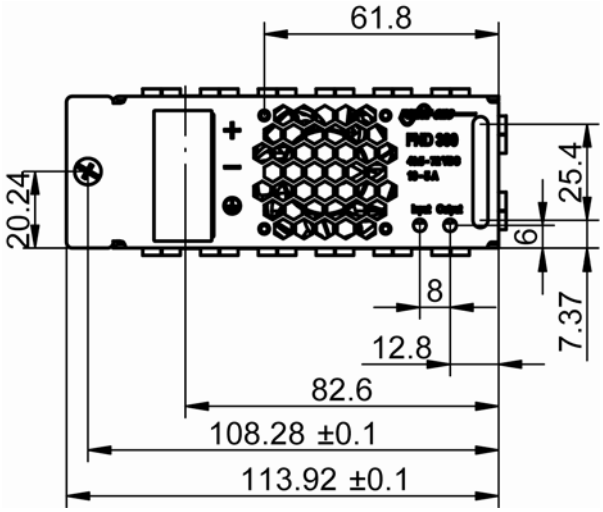
Figure 2. Efficiency vs. Input Voltage and Ambient Temperature, $I_o=I_{onom}$

Mechanical Drawings (Drawing dimensions are shown in mm)

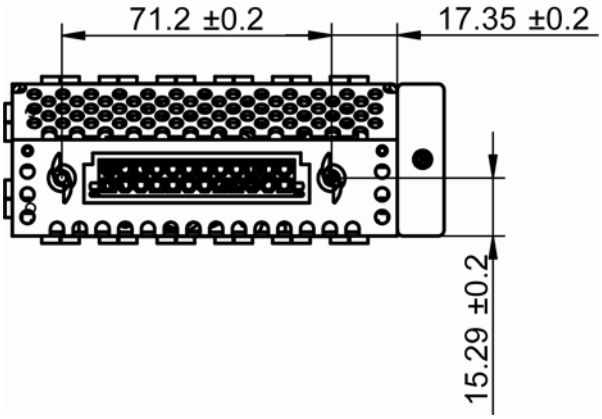
Overall Dimensions: 8.5 (L) x 4.0 (W) x 1.65 (H) inches; (215.9 x 101.6 x 41.9 mm)

Weight: 1 kg

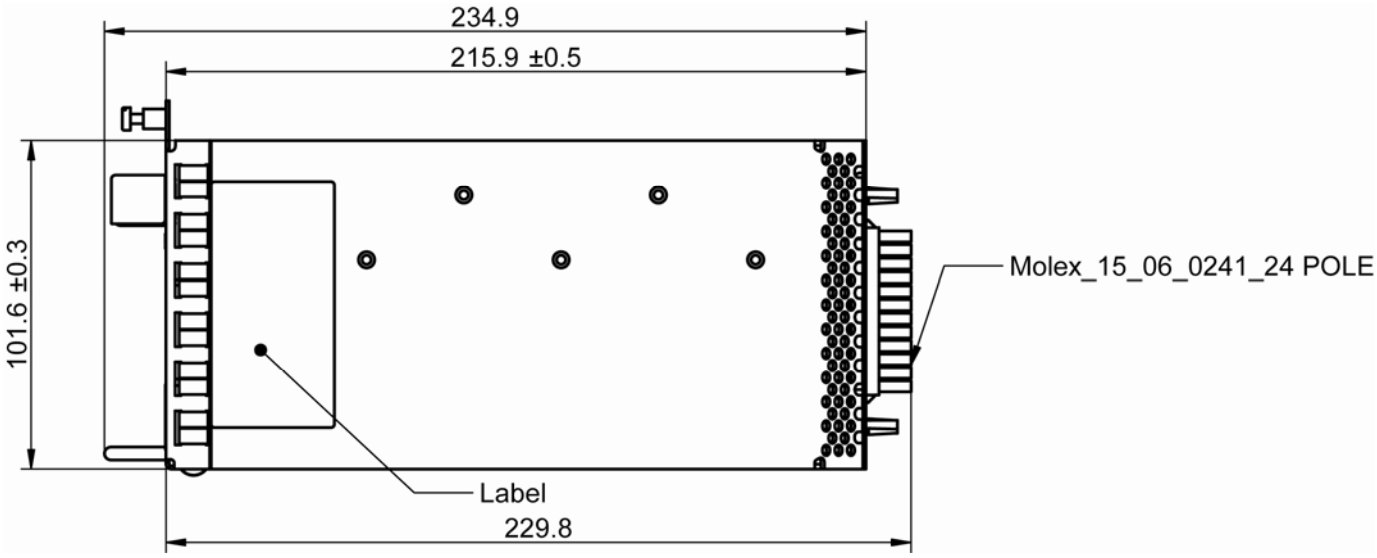
FRONT VIEW



REAR VIEW



TOP VIEW



SIDE VIEW