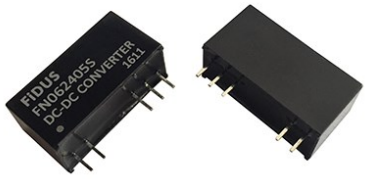
FN06 Series

FiDUS
power in motion...

6 Watts

- High power density
- 6W in 8 Pin SIP package
- Single and dual output
- 2:1 Input range
- Remote on/off (Optional)
- Up to 3KV Isolation
- 3 Year warranty



The FN series of low cost DC/DC converters come in both single and dual outputs in a SIP 8 pin package. Inputs are available in 5, 12, 24 & 48V versions and outputs from 3.3 to 24V single and dual. The units operate from –40 to +65°C. High volumes are held in stock for the popular models. All models have a FiDUS 3 year warranty.

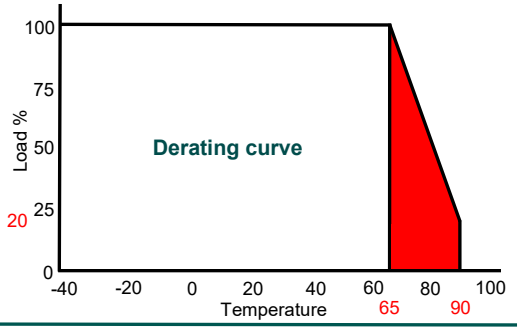
Dimensions:
0.86 x 0.36 x 0.44" (21.85 x 9.20 x 11.10mm)

Models & Ratings

Model Number[2][3]	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
FN060503S	4.5-9V	3.3V	1300mA	105mA	1144mA	6600uF	75%
FN060505S		5V	1200mA	105mA	1519mA	3300uF	79%
FN060509S		9V	666mA	105mA	1445mA	2000uF	83%
FN060512S		12V	500mA	105mA	1428mA	1600uF	84%
FN060515S		15V	400mA	105mA	1428mA	1400uF	84%
FN060524S		24V	250mA	105mA	1428mA	680uF	84%
FN060505SD		±5V	±600mA	105mA	1481mA	±2000uF	81%
FN060512SD		±12V	±250mA	105mA	1428mA	±900uF	84%
FN060515SD		±15V	±200mA	105mA	1428mA	±660uF	84%
FN061203S	9-18V	3.3V	1300mA	55mA	470mA	6600uF	76%
FN061205S		5V	1200mA	55mA	602mA	3300uF	83%
FN061209S		9V	666mA	55mA	595mA	2000uF	84%
FN061212S		12V	500mA	55mA	588mA	1600uF	85%
FN061215S		15V	400mA	55mA	588mA	1400uF	85%
FN061224S		24V	250mA	55mA	581mA	680uF	86%
FN061205SD		±5V	±600mA	55mA	609mA	±2000uF	82%
FN061212SD		±12V	±250mA	55mA	595mA	±900uF	84%
FN061215SD		±15V	±200mA	55mA	581mA	±660uF	86%
FN062403S	18-36V	3.3V	1300mA	30mA	229mA	6600uF	78%
FN062405S[1]		5V	1200mA	30mA	301mA	3300uF	83%
FN062409S		9V	666mA	30mA	294mA	2000uF	85%
FN062412S		12V	500mA	30mA	294mA	1600uF	85%
FN062415S		15V	400mA	30mA	287mA	1400uF	87%
FN062424S		24V	250mA	30mA	287mA	680uF	87%
FN062405SD		±5V	±600mA	30mA	304mA	±2000uF	82%
FN062412SD		±12V	±250mA	30mA	297mA	±900uF	84%
FN062415SD		±15V	±200mA	30mA	297mA	±660uF	84%
FN064803S	36-75V	3.3V	1300mA	15mA	117mA	6600uF	76%
FN064805S		5V	1200mA	15mA	156mA	3300uF	80%
FN064809S		9V	666mA	15mA	147mA	2000uF	85%
FN064812S		12V	500mA	15mA	149mA	1600uF	84%
FN064815S		15V	400mA	15mA	145mA	1400uF	86%
FN064824S		24V	250mA	15mA	148mA	680uF	84%
FN064805SD		±5V	±600mA	15mA	152mA	±2000uF	82%
FN064812SD		±12V	±250mA	15mA	147mA	±900uF	85%
FN064815SD		±15V	±200mA	15mA	147mA	±660uF	85%

Notes

1. High stock items
2. Add 'H' to for 3000VDC isolation.
3. Remote on/off option available. Add 'C'
4. Under no load conditions the unit may not meet all specifications
5. Do not operate continuously in red area of derating curve



Input

Parameter	Rating
Input voltage range	See table
Input reflected ripple current	30mA pk-pk through 12uH inductor
Input surge (100mS max)	5V Models 15V DC Max. 12V Models 25VDC Max. 24V Models 50VDC Max. 48V Models 100VDC Max.
Input filter	Capacitor

www.fiduspower.com

FN06 Series

FiDUS
power in motion...

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		24	VDC	See Model & Ratings table
Set point accuracy			±1	%	
Line regulation			±0.2	%	Low line to High line
Load regulation			±1	%	0 to 100% load change
Minimum load				%	No minimum load required
Cross regulation			±5	%	On dual output models when one load is varied by 25 to 100% and the other is 100% load.
Ripple & Noise			75	mV pk-pk	
Transient response			±5	% Deviation	3.3 and 5V outputs
			±3		All other outputs. For a 25% load change, recovery to within 3% within 300uS typically.
Short circuit protection					Continuous with automatic recovery
Maximum capacitive load					See Model and Ratings table
Remote on/off	Open circuit or high impedance ON. 3 - 6mA via a 1K resistor OFF. See application notes.				

General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	75		87	%	See Model & Ratings table
Isolation	1500		3000	VDC	Input to output. 3000VDC option 'H'
Isolation resistance	1000			M Ohm	
Isolation capacitance			50	pF	
Switching frequency	100			KHz	
Power density			44	W/In^3	
MTBF		>770		KHrs	As per MIL-HDBK-217F, 25°C GB

Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		65	°C	Derate linearly from 100% load at 65°C to 20% load at 90°C.
Storage temperature	-55		125	°C	
Case temperature			105	°C	
Cooling					Convection cooled
Humidity			95	% RH	Non-condensing
Temperature coefficient			±0.02	%/°C	

EMC: Emissions

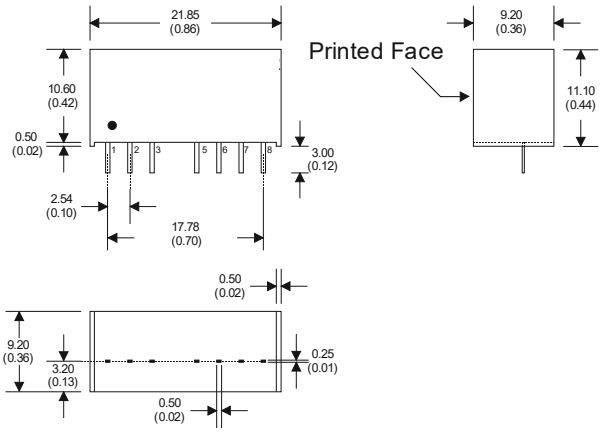
	Standard	Test level	Notes & Conditions
Conducted	EN55022	Class A	See application notes
Radiated	EN55022	Class A	

EMC: Immunity

	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3	B	
Radiated	EN61000-4-3	20Vrms	A	
EFT/Burst	EN61000-4-4	3	B	External input capacitor required 330uF/100V
Surges	EN61000-4-5	2	B	External input capacitor required 330uF/100V
Conducted	EN61000-4-6	3Vrms	A	
Magnetic fields	EN61000-4-8	1 A/m	A	

FN06 Series

Mechanical Details



Pin Connections		
Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	N.P	N.C
5	N.P	N.C
6	+Vout	+Vout
7	+Vout	0V
8	N.C	-Vout

Notes

1. All dimensions shown in millimetres (inches)
2. Pin diameter 0.5 ±0.05 (0.02 ±0.002)
3. Case tolerance ±0.5 (±0.002)
4. For Remote on/off option. Control is pin 3.

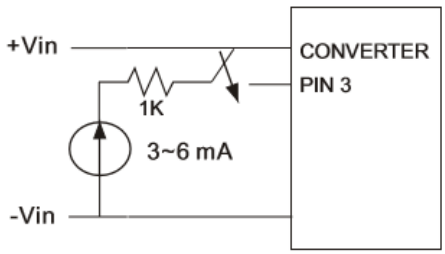
Physical

Parameter	Rating
Case material	Non-conductive black plastic (UL94V-0)
Pin material	C5191R-H Solder coated
Potting material	Epoxy (UL94V-0)
Weight	4.8g
Dimensions	0.86 x 0.36 x 0.44"
Soldering temperature	1.5mm from case ,10s and 260°C max.

Application notes

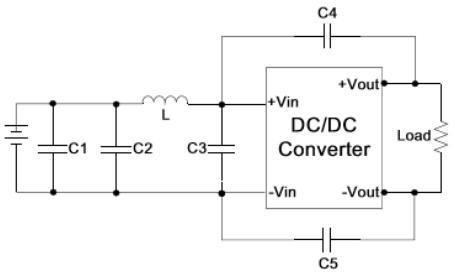
Remote ON/OFF

The FN series output can be turned on and off using the remote on/off function. If Pin 3 is left open circuit or high impedance then the unit is ON. 3 - 6mA of input current via a 1K resistor to turn OFF.



EMI Filter

The input filter components C1 and L1 can be fitted to help meet conducted emission requirements for the system. They should be mounted as close as possible to the module. Lead lengths should be minimized and where possible avoid running input and output tracks under the module as part of good design practice for best EMC performance. If the module is embedded in a system running from a AC/DC converter, this will have its own additional immunity protection and EMI filtering that will impact the overall system EMI performance.



Model number	C1	C2 & C3	L	C4 & C5
FN0605XX	Electrolytic capacitor 220uF/100V	MLCC 22uF/25V	10uH	MLCC 220pF/3KV
FN0612XX		MLCC 10uF/50V	10uH	MLCC 220pF/3KV
FN0624XX		MLCC 10uF/50V	10uH	MLCC 220pF/3KV
FN0648XX		MLCC 2.2uF/100V	10uH	MLCC 220pF/3KV