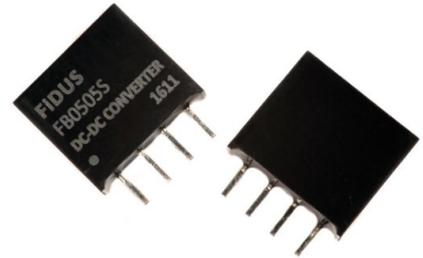


1 Watts

- Single output
- SIP or DIP package
- Industry standard pin out
- Up to 3KV Isolation
- -40 to +85°C Operation
- High stock on popular models
- 3 Year warranty



The FB series of low cost DC/DC converters come in single output in either a SIP 4 pin or DIP 8 pin package. Inputs are available in 5, 12, & 24V versions and outputs from 3.3 to 24V. The units operate from -40 to +85°C. High volumes are held in stock for the popular models. All models have a FiDUS 3 year warranty.

Dimensions:

SIP: 0.46 x 0.24 x 0.40" (11.68 x 6.0 x 10.15mm)
DIP: 0.50 x 0.40 x 0.27" (12.7 x 10.16 x 6.85mm)

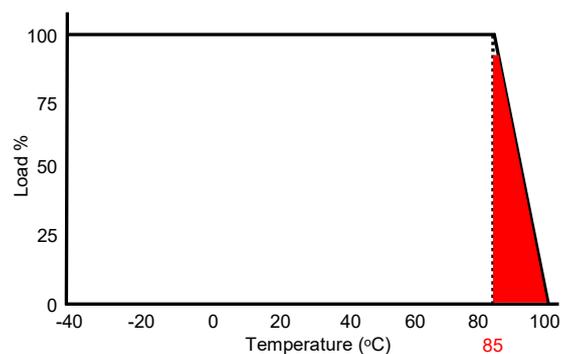
Models & Ratings

Model Number ⁽²⁾⁽³⁾	Input	Output voltage	Output Current	Efficiency
FB0503S	5V	3.3V	303mA	78%
FB0505S ⁽¹⁾		5V	200mA	81%
FB0509S		9V	111.1mA	80%
FB0512S		12V	100mA	80%
FB0515S		15V	66.6mA	82%
FB0524S		24V	50mA	83%
FB1203S	12V	3.3V	303mA	78%
FB1205S		5V	200mA	79%
FB1209S		9V	111.1mA	78%
FB1212S		12V	100mA	80%
FB1215S		15V	66.6mA	79%
FB1224S		24V	50mA	71%
FB2403S	24V	3.3V	303mA	77%
FB2405S		5V	200mA	80%
FB2409S		9V	111.1mA	77%
FB2412S		12V	100mA	80%
FB2415S		15V	66.6mA	81%
FB2424S		24V	50mA	83%

Notes

1. High stock items
2. For DIP package change 'S' for 'D'
3. Add 'H' to model number for 3000VDC isolation.
4. 3.3 & 15V input models available. Please contact sales.
5. Under no load conditions the unit may not meet all specifications
6. 3.3 input models available on request. Please contact Sales.
7. Do not operate continuously in the red area of derating curve

Derating curve



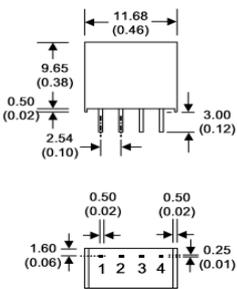
Input	
Parameter	Rating
Input voltage range	Nominal ±10%
Input reflected ripple current	20mA pk-pk through 12uH inductor
Input current no load/ full load	5V Models 35/300mA. 12V Models 25/125mA. 24V Models 9/62mA.
Input surge (100mS max)	5V Models 7V DC Max. 12V Models 15VDC Max. 24V Models 28VDC Max.
Input reverse voltage protection	None

Output	
Parameter	Rating
Output voltage	See model ratings table
Line regulation	1.2%/1% change in Vin
Load regulation	±10% (20 - 100% load), 3.3V ±20%
Set point accuracy	±3%
Minimum load	None
Ripple & noise	100mV pk-pk, 20MHz bandwidth
Maximum capacitive load	220uF

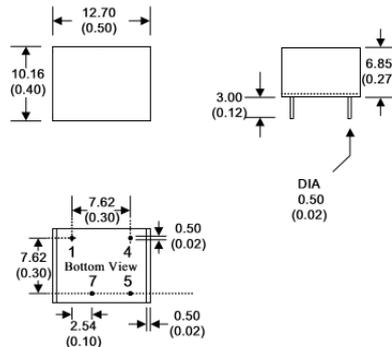
Environmental	
Parameter	Rating
Operating temperature	-40 - 85°C (See derating curve)
Storage temperature	-40 - 125°C
Case temperature	100°C
Cooling	Convection
Humidity	95% RH non-condensing

General	
Parameter	Rating
Efficiency	See model ratings table
Isolation voltage	1000VDC. Optional to 3000VDC
Isolation resistance	1000M Ohm
Isolation capacitance	60pF typical
Switching frequency	Variable 80KHz typical
MTBF	>1.21 Mhrs
Soldering temperature	260°C

Physical	
Parameter	Rating
Case material	Non-conductive black plastic (UL94V-0)
Pin material	0.5mm Alloy42 solder coated
Potting material	Epoxy (UL94V-0)
Weight	SIP 1.5g, DIP 1.8g
Dimensions	SIP 0.46 x 0.24 x 0.4", DIP 0.5 x 0.4 x 0.27"



SIP Pin Connections	
Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout



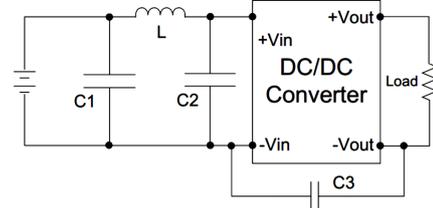
DIP Pin Connections	
Pin	Function
1	-Vin
4	+Vin
5	+Vout
7	-Vout

Dimension notes

- All dimensions shown in millimetres (inches)
- Pin diameter 0.5 ±0.05 (0.02 ±0.002)
- Case tolerance ±0.5 (±0.002)
- The thickness of 48V input voltage model is 7.50mm (0.29")

Application note

Input filter components can be fitted to help meet conducted emission EN55024 level B. 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.



For EMC immunity to 61000-4-4/5 it is recommended to fit a 470uF / 100V electrolytic capacitor

Conducted EMC Emission Components				
Model number	C1	C2	L	C3
FB05XX	1210 2.2uF / 100V		18uH	
FB12XX	1210 2.2uF / 100V		18uH	
FB24XX	1210 2.2uF / 100V	1210 2.2uF / 100V	18uH	1206 470pF/2KV