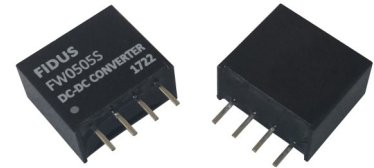


## 0.25 Watts

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



The FW 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 3.3, 5, 12, 15, 24 & 48V versions and outputs from 3.3 to 24V. The units operate from -40 to +85°C. All models have a FiDUS 5 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 <sup>(1)(2)</sup>	Input Voltage	Output Voltage	Output Current	Input Current		Efficiency
				No Load	Full Load	
FW0303S	3.3V	3.3V	75.7mA	30mA	120mA	63%
FW0305S		5V	50mA	25mA	115mA	66%
FW0307S		7V	34.7mA	25mA	118mA	64%
FW0309S		9V	27.7mA	25mA	118mA	64%
FW0312S		12V	20.8mA	32mA	113mA	67%
FW0315S		15V	16.6mA	25mA	118mA	64%
FW0318S		18V	13.8mA	25mA	115mA	66%
FW0324S		24V	10.4mA	20mA	115mA	66%
FW0503S	5V	3.3V	75.7mA	20mA	78mA	64%
FW0505S		5V	50mA	17mA	70mA	71%
FW0507S		7V	34.7mA	18mA	74mA	68%
FW0509S		9V	27.7mA	15mA	68mA	73%
FW0512S		12V	20.8mA	14mA	66mA	76%
FW0515S		15V	16.6mA	20mA	70mA	71%
FW0518S		18V	13.8mA	17mA	69mA	72%
FW0524S		24V	10.4mA	18mA	65mA	77%
FW1203S	12V	3.3V	75.7mA	10mA	32mA	65%
FW1205S		5V	50mA	12mA	31mA	67%
FW1207S		7V	34.7mA	10mA	31mA	67%
FW1209S		9V	27.7mA	12mA	33mA	64%
FW1212S		12V	20.8mA	15mA	33mA	63%
FW1215S		15V	16.6mA	13mA	31mA	67%
FW1218S		18V	13.8mA	13mA	32mA	65%
FW1224S		24V	10.4mA	18mA	38mA	55%
FW1503S	15V	3.3V	75.7mA	12mA	26mA	63%
FW1505S		5V	50mA	8mA	27mA	62%
FW1507S		7V	34.7mA	12mA	28mA	60%
FW1509S		9V	27.7mA	12mA	28mA	60%
FW1512S		12V	20.8mA	12mA	27mA	62%
FW1515S		15V	16.6mA	10mA	27mA	61%
FW1518S		18V	13.8mA	12mA	29mA	57%
FW1524S		24V	10.4mA	12mA	29mA	57%
FW2403S	24V	3.3V	75.7mA	8mA	17mA	60%
FW2405S		5V	50mA	7mA	18.6mA	56%
FW2407S		7V	34.7mA	8mA	18mA	57%
FW2409S		9V	27.7mA	8mA	17mA	62%
FW2412S		12V	20.8mA	10mA	19mA	56%
FW2415S		15V	16.6mA	7mA	19mA	55%
FW2418S		18V	13.8mA	10mA	18mA	57%
FW2424S		24V	10.4mA	10mA	18mA	59%

### Notes

1. Add 'H' to model number for 3000VDC isolation.
2. Under no load conditions the unit may not meet all specifications

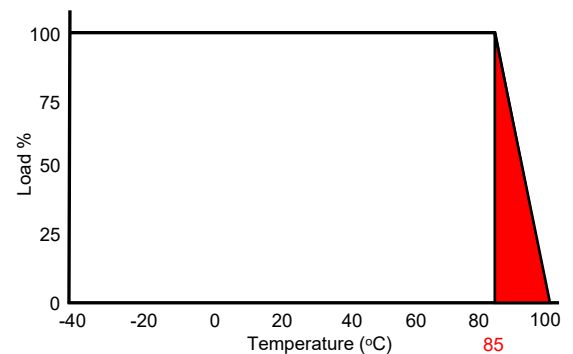
## Models & Ratings

Model Number <sup>(1)(2)</sup>	Input Voltage	Output Voltage	Output Current	Input Current		Efficiency
				No Load	Full Load	
FW4803S	48V	3.3V	75.7mA	8mA	9mA	55%
FW4805S		5V	50mA	8mA	10mA	53%
FW4807S		7V	34.7mA	8mA	10mA	54%
FW4809S		9V	27.7mA	8mA	10mA	54%
FW4812S		12V	20.8mA	8mA	9mA	55%
FW4815S		15V	16.6mA	8mA	10mA	54%
FW4818S		18V	13.8mA	8mA	11mA	49%
FW4824S		24V	10.4mA	10mA	11mA	49%
FW0303D	3.3V	3.3V	75.7mA	25mA	124mA	61%
FW0305D		5V	50mA	25mA	118mA	64%
FW0307D		7V	34.7mA	25mA	118mA	64%
FW0309D		9V	27.7mA	25mA	118mA	64%
FW0312D		12V	20.8mA	25mA	120mA	63%
FW0315D		15V	16.6mA	25mA	118mA	64%
FW0318D		18V	13.8mA	25mA	115mA	66%
FW0324D		24V	10.4mA	20mA	115mA	66%
FW0503D	5V	3.3V	75.7mA	20mA	83mA	60%
FW0505D		5V	50mA	15mA	72mA	69%
FW0507D		7V	34.7mA	18mA	71mA	70%
FW0509D		9V	27.7mA	18mA	71mA	70%
FW0512D		12V	20.8mA	20mA	74mA	68%
FW0515D		15V	16.6mA	20mA	74mA	68%
FW0518D		18V	13.8mA	17mA	68mA	73%
FW0524D		24V	10.4mA	23mA	72mA	69%
FW1203D	12V	3.3V	75.7mA	12mA	31mA	67%
FW1205D		5V	50mA	10mA	32mA	65%
FW1207D		7V	34.7mA	15mA	32mA	65%
FW1209D		9V	27.7mA	12mA	35mA	60%
FW1212D		12V	20.8mA	13mA	31mA	68%
FW1215D		15V	16.6mA	16mA	37mA	57%
FW1218D		18V	13.8mA	16mA	38mA	55%
FW1224D		24V	10.4mA	18mA	41mA	51%
FW1503D	15V	3.3V	75.7mA	12mA	26mA	63%
FW1505D		5V	50mA	10mA	26mA	63%
FW1507D		7.2V	34.7mA	12mA	28mA	60%
FW1509D		9V	27.7mA	12mA	28mA	60%
FW1512D		12V	20.8mA	12mA	28mA	60%
FW1515D		15V	16.6mA	13mA	28mA	59%
FW1518D		18V	13.8mA	12mA	29mA	57%
FW1524D		24V	10.4mA	12mA	29mA	57%
FW2403D	24V	3.3V	75.7mA	8mA	18mA	58%
FW2405D		5V	50mA	7mA	18.6mA	56%
FW2407D		7.2V	34.7mA	8mA	18mA	59%
FW2409D		9V	27.7mA	8mA	18mA	58%
FW2412D		12V	20.8mA	10mA	19mA	55%
FW2415D		15V	16.6mA	7mA	18mA	59%
FW2418D		18V	13.8mA	10mA	20mA	53%
FW2424D		24V	10.4mA	10mA	19mA	55%

### Notes

1. Add 'H' to model number for 3000VDC isolation.
2. Under no load conditions the unit may not meet all specifications
3. 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 surge (100mS max)	3.3V Models 5V DC Max. 5V Models 7V DC Max. 12V Models 15VDC Max. 24V Models 28VDC Max. 48V Models 54VDC Max.

## 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	100uF

## General

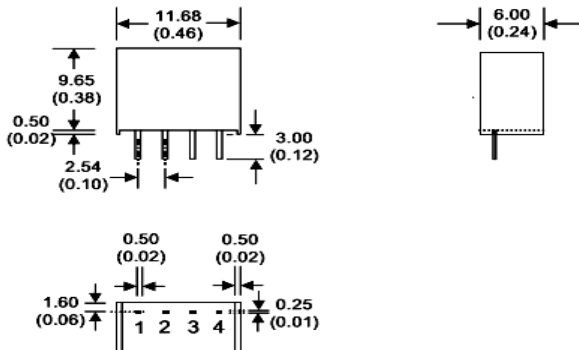
Parameter	Rating
Efficiency	See model ratings table
Isolation voltage	1000VDC. Optional to 3000VDC
Isolation resistance	1000M Ohm
Isolation capacitance	60pF typical
Switching frequency	Variable 80KHz typical
MTBF	>1.121 Mhrs
Soldering temperature	260°C

## Environmental

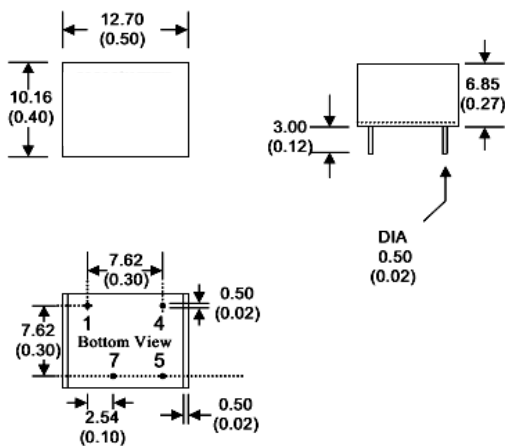
Parameter	Rating
Operating temperature	-40 - 85°C (See derating curve)
Storage temperature	-40 - 125°C
Case temperature	100°C
Cooling	Convection
Humidity	95% RH non-condensing

## Physical

Parameter	Rating
Case material	Non-conductive black plastic (UL94V-0)
Pin material	0.5mm solder coated Alloy42- SIP Brass-DIP
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 (±0.02)
- The thickness of 48V input voltage model is 7.50mm (0.29")