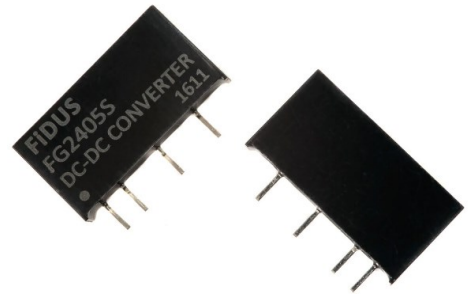


## 2 Watts

- Single & Dual output
- SIP or DIP package
- Industry standard pin out
- Up to 6KV Isolation
- -40 to +85°C Operation
- High stock on popular models
- 3 Year warranty



The FG series of low cost DC/DC converters come in both single and dual outputs in either a SIP 7 pin or DIP 14 pin package. Inputs are available in 5, 12, & 24V versions and outputs from 3.3 to 24V single and dual. 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:** 0.76 x 0.24 x 0.39" (19.5 x 6.0 x 10.00mm)  
**DIP:** 0.80 x 0.40 x 0.27" (20.32 x 10.16 x 6.88mm)

### Models & Ratings - Single output

| Model Number <sup>(2)(3)</sup> | Input <sup>(6)</sup> | Output voltage | Output Current | Efficiency |
|--------------------------------|----------------------|----------------|----------------|------------|
| FG0503S                        | 5V                   | 3.3V           | 400mA          | 72%        |
| FG0505S <sup>(1)</sup>         |                      | 5V             | 400mA          | 78%        |
| FG0509S                        |                      | 9V             | 222.2mA        | 80%        |
| FG0512S                        |                      | 12V            | 166.7mA        | 82%        |
| FG0515S                        |                      | 15V            | 133.3mA        | 82%        |
| FG0524S                        |                      | 24V            | 83.3mA         | 82%        |
| FG1203S                        | 12V                  | 3.3V           | 400mA          | 65%        |
| FG1205S                        |                      | 5V             | 400mA          | 77%        |
| FG1209S                        |                      | 9V             | 222.2mA        | 80%        |
| FG1212S <sup>(1)</sup>         |                      | 12V            | 166.7mA        | 82%        |
| FG1215S                        |                      | 15V            | 133.3mA        | 82%        |
| FG1224S                        |                      | 24V            | 83.3mA         | 80%        |
| FG2403S                        | 24V                  | 3.3V           | 400mA          | 72%        |
| FG2405S <sup>(1)</sup>         |                      | 5V             | 400mA          | 79%        |
| FG2409S                        |                      | 9V             | 222.2mA        | 80%        |
| FG2412S <sup>(1)</sup>         |                      | 12V            | 166.7mA        | 80%        |
| FG2415S                        |                      | 15V            | 133.3mA        | 82%        |
| FG2424S                        |                      | 24V            | 83.3mA         | 80%        |

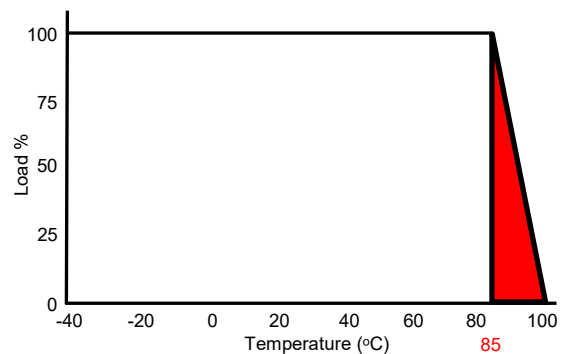
### Models & Ratings - Dual output

| Model Number <sup>(2)(3)</sup> | Input | Output voltage | Output Current <sup>(4)</sup> | Efficiency |
|--------------------------------|-------|----------------|-------------------------------|------------|
| FG0503SD                       | 5V    | ±3.3V          | ±200mA                        | 65%        |
| FG0505SD                       |       | ±5V            | ±200mA                        | 72%        |
| FG0509SD                       |       | ±9V            | ±111.1mA                      | 77%        |
| FG0512SD                       |       | ±12V           | ±83.3mA                       | 78%        |
| FG0515SD                       |       | ±15V           | ±66.67mA                      | 80%        |
| FG0524SD                       |       | ±24V           | ±41.67mA                      | 80%        |
| FG1203SD                       | 12V   | ±3.3V          | ±200mA                        | 67%        |
| FG1205SD                       |       | ±5V            | ±200mA                        | 75%        |
| FG1209SD                       |       | ±9V            | ±111.1mA                      | 77%        |
| FG1212SD                       |       | ±12V           | ±83.3mA                       | 82%        |
| FG1215SD                       |       | ±15V           | ±66.67mA                      | 82%        |
| FG1224SD                       |       | ±24V           | ±41.67mA                      | 82%        |
| FG2403SD                       | 24V   | ±3.3V          | ±200mA                        | 68%        |
| FG2405SD                       |       | ±5V            | ±200mA                        | 75%        |
| FG2409SD                       |       | ±9V            | ±111.1mA                      | 80%        |
| FG2412SD                       |       | ±12V           | ±83.3mA                       | 82%        |
| FG2415SD                       |       | ±15V           | ±66.67mA                      | 82%        |
| FG2424SD                       |       | ±24V           | ±41.67mA                      | 82%        |

### Notes

1. High stock items
2. For DIP package change 'S' for 'D'.
3. Add 'H' to model number for 3000VDC isolation. H6 for 6KV.
4. Dual outputs power-trade
5. Under no load conditions the unit may not meet all specifications
6. 3.3V input models available on request. Please contact Sales.
7. Do not operate continuously in the red area of derating curve

### Derating curve



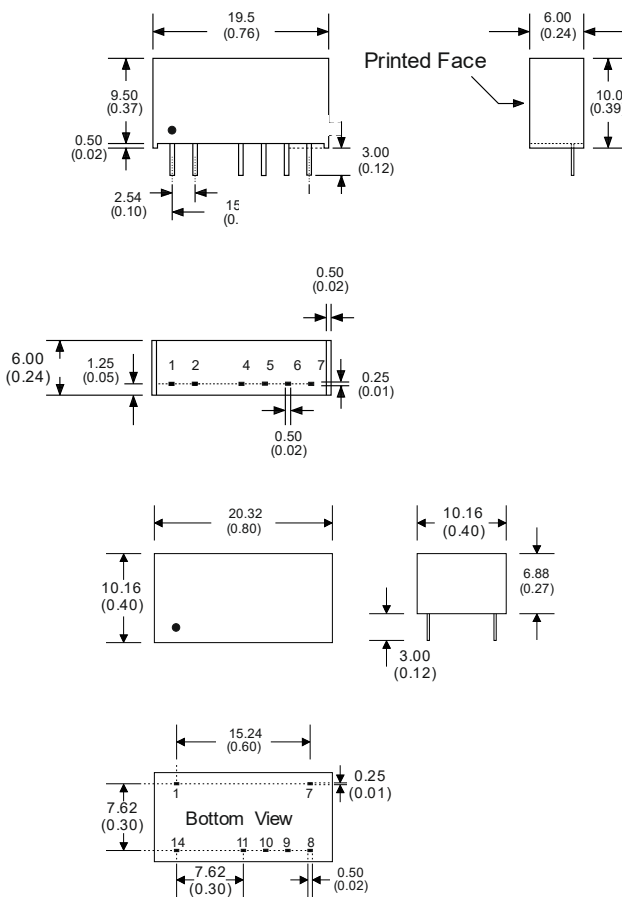
| Input                            |  |
|----------------------------------|--|
| Parameter                        | Rating   |
| Input voltage range              | Nominal ±10%   |
| Input reflected ripple current   | 20mA pk-pk through 12uH inductor                                 |
| Input current no load/ full load | 5V Models 38/555mA. 12V Models 25/222mA. 24V Models 10/105mA.    |
| 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 change) |
| Set point accuracy      | ±3%                          |
| Minimum load            | None                         |
| Ripple & noise          | 75mV pk-pk. 20MHz bandwidth  |
| Maximum capacitive load |                              |

| 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 6000VDC |
| 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 2.3g, DIP 2.6g                             |
| Dimensions       | SIP 0.76 x 0.24 x 0.39", DIP 0.8 x 0.4 x 0.27" |



| SIP Pin Connections |        |       |            |          |
|---------------------|--------|-------|------------|----------|
| Pin                 | Single | Dual  | Single (H) | Dual (H) |
| 1                   | +Vin   | +Vin  | +Vin       | +Vin     |
| 2                   | -Vin   | -Vin  | -Vin       | -Vin     |
| 4                   | -Vout  | -Vout | N.P.       | N.P.     |
| 5                   | N.P.   | 0V    | -Vout      | -Vout    |
| 6                   | +Vout  | +Vout | N.P.       | 0V       |
| 7                   | N.P.   | N.P.  | +Vout      | +Vout    |

| DIP Pin Connections |        |       |            |          |
|---------------------|--------|-------|------------|----------|
| Pin                 | Single | Dual  | Single (H) | Dual (H) |
| 1                   | -Vin   | -Vin  | -Vin       | -Vin     |
| 7                   | N.C.   | N.C.  | N.C.       | N.C.     |
| 8                   | N.P.   | 0V    | +Vout      | +Vout    |
| 9                   | +Vout  | +Vout | N.P.       | 0V       |
| 10                  | N.P.   | N.P.  | -Vout      | -Vout    |
| 11                  | -Vout  | -Vout | N.P.       | N.P.     |
| 14                  | +Vin   | +Vin  | +Vin       | +Vin     |

### Dimension notes

- All dimensions shown in millimetres (inches)
- Pin diameter 0.5 ±0.05 (0.02 ±0.002)
- Case tolerance ±0.5 (±0.002)