

## AFC5-F Series Single output

Total Power: 5W  
Input Voltage: 38 - 72VDC  
# of Outputs: Single

### Special Features

- Linear regulated outputs
- Very low output noise
- 2 x 1 x 0.375 inch package
- Six-sided shielding
- Short circuit protection
- UL94V-0 case
- Available RoHS compliant
- 2 year warranty



Rev.03.07.07  
afc5f\_single  
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The AFC5-F Series of fixed frequency dc-dc converters provide 5 Watts of power, low output noise and tight output regulation, all housed within a 2 x 1 inch case. Six sided shielding to negate radiated noise and a non conductive base to prevent shorting to the PCB are standard features. Short circuit protection, isolation voltage of 500 Vdc, and a voltage accuracy of  $\pm 1\%$  are included to offer the best possible solution to a system designer's low power needs. Ideal applications for the AFC5-F are data acquisition, digital to analog and analog to digital conversion. AFC5-F Series dc-dc converters are suitable for a wide range of general industrial applications, especially where low noise levels are required.



# Specifications

All specifications are typical at nominal input, full load at 25°C unless otherwise stated.

| OUTPUT SPECIFICATIONS              |   |   |
|------------------------------------|---|---|
| Voltage accuracy                   |   | ±1.0%   |
| Line regulation                    | LL to HL  | ±0.5%, max.   |
| Load regulation                    | NL to FL  | ±0.5%   |
| Total error band                   | (See Note 2)                                      | ±3.0%   |
| Ripple and noise<br>5 Hz to 20 MHz |   | 15 mV pk-pk, typ.,<br>1 mV rms, typ.<br>40 mV pk-pk, max. |
| Transient response                 | 50% to 100% load step                             | 50 µs, max.   |
| Temperature coefficient            |   | ±0.03%/°C, max.   |
| Minimum output current             |   | 0 A   |
| Short circuit protection           |   | Indefinite  |
| INPUT SPECIFICATIONS               |   |   |
| Input voltage range                | 5 Vdc<br>12 Vdc                                   | 4.65-5.25 Vdc<br>10.8-13.2 Vdc                            |
| Input filter                       |   | LC filter   |
| Input overvoltage                  | No damage, 5 V nominal<br>No damage, 12 V nominal | 7 V, 10 s<br>15 V, 10 s                                   |
| Reflected ripple current           |   | 400 mA pk-pk  |

| EMC CHARACTERISTICS          |  |   |
|------------------------------|--|---|
| Radiated emissions           | EN55022, EN55011, FCC  | Level A   |
| GENERAL SPECIFICATIONS       |  |   |
| Efficiency                   |  | 64% to 70%  |
| Isolation voltage            | Input to output  | 500 Vdc, min.   |
| Switching frequency          | Fixed (See Note 3)   | 20 kHz, min.  |
| Case material                |  | Black anodised aluminium<br>with non-conductive base                              |
| Flammability rating          |  | Meets UL94V-0   |
| Weight                       |  | 30 g (1.1 oz)   |
| MTBF                         |  | 840,000 hours   |
| ENVIRONMENTAL SPECIFICATIONS |  |   |
| Thermal performance          | Operating, see curve<br>Non-operating<br>Derating<br>Cooling | 0 °C to +105 °C<br>-55 °C to +125 °C<br>(See chart)<br>Free-air convection cooled |
| Relative humidity            | Non-condensing   | 5% to 95% RH  |
| Altitude                     | Operating<br>Non operating                                   | 10,000 feet max.<br>40,000 feet max.  |
| Vibration (See Note 4)       | 5-500 Hz   | 2.4 G rms (approx.)   |

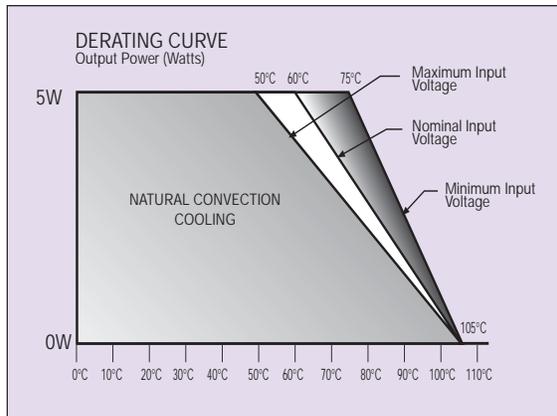
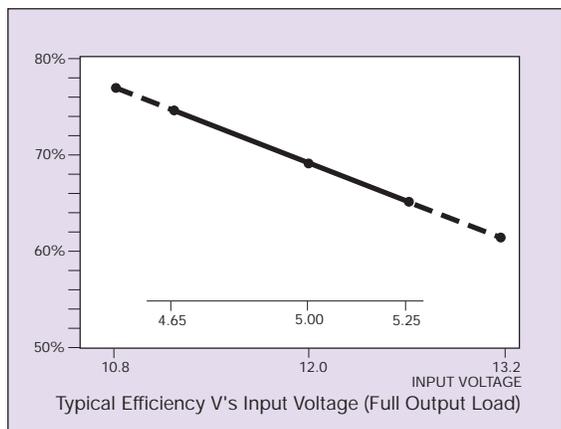
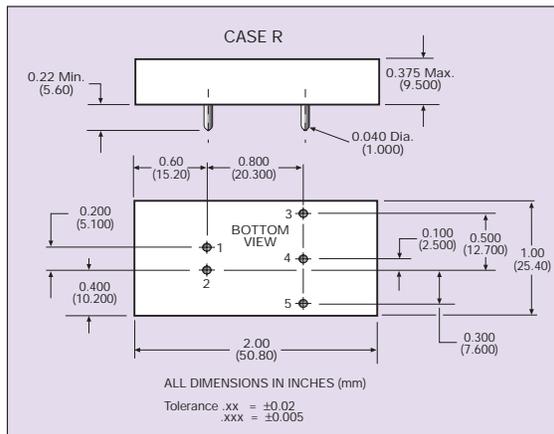
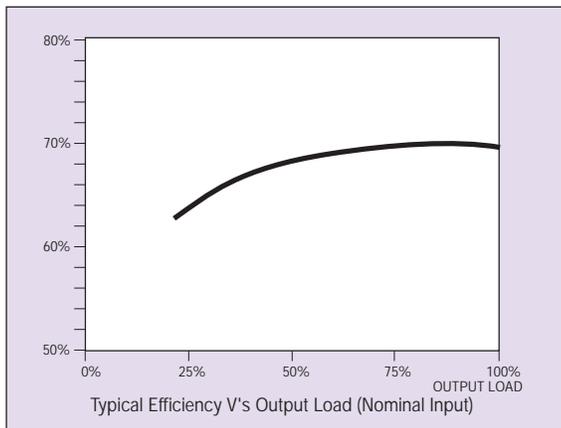
# Specifications Contd.

| INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |                          | TYPICAL EFFICIENCY | MODEL NUMBER <sup>(5,6)</sup> |
|---------------|----------------|----------------|---------------|--------------------------|--------------------|-------------------------------|
|               |                |                | NO LOAD       | FULL LOAD <sup>(1)</sup> |                    |                               |
| 5 Vdc         | 5 Vdc          | 1000 mA        | 66 mA         | 1.64 A                   | 64%                | AFC5-05S05-FJ                 |
| 5 Vdc         | 12 Vdc         | 420 mA         | 44 mA         | 1.52 A                   | 69%                | AFC5-05S12-FJ                 |
| 5 Vdc         | 15 Vdc         | 350 mA         | 60 mA         | 1.58 A                   | 70%                | AFC5-05S15-FJ                 |
| 12 Vdc        | 5 Vdc          | 1000 mA        | 23 mA         | 0.66 A                   | 66%                | AFC5-12S05-FJ                 |
| 12 Vdc        | 12 Vdc         | 420 mA         | 17 mA         | 0.62 A                   | 70%                | AFC5-12S12-FJ                 |
| 12 Vdc        | 15 Vdc         | 350 mA         | 21 mA         | 0.64 A                   | 71%                | AFC5-12S15-FJ                 |

**Notes**

- 1 Maximum value at nominal line voltage.
- 2 Error band is defined as the static output regulation at 25 °C, including initial setting accuracy, input voltage within stated limits and output current within stated limits.
- 3 Fixed frequency design provides for easier input filtering and better noise performance.
- 4 Three orthogonal axes, random vibration, 10 minute test for each axis.
- 5 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- 6 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

| PIN CONNECTIONS |               |
|-----------------|---------------|
| PIN NUMBER      | SINGLE OUTPUT |
| 1               | + Input       |
| 2               | - Input       |
| 3               | + Output      |
| 4               | No Pin        |
| 5               | - Output      |



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