

AFC5-F SERIES

Dual output



- **Linear regulated outputs**
- **Very low output noise**
- **2 x 1 x 0.375 inch package**
- **Six sided shielding**
- **Short circuit protection**
- **UL94V-0 case**

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 500VDC, 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.

[2 YEAR WARRANTY]

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

| OUTPUT SPECIFICATIONS | | |
|----------------------------------|---|--|
| Voltage accuracy | | $\pm 1.0\%$ |
| Voltage balance | | $\pm 1\%$, max. |
| Line regulation | LL to HL | $\pm 0.5\%$, max. |
| Load regulation | NL to FL | $\pm 0.5\%$ |
| Total error band | See Note 2 | $\pm 3.0\%$ |
| Ripple and noise 5Hz to 20MHz | | 15mV pk-pk, typ., 1mV rms, typ. 30mV pk-pk, max. |
| Transient response | 50% to 100% load step | 50 μ s, max. |
| Temperature coefficient | | $\pm 0.03\%/^{\circ}\text{C}$, max. |
| Minimum output current | | 0A |
| Short circuit protection | Output to common +output to -output | Indefinite 10s, max. |
| INPUT SPECIFICATIONS | | |
| Input voltage range | 5VDC 12VDC | 4.65V to 5.25VDC 10.8V to 13.2VDC |
| Input filter | | LC filter |
| Input overvoltage | No damage, 5V nominal No damage, 12V nominal | 7V, 10s 15V, 10s |
| Reflected ripple current | | 400mA pk-pk |

| EMC CHARACTERISTICS | | |
|------------------------------|--|---|
| Radiated emissions | EN55022, EN55011, FCC | Level A |
| GENERAL SPECIFICATIONS | | |
| Efficiency | | 64% to 70% |
| Isolation voltage | Input to output | 500VDC, min. |
| Switching frequency | Fixed, See Note 3 | 20kHz, min. |
| Case material | | Black anodised aluminium with non-conductive base |
| Flammability rating | | Meets UL94V-0 |
| Weight | | 30g (1.1oz) |
| MTBF | Dual output | 580,000 hours |
| ENVIRONMENTAL SPECIFICATIONS | | |
| Thermal performance | Operating, see curve Non-operating Derating Cooling | 0°C to +105°C -55°C to +125°C See chart Free-air convection cooled |
| Relative humidity | Non-condensing | 5% to 95% RH |
| Altitude | Operating Non operating | 10,000 feet max. 40,000 feet max. |
| Vibration, See Note 4 | 5Hz to 500Hz | 2.4G rms (approx.) |

5 Watt Nominal input DC/DC converters

| INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT | | TYPICAL EFFICIENCY | MODEL NUMBER |
|---------------|----------------|----------------|---------------|---------------|--------------------|--------------|
| | | | NO LOAD | FULL LOAD (1) | | |
| 5VDC | ±12VDC | ±150mA | 37mA | 1.16A | 65% | AFC5-05D12-F |
| 5VDC | ±15VDC | ±150mA | 44mA | 1.45A | 65% | AFC5-05D15-F |
| 12VDC | ±12VDC | ±150mA | 14mA | 0.48A | 65% | AFC5-12D12-F |
| 12VDC | ±15VDC | ±150mA | 17mA | 0.61A | 65% | AFC5-12D15-F |

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.

| PIN CONNECTIONS | |
|-----------------|-------------|
| PIN NUMBER | DUAL OUTPUT |
| 1 | + Input |
| 2 | - Input |
| 3 | + Output |
| 4 | Common |
| 5 | - Output |

