

AFC5 SERIES

Single and 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 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 are data acquisition, digital to analog and analog to digital conversion. AFC5 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	Dual outputs	$\pm 1\%$, 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	Single and dual output Single output Dual output	15mV pk-pk, typ., 1mV rms, typ. 40mV pk-pk, max. 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	Single output Dual output, Output to common Dual output, +output to -output	Indefinite 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	Single output Dual output	840,000 hours 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	5VDC	1000mA	66mA	1.64A	64%	AFC5-05S05
5VDC	12VDC	420mA	44mA	1.52A	69%	AFC5-05S12
5VDC	15VDC	350mA	60mA	1.58A	70%	AFC5-05S15
5VDC	±12VDC	±150mA	37mA	1.16A	65%	AFC5-05D12
5VDC	±15VDC	±150mA	44mA	1.45A	65%	AFC5-05D15
12VDC	5VDC	1000mA	23mA	0.66A	66%	AFC5-12S05
12VDC	12VDC	420mA	17mA	0.62A	70%	AFC5-12S12
12VDC	15VDC	350mA	21mA	0.64A	71%	AFC5-12S15
12VDC	±12VDC	±150mA	14mA	0.48A	65%	AFC5-12D12
12VDC	±15VDC	±150mA	17mA	0.61A	65%	AFC5-12D15

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	SINGLE OUTPUT	DUAL OUTPUT
1	+ Input	+ Input
2	- Input	- Input
3	+ Output	+ Output
4	No Pin	Common
5	- Output	- Output

