AFC5 SERIES

Single and dual outputs

Recommended for new design-ins

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

2 YEAR WARRANTY

The AFC5 Series of fixed frequency DC/DC converters provide 5 Watts, low output noise and a tight output regulation 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 ±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.

SPECIFICATION

ALL SPECIFICATIONS ARE TYPICAL AT NOMINAL INPUT, FULL LOAD AND 25°C UNLESS OTHERWISE STATED

OUTPUT SPECIFICATIONS		
Voltage accuracy		±1.0%
Voltage balance	Dual outputs	±1%, max.
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 5Hz to 20MHz	Single and dual output	15mV pk-pk, typ., 1mV rms, typ.
	Single output	40mV pk-pk, max.
	Dual output	30mV pk-pk, max.
Transient response	50% to 100% load step	50µs, max.
Temperature coefficient		±0.03%/°C, max.
Minimum output current		0A
Short circuit protection	Single output	Indefinite
	Dual output, Output to common	Indefinite
	Dual output, +output to –output	10s, max.
INPUT SPECIFICATIONS		
Input voltage range	5VDC	4.65V to 5.25VDC
	12VDC	10.8V to 13.2VDC
Input filter		LC filter
Input overvoltage	No damage, 5V nominal	7V, 10s
	No damage, 12V nominal	15V, 10s
Reflected ripple current		400mA pk-pk

ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS		
Radiated noise	EN55022, EN55011, FCC	Level A
GENERAL SPECIFICATIONS		
Efficiency		64% to 70%
Isolation voltage	Input to output See Note 3	500VDC, min.
Switching frequency	Fixed. See Note 4	20kHz, min.
Case material		Black anodized aluminum with non-conductive base
Flammability rating		Meets UL94V-0
Weight		30g (1.1oz)
MTBF	Single output	840,000 hours
	Dual output	580,000 hours
ENVIRONMENTAL		
Thermal performance	Operating, see curve	0°C to +105°C
	Non-operating	–55°C to +125°C
	Derating	See chart
	Cooling	Free-air convection
Relative humidity	Non-condensing	5% to 95% RH
Altitude	Operating	10,000 feet max.
	Non operating	40,000 feet max.
Vibration	See Note 6	2.4G rms (approx.) 5Hz to 500Hz

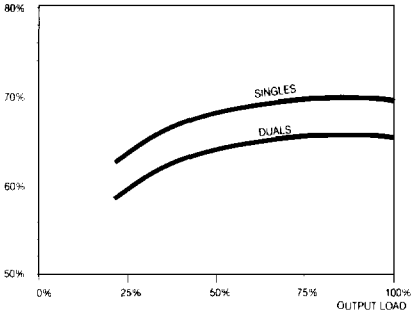
5 Watt
Nominal input DC/DC converters

INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT NO LOAD	INPUT CURRENT FULL LOAD	EFFICIENCY	PART NUMBER
5VDC	5VDC	1000mA	66mA	1.64A	64%	AFC5-05S05-F
5VDC	12VDC	420mA	44mA	1.52A	69%	AFC5-05S12-F
5VDC	15VDC	350mA	60mA	1.58A	70%	AFC5-05S15-F
5VDC	±12VDC	±150mA	37mA	1.16A	65%	AFC5-05D12-F
5VDC	±15VDC	±150mA	44mA	1.45A	65%	AFC5-05D15-F
12VDC	5VDC	1000mA	23mA	0.66A	66%	AFC5-12S05-F
12VDC	12VDC	420mA	17mA	0.62A	70%	AFC5-12S12-F
12VDC	±12VDC	±150mA	14mA	0.48A	65%	AFC5-12D12-F
12VDC	±15VDC	±150mA	17mA	0.61A	65%	AFC5-12D15-F

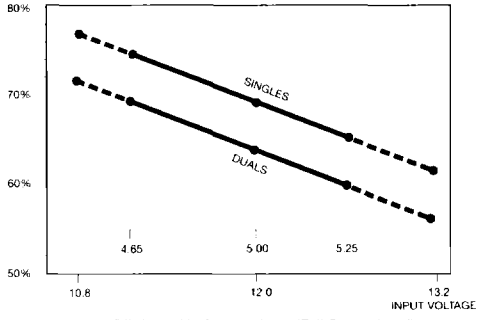
Notes

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. In many cases the isolation voltage may be upgraded beyond 500VDC. Consult factory or local distributor for details.
4. Fixed frequency design provides for easier input filtering and better noise performance.
5. Standard specifications are conservative and can be optimized for specific applications. In particular, operation down to –25°C and different input and output voltages. Consult factory for details.
6. Three orthogonal axes, random vibration, 10 minute test for each axes.

PIN NUMBER	SINGLE OUTPUT	DUAL OUTPUT
1	+ Input	+ Input
2	– Input	– Input
3	+ Output	+ Output
4	No Pin	Common
5	– Output	– Output

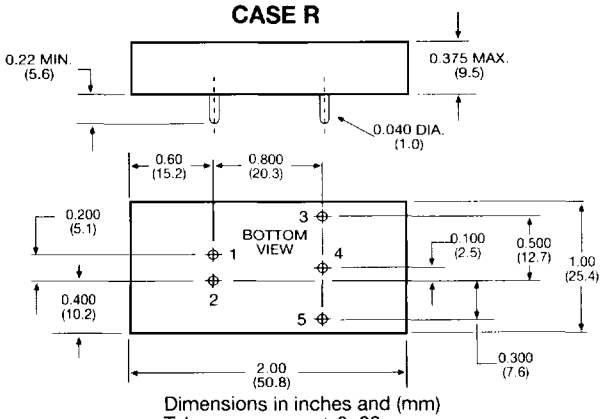


Typical Efficiency V's Output Load (Nominal Input)



Typical Efficiency V's Input Voltage (Full Output Load)

CASE R



Dimensions in inches and (mm)
Tolerance .xx = ± 0. 02
.xxx = ± 0.005

DERATING CURVE
Output Power (Watts)