

100FR series

Single & Dual Output DC/DC Converter



DESCRIPTIONS

The 100FR series is a family of cost effective, yet high performance 1 Watt DC/DC converters. These converters combine miniature packaging in a 24-pin DIP compatible case with high performance features such as 500 VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line/load regulation.

Units operate from power busses of 5 and 12 and provide output voltage levels of 5, 12, 15, ± 12 and ± 15 VDC.

OUTPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Output Voltage Set Point	± 2.0	± 5.0		% Output voltage at nominal line & FL
Output Voltage Balance (Duals)	± 1.0	± 3.0		% Equal Output Loads
Line Regulation	± 0.1	± 0.5		% Output voltage measured from min. input line to maximum
Load Regulation (5 Vout)	± 0.1	± 0.4		% Output voltage measured from FL to 10% load
Ripple/Noise	40	50		mV p-p, Nom.Line @FL, 20MHz B.W., using 1 μ f bypass capacitor
Ripple/Noise		75		mV p-p, Over Line, Load & Temp., 20 MHz B.W., using 1 μ f bypass capacitor
Overload Protection	120			%Rated Output Load
Short Circuit Protection				Momentary
Temperature Coefficient	± 0.01	± 0.02		% per degree C

FEATURES

- 24 Pin DIP Package
- 7.5W/In³ Power Density
- Available in 5, 12 VDC Inputs
- Continuous Short Circuit Protection
- Internal LC Filter
- Low Cost

INPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Input Voltage				
5 VDC Input Models	4.5	5	5.5	VDC
12 VDC Input Models	10.8	12	13.2	VDC
Input Fuse Requirements				
5 VDC Input Models		500		mA; Slow blow type
12 VDC Input Models		250		mA; Slow blow type
Short Circuit Input Power			1500	mW
Input Filter				LC Filter

GENERAL CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Switching Frequency	40	100		kHz
Isolation Voltage	500			VDC, 1 minute
Isolation Resistance	1000			Mohm, 500VDC
Isolation Capacitance		65	100	pF, 100kHz, 1Volt
MTBF (MIL-HBK-217F)	900			Thousand Hours, +25°C, Ground Benign

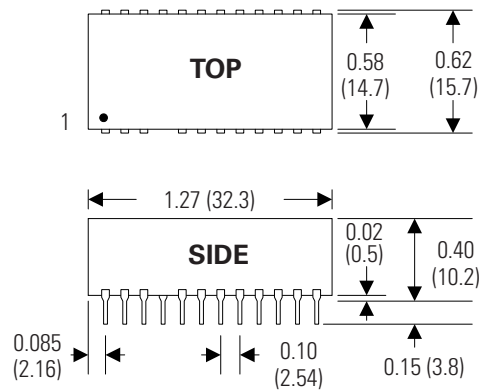
ENVIRONMENTAL SPECIFICATIONS

	Min	Typ	Max	Unit/Comments
Operating Temp. Range	-25		+71	°C; Ambient
Storage Temp. Range	-40		+125	°C
Relative Humidity			+95	% Humidity; non-condensing
Cooling				Free-Air Convection

PHYSICAL CHARACTERISTICS

	Unit/Comments
Case Size	1.27 X 0.62 X 0.4 inches (32.3 X 15.7 X 10.2 mm)
Case Material	Non-Conductive Black Plastic
Flammability	UL94V-0
Weight	12 Grams

OUTLINE DRAWING



PIN OUT CHART

Pins	Single	Dual
1	+ Vin	+ Vin
2	NC	- Vout
3	NC	Common
10	- Vout	Common
11	+ Vout	+ Vout
12	- Vin	- Vin
13	- Vin	- Vin
14	+ Vout	+ Vout
15	- Vout	Common
22	NC	Common
23	NC	- Vout
24	+ Vin	+ Vin

NC = No Connection

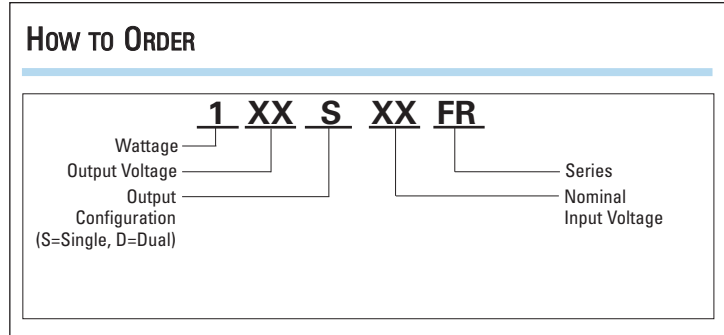
Notes:

1. Unless otherwise specified dimensions are in inches (mm).

Tolerances	Inches	mm
	X.XX = ±0.02	X.X = ±0.5
	X.XXX = ±0.010	X.XX = ±0.25

All specifications are typical at nominal input, nominal load and 25° C unless otherwise specified.
External, low ESR, 10 microfarad (minimum) capacitor across output is recommended for operation.

How To ORDER



MODEL SELECTION CHART

Model	Nominal Input Voltage (VDC)	Output Voltage (VDC)	Full Load Output Current (mA)	No Load Input Current (mA)	Full Load Input Current (mA)	Reflected Ripple Current (mA)	Efficiency @ FL (%)
105S5FR	5	5	100	55	220	22	45
112S5FR	5	12	80	70	340	34	56
115S5FR	5	15	65	70	340	34	57
112D5FR	5	±12	±40	80	360	36	53
115D5FR	5	±15	±33	90	360	36	55
105S12FR	12	5	100	55	90	9	46
112S12FR	12	12	80	70	140	14	57
115S12FR	12	15	65	70	150	15	54
112D12FR	12	±12	±40	80	150	15	53
115D12FR	12	±15	±33	90	150	15	55

DERATING CURVES

MODEL 100FR

