



FWA10S & FWA10D

10W SINGLE & DUAL DC/DC CONVERTERS

Functional Description

The FWA10S and FWA10D series of regulated 10W single & dual DC/DC converters feature industry standard pinout in a standard 24-pin metal-DIP package with a minimum isolation voltage of 2000Vdc, maximum efficiency of 87%, pulse frequency modulation, SMT construction, short circuit protection, and operating temperature range from -40°C to +75°C.



Electrical Specifications: Regulated

INPUT SPECIFICATIONS

Measured at 25°C with the condition of V_{IN} = Nominal and Full Load. Specifications subject to change without notice.

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Input Voltage Range	2:1; See Model Selection Guide				
Input Filter	π				
Start Up Times	V_{IN} = Nominal Input		300		ms
Remote ON/OFF	DC/DC Converter ON, leave open, See Note 1	3.5		12	V
Remote ON/OFF	DC/DC Converter OFF, short to ground, See Note 1	0		1.2	V

OUTPUT SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Output Voltage	See Model Selection Guide				
Output Current	See Model Selection Guide				
Output Voltage Accuracy				±1.5	%
Ripple & Noise	@20MHz BW, V_{IN} = Nominal Input, See Note 2			50	mV _{PP}
Line Regulation	Minimum V_{IN} to maximum V_{IN}			±1	%
Load Regulation	20% FL to FL, single models			±1	%
Load Regulation	20% FL to FL, dual models			±1	%
Cross Regulation	20% FL to FL, dual models only, See Note 3			±5	%
Minimum Load	10% of Full Load, See Note 4				
Over Load Protection			140		%
Short Circuit Protection	Continuous, Auto-Restarting				
Temperature Coefficient				±0.5	%/°C

GENERAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Efficiency @ FL	See Model Selection Guide				
Isolation Voltage (1 min.), Input to Output		2000			Vdc
Isolation Resistance		1			GΩ
Isolation Capacitance				1200	pF
Operating Frequency			400		kHz
Conductive and Radiated Emissions	EN55022, Class A, See Note 5				
Vibration	10-55Hz, 10G, 30 Min along X,Y and Z				

ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Operating Temperature Range	Ambient; V_{IN} = Nominal Input	-40		+75	°C
Storage Temperature Range		-50		+125	°C
Case Temperature				100	°C
Humidity				95	%
MTBF	per MIL-HDBK-217F@25 °C		1000K		hrs

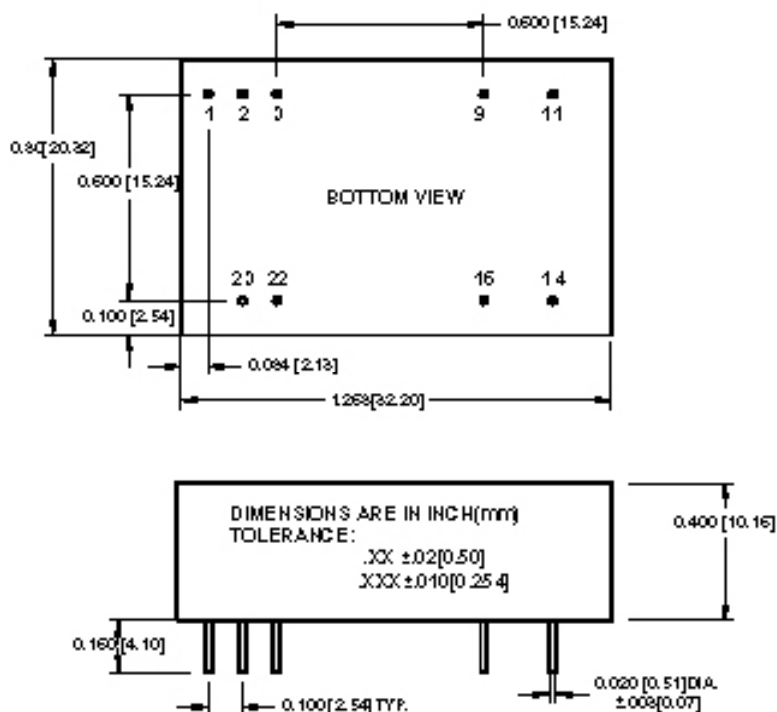
PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (L×W×H)	1.26×0.80×0.40 in. (32.00×20.32×10.20mm)				
Weight	0.46 oz. (13g)				
Case Material	Nickel Plated Copper				
Potting Material	Epoxy (UL94V-0)				

MODEL SELECTION GUIDE

MODEL NUMBER	INPUT VOLTAGE (Vdc)	OUTPUT VOLTAGE (Vdc)	OUTPUT CURRENT (mA)	EFFICIENCY (%)
FWA10S3.3/12	9-18	3.3	2000	85
FWA10S5/12	9-18	5	2000	87
FWA10S12/12	9-18	12	833	86
FWA10S15/12	9-18	15	667	86
FWA10SS3.3/24	18-36	3.3	2000	85
FWA10S5/24	18-36	5	2000	87
FWA10S12/24	18-36	12	833	86
FWA10S15/24	18-36	15	667	86
FWA10S3.3/48	36-72	3.3	2000	84
FWA10S5/48	36-72	5	2000	86
FWA10S12/48	36-72	12	833	85
FWA10S15/48	36-72	15	667	85
FWA10D5/12	9-18	±5	±1000	84
FWA10D12/12	9-18	±12	±416	86
FWA10D15/12	9-18	±15	±333	86
FWA10D5/24	18-36	±5	±1000	84
FWA10D12/24	18-36	±12	±416	86
FWA10D15/24	18-36	±15	±333	86
FWA10D5/48	36-72	±5	±1000	84
FWA10D12/48	36-72	±12	±416	86
FWA10D15/48	36-72	±15	±333	86

Mechanical Specifications



Pin	Function	
	FWA10S	FWA10D
1	ON/OFF	ON/OFF
22,23	+V _{IN}	+V _{IN}
2,3	-V _{IN} (INPUT GND)	-V _{IN} (INPUT GND)
9	NC	COMM
11	NC	-V _{OUT}
14	+V _{OUT}	+V _{OUT}
16	-V _{OUT} (OUT GND)	COMM

Notes:

1. The ON/OFF pin voltage is referenced to negative input.
2. Measured with 20MHz bandwidth and 0.1uF ceramic capacitor
3. One load is 25% to 100% of full load, while the other load is 100% full load. The output voltage is within ±5%.
4. The converter requires a minimum of 10% of full load to maintain specific regulation.
5. Requires external filter to meet EN55022 Class A.