FWA5S & FWA5D

5W SINGLE & DUAL DC/DC CONVERTERS

Functional Description

The FWA5S and FWA5D series of regulated 5W single & dual DC/DC converters feature an industry standard pinout in a 24-pin DIP package with a minimum isolation voltage of 2000Vdc (4000Vdc optional), maximum efficiency of 86%, pulse frequency modulation, SMT construction, short circuit protection, and an operating temperature range from -40°C to +75°C.

Electrical Specifications: Regulated

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

INPUT SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Input Voltage Range	2:1; See Model Selection Guide				
Input Filter	π				

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	±2	%
Ripple & Noise	@20MHz BW, V_{IN} = Nominal Input		30	50	mV_{PP}
Line Regulation	Minimum V_{IN} to maximum V_{IN}		±0.1	±0.2	%
Load Regulation	20% FL to FL		±0.2	±0.5	%
Short Circuit Protection	Continuous, Auto-Restarting				

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			45		pF
Operating Frequency	FL to 50% FL to 20% FL; V_{IN} = Nominal Input		120		kHz

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			48		°C
Humidity				95	%
MTBF	per MIL-HDBK-217F		9×10^5		hrs

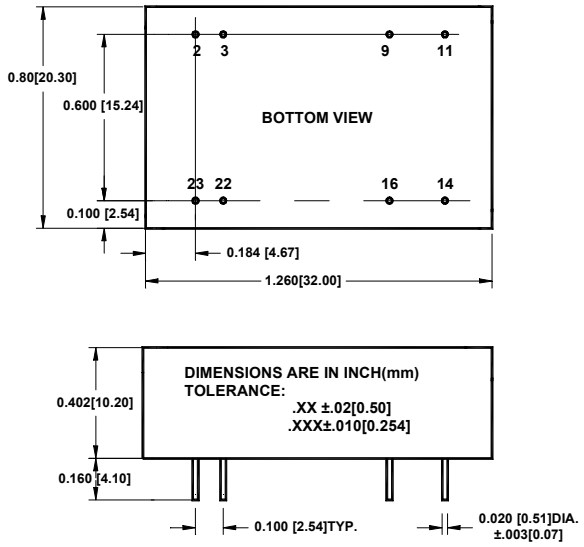
PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (L×W×H)	1.26×0.80×0.40 in. (32.00×20.30×10.20mm)				
Weight	0.46 oz. (13g)				
Case Material	Non-conductive black plastic				
Potting Material	Epoxy (UL94V-0)				

MODEL SELECTION GUIDE (Insert **I** after Model Number for 4000Vdc minimum Isolation Voltage. Insert **M** after Model Number for Metal Case.)

MODEL NUMBER	OUTPUT VOLTAGE (Vdc)	OUTPUT CURRENT (mA)	INPUT VOLTAGE (Vdc)	EFFICIENCY (%)
FWA5S3.3/12	3.3	1200	9–18	76
FWA5S5/12 / FWA5D5/12	5 / ±5	1000 / ±500	9–18	80
FWA5S9/12 / FWA5D9/12	9 / ±9	556 / ±278	9–18	82
FWA5S12/12 / FWA5D12/12	12 / ±12	420 / ±210	9–18	84
FWA5S15/12 / FWA5D15/12	15 / ±15	340 / ±170	9–18	85
FWA5S3.3/24	3.3	1200	18–36	78
FWA5S5/24 / FWA5D5/24	5 / ±5	1000 / ±500	18–36	81
FWA5S9/24 / FWA5D9/24	9 / ±9	556 / ±278	18–36	84
FWA5S12/24 / FWA5D12/24	12 / ±12	420 / ±210	18–36	85
FWA5S15/24 / FWA5D15/24	15 / ±15	340 / ±170	18–36	86
FWA5S3.3/48	3.3	1200	36–72	79
FWA5S5/48 / FWA5D5/48	5 / ±5	1000 / ±500	36–72	81
FWA5S9/48 / FWA5D9/48	9 / ±9	556 / ±278	36–72	83
FWA5S12/48 / FWA5D12/48	12 / ±12	420 / ±210	36–72	84
FWA5S15/48 / FWA5D15/48	15 / ±15	340 / ±170	36–72	85

Mechanical Specifications



Pin	Function	
	SINGLE **FWA5S**	***DUAL*** **FWA5D**
2,3	$-V_{IN}$ (GND)	$-V_{IN}$ (GND)
9	NC	COM
11	NC	$-V_{OUT}$
14	$+V_{OUT}$	$+V_{OUT}$
16	$-V_{OUT}$	COM
22,23	$+V_{IN}$ (V_{CC})	$+V_{IN}$ (V_{CC})