



Functional Description

The FWA3S and FWA3D series of regulated 3W single & dual DC/DC converters feature industry standard pinout in a 24-pin DIP package with a minimum isolation voltage of 2000Vdc (4000Vdc optional), maximum efficiency of 86%, SMT construction, short circuit protection and operating temperature range from -40°C to +85°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				

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			50	mV _{pp}
Line Regulation	Minimum V_{in} to maximum V_{in}		±0.05	±0.2	%
Load Regulation	10% FL to FL		±0.1	±0.4	%
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			40		pF
Operating Frequency	FL to 10% FL	100		400	kHz

ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Operating Temperature Range, 5V _{IN}	Ambient	-40		+80	°C
Operating Temperature Range, 12, 24, 48V _{IN}		-40		+85	°C
Storage Temperature Range		-50		+125	°C
Case Temperature			40		°C
Humidity				95	%
MTBF	per MIL-HNBK-217F		10 ⁶		hrs

PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (LxWxH)	1.26x0.80x0.40 in. (32.00x20.30x10.20mm)				
Weight	0.42 oz. (12g)				
Case Material	Non-conductive black plastic				
Potting Material	Epoxy (UL94V-0)				

MODEL SELECTION GUIDE (Insert \pm after Model Number for 4000Vdc minimum Isolation Voltage)

MODEL NUMBER	OUTPUT VOLTAGE (Vdc)	OUTPUT CURRENT (mA)	INPUT VOLTAGE (Vdc)	EFFICIENCY (%)
FWA3S3.3/5	3.3	900	4.5–9	67
FWA3S5/5 / FWA3D5/5	5 / \pm 5	600 / \pm 300	4.5–9	71
FWA3S9/5 / FWA3D9/5	9 / \pm 9	333 / \pm 167	4.5–9	74
FWA3S12/5 / FWA3D12/5	12 / \pm 12	250 / \pm 125	4.5–9	75
FWA3S15/5 / FWA3D15/5	15 / \pm 15	200 / \pm 100	4.5–9	76
FWA3S3.3/12	3.3	900	9–18	75
FWA3S5/12 / FWA3D5/12	5 / \pm 5	600 / \pm 300	9–18	77
FWA3S9/12 / FWA3D9/12	9 / \pm 9	333 / \pm 167	9–18	81
FWA3S12/12 / FWA3D12/12	12 / \pm 12	250 / \pm 125	9–18	83
FWA3S15/12 / FWA3D15/12	15 / \pm 15	200 / \pm 100	9–18	84
FWA3S3.3/24	3.3	900	18–36	76
FWA3S5/24 / FWA3D5/24	5 / \pm 5	600 / \pm 300	18–36	79
FWA3S9/24 / FWA3D9/24	9 / \pm 9	333 / \pm 167	18–36	82
FWA3S12/24 / FWA3D12/24	12 / \pm 12	250 / \pm 125	18–36	84
FWA3S15/24 / FWA3D15/24	15 / \pm 15	200 / \pm 100	18–36	86
FWA3S3.3/48	3.3	900	36–72	78
FWA3S5/48 / FWA3D5/48	5 / \pm 5	600 / \pm 300	36–72	80
FWA3S9/48 / FWA3D9/48	9 / \pm 9	333 / \pm 167	36–72	83
FWA3S12/48 / FWA3D12/48	12 / \pm 12	250 / \pm 125	36–72	85
FWA3S15/48 / FWA3D15/48	15 / \pm 15	200 / \pm 100	36–72	85

Mechanical Specifications

DIMENSIONS ARE IN INCH(mm)
TOLERANCE:
.XX \pm 0.02[0.50]
.XXX \pm 0.010[0.254]

0.402[10.20]
0.160[4.10]
0.600[15.24]
0.100[2.54] TYP.
0.020[0.51] DIA. \pm 0.003[0.07]

0.80[20.30]
0.600[15.24]
0.100[2.54]
0.184[4.67]
1.260[32.00]

BOTTOM VIEW

2 3 9 11
23 22 16 14

Pin	Function	
	SINGLE FWA3S	DUAL FWA3D
2,3	-V _{IN}	-V _{IN}
9	NC	COM
11	NC	-V _{OUT}
14	+V _{OUT}	+V _{OUT}
16	-V _{OUT}	COM
22,23	+V _{IN}	+V _{IN}