



# FWA15S & FWA15D

## 15W SINGLE & DUAL DC/DC CONVERTERS

### Features

- 15 Watts Output Power(PWM Design)
- 2:1 Wide Input Voltage Range
- 2000VDC Isolation( "H" means 3000VDC)
- Remote On/Off control
- Continuous Short Circuit Protection
- UL 1950 Component Recognized
- Standard 2" x 1" Metal Package
- High Efficiency up to 86%
- RoHS Compliant

### 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	$\pi$				
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				±2	%
Ripple & Noise	@20MHz BW, $V_{IN}$ = Nominal Input, See Note 2			100	mV <sub>PP</sub>
Line Regulation	Minimum $V_{IN}$ to maximum $V_{IN}$			±1	%
Load Regulation	25% FL to FL, single models			±1	%
Load Regulation	25% FL to FL, dual models			±2	%
Cross Regulation	25% FL to FL, dual models only, See Note 3			±5	%
Minimum Load	10% of Full Load, See Note 4	10			%
Over Load Protection			140		%
Short Circuit Protection	Continuous, Auto-Restarting				
Temperature Coefficient				±0.05	%/°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			300		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		+71	°C
Storage Temperature Range		-55		+105	°C
Case Temperature				100	°C
Humidity		5		95	%
MTBF	per MIL-HDBK-217F@25 °C		>700K		hrs

**PHYSICAL CHARACTERISTICS**

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (L×W×H)	2.00 × 1.00 ×0.40 in. (50.80 ×25.40×10.20mm)				
Weight	0.95 oz. (27g)				
Case Material	Nickel Plated Copper				
Base Material	Non-Conductive Black Plastic				
Potting Material	Epoxy (UL94V-0)				

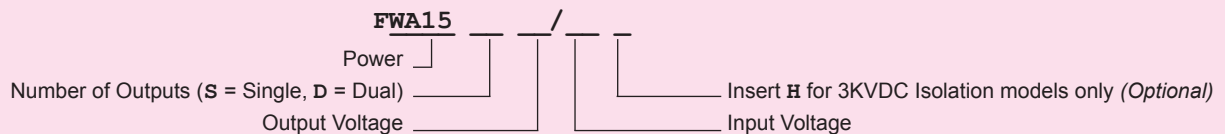
**MODEL SELECTION GUIDE**

MODEL NUMBER	INPUT VOLTAGE(Vdc)	INPUT CURRENT(mAdc)	OUTPUT VOLTAGE(Vdc)	OUTPUT CURRENT(mA)	EFFICIENCY (%)
FWA15S3.3/12	9-18	982	3.3	3000	84
FWA15S5/12	9-18	1453	5	3000	86
FWA15S12/12	9-18	1471	12	1250	85
FWA15S15/12	9-18	1471	15	1000	85
FWA15SS3.3/24	18-36	485	3.3	3000	85
FWA15S5/24	18-36	781	5	3000	87
FWA15S12/24	18-36	727	12	1250	86
FWA15S15/24	18-36	727	15	1000	86
FWA15S3.3/48	36-75	246	3.3	3000	84
FWA15S5/48	36-75	363	5	3000	86
FWA15S12/48	36-75	368	12	1250	85
FWA15S15/48	36-75	368	15	1000	85
FWA15D5/12	9-18	1506	±5	±1500	83
FWA15D12/12	9-18	1471	±12	±625	85
FWA15D15/12	9-18	1471	±15	±500	85
FWA15D5/24	18-36	774	±5	±1500	84
FWA15D12/24	18-36	727	±12	±625	86
FWA15D15/24	18-36	727	±15	±500	86
FWA15D5/48	36-75	376	±5	±1500	83
FWA15D12/48	36-75	368	±12	±625	85
FWA15D15/48	36-75	368	±15	±500	85

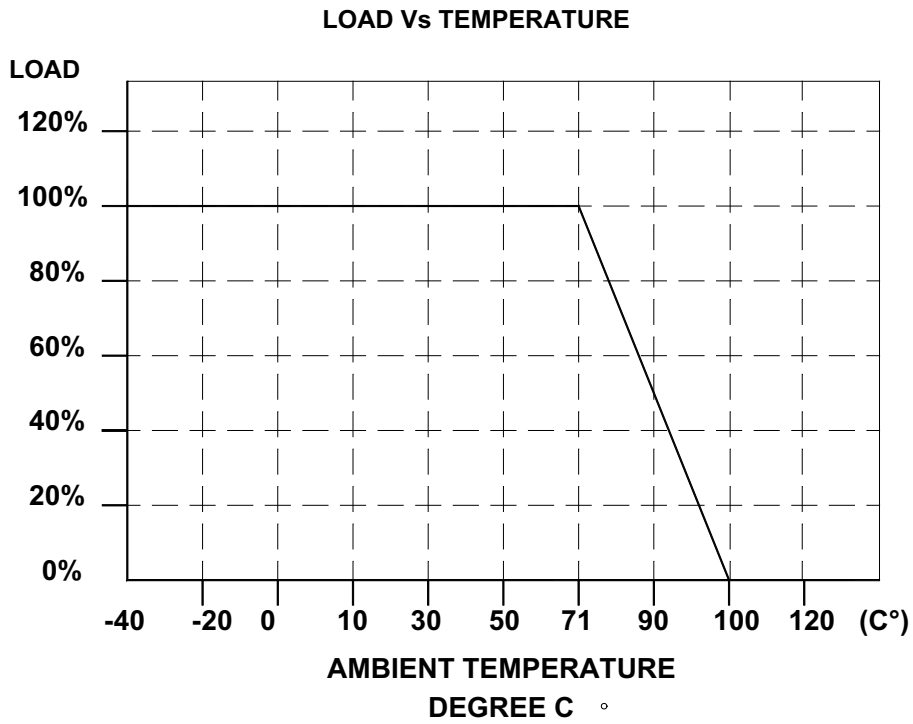
**Notes:**

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.

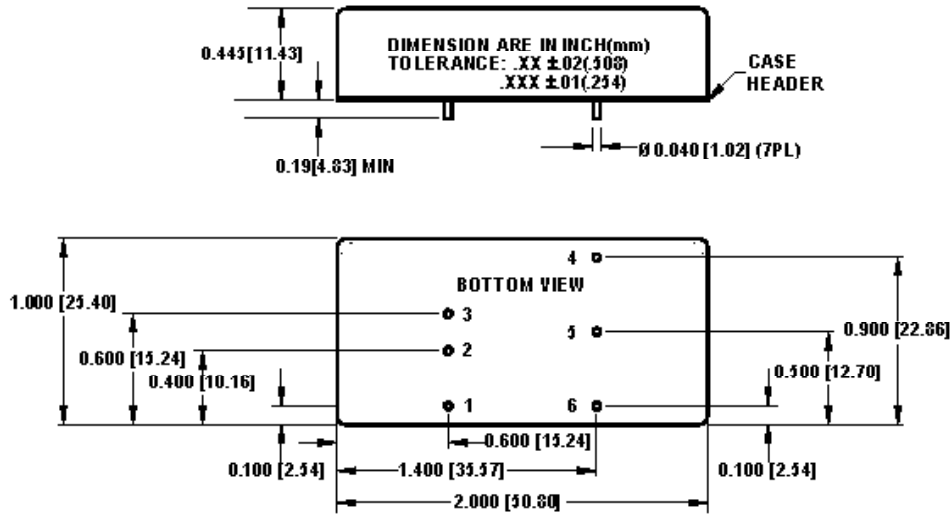
**ORDERING GUIDE**



## Power Derating Curve



## Mechanical Specifications



Pin	Function	
	SINGLE	DUAL
1	ON/OFF	ON/OFF
2	-V <sub>IN</sub>	-V <sub>IN</sub>
3	+V <sub>IN</sub>	+V <sub>IN</sub>
4	+V <sub>OUT</sub>	+V <sub>OUT</sub>
5	NO PIN	GND (COM)
6	GND	-V <sub>OUT</sub>