

# DC/DC Converters

## 3 Watts WA Series

**XPiQ inc.**  
Intelligent Design Quality Product



- 2:1 Input Range
- Optional 4:1 Input Range
- Isolated Outputs
- Efficiency to 74%
- Input  $\pi$  Filter
- Fully Regulated Outputs
- Optional 3 kVDC Isolation

## Specification

### Input

- **Input Voltage Range**
  - 5 V (4.5-6.0 VDC)
  - 12 V (9-18 or 9-36 VDC - A version)
  - 24 V (18-36 or 20-72 VDC - A version)
  - 48 V (36-72 VDC)
- **Input Filter**
  - $\pi$  Network

### Output

- **Output Power**
  - 3 Watts (2.5 W for 5 V input versions)
- **Output Voltage**
  - 5, 12 & 15 V single & dual input versions
- **Voltage Accuracy**
  - $\pm 2\%$  max
- **Line Regulation**
  - $\pm 1\%$  max
- **Load Regulation**
  - $\pm 0.5\%$  max for 10-100% load change single output models,
  - $\pm 1.0\%$  max for 25-100% load change dual output models
- **Ripple & Noise**
  - 5 V 100 mV pk-pk max
  - 12 V & 15 V 1% pk-pk max (20 MHz bandwidth)
- **Temperature Coefficient**
  - $\pm 0.5\%/^{\circ}\text{C}$  max
- **Short Circuit Protection**
  - Continuous

### General

- **Switching Frequency**
  - 100 kHz typical
- **Efficiency**
  - See Table
- **Isolation**
  - 500 VDC input to output (1000 M $\Omega$ /80pF)
  - Optional high isolation version available, 3000 VDC input to output (1000 M $\Omega$ /80 pF)
- **Dimensions**
  - 0.80" x 1.25" x 0.50"
- **Weight**
  - 20 g approx

### Environmental

- **Operating Temperature**
  - -25  $^{\circ}\text{C}$  to +71  $^{\circ}\text{C}$
- **Storage Temperature**
  - -40  $^{\circ}\text{C}$  to +100  $^{\circ}\text{C}$

### Safety

- **Safety Approvals**
  - UL1950 for XU versions only

## OUTPUT VOLTAGE & CURRENT RATINGS

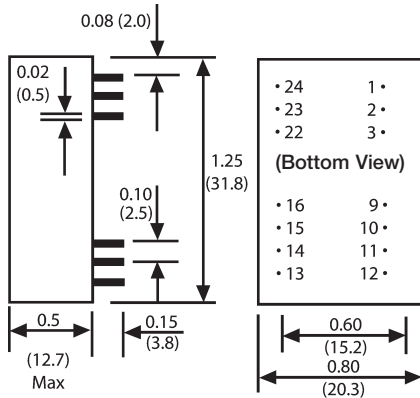
**WA**

Input Voltage <sup>(1,2,5)</sup>	Output Voltage	Output Current	Input Current <sup>(6)</sup>		Efficiency	Model Number <sup>(3,4)</sup>
			No Load	Full Load		
4.5-6.0 VDC	5 VDC	500 mA	15 mA	850 mA	70%	WA101
	12 VDC	250 mA	15 mA	800 mA	75%	<b>WA102</b>
	15 VDC	200 mA	15 mA	800 mA	75%	WA103
	±5 VDC	±250 mA	25 mA	850 mA	70%	<b>WA104</b>
	±12 VDC	±125 mA	25 mA	800 mA	75%	WA105
	±15 VDC	±100 mA	25 mA	800 mA	75%	WA106
9-18 VDC	5 VDC	500 mA	7.5 mA	340 mA	73%	<b>WA201</b>
	12 VDC	250 mA	7.5 mA	320 mA	78%	<b>WA202</b>
	15 VDC	200 mA	7.5 mA	320 mA	78%	<b>WA203</b>
	±5 VDC	±250 mA	12.0 mA	340 mA	73%	WA204
	±12 VDC	±125 mA	12.0 mA	320 mA	78%	<b>WA205</b>
	±15 VDC	±100 mA	12.0 mA	320 mA	78%	WA206
18-36 VDC	5 VDC	500 mA	5.0 mA	168 mA	74%	<b>WA301</b>
	12 VDC	250 mA	5.0 mA	156 mA	80%	<b>WA302</b>
	15 VDC	200 mA	5.0 mA	156 mA	80%	<b>WA303</b>
	±5 VDC	±250 mA	7.5 mA	168 mA	74%	WA304
	±12 VDC	±125 mA	7.5 mA	156 mA	80%	<b>WA305</b>
	±15 VDC	±100 mA	7.5 mA	156 mA	80%	WA306
36-72 VDC	5 VDC	600 mA	2.0 mA	82 mA	76%	<b>WA401</b>
	12 VDC	250 mA	2.0 mA	78 mA	80%	<b>WA402</b>
	15 VDC	200 mA	2.0 mA	78 mA	80%	WA403
	±5 VDC	±250 mA	3.0 mA	82 mA	76%	WA404
	±12 VDC	±125 mA	3.0 mA	80 mA	78%	<b>WA405</b>
	±15 VDC	±100 mA	3.0 mA	80 mA	78%	WA406

**Notes**

1. Nominal input voltage 5, 12, 24 or 48 V DC.
2. For optional 4:1 input range: 9-36 VDC: Add suffix 'A' to WA2xx model number, 20-72 VDC: Add suffix 'A' to WA3xx model number.
3. For 3000 V DC isolation add suffix 'X' to model number.
4. For UL1950 approval, add suffix 'XU' to model number. UL approved product is only available with 3000 V DC isolation and option 'X' pinout.
5. 'X' or 'XU' versions are not available with optional 4:1 input range.
6. Input current is at nominal input voltage.
7. Part numbers in bold type are standard stock models, all others are build to order.

## Mechanical Details



• 24	1 •
• 23	2 •
• 22	3 •
<b>(Bottom View)</b>	
• 16	9 •
• 15	10 •
• 14	11 •
• 13	12 •

PIN CONNECTIONS		
Pin	Single Output	Dual Output
1	+ V Input	+ V Input
2	N/C	- V Output
3	N/C	Common
9	No Pin	No Pin
10	- V Output	Common
11	+ V Output	+ V Output
12	- V Input	- V Input
13	- V Input	- V Input
14	+ V Output	+ V Output
15	- V Output	Common
16	No Pin	No Pin
22	N/C	Common
23	N/C	- V Output
24	+ V Input	+ V Input

OPTION 'X' PIN CONNECTIONS		
Pin	Single Output	Dual Output
1	No Pin	No Pin
2	- V Input	- V Input
3	- V Input	- V Input
9	N/C	Common
10	N/C	N/C
11	N/C	- V Output
12	No Pin	No Pin
13	No Pin	No Pin
14	+ V Output	+ V Output
15	N/C	N/C
16	- V Output	Common
22	+ V Input	+ V Input
23	+ V Input	+ V Input
24	No Pin	No Pin

