

3 Watts

WA Series



- 2:1 Input Range
- Optional 4:1 Input Range
- Efficiency to 74%
- Input Pi Filter
- Fully Regulated Outputs
- Optional 3 kVDC Isolation
- UL Approved Versions

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 5 V (4.5-6.0 VDC) • 12 V (9-18 or 9-36 VDC - A version) • 24 V (18-36 or 18-72 VDC - A version) • 48 V (36-72 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Input Filter	<ul style="list-style-type: none"> • Pi network
Undervoltage Lockout	<ul style="list-style-type: none"> • Turn On > 65% nominal input • Turn Off < 62% nominal input

Output

Output Voltage	<ul style="list-style-type: none"> • See table
Output Voltage Balance	<ul style="list-style-type: none"> • $\pm 1\%$ max, dual output models
Initial Set Accuracy	<ul style="list-style-type: none"> • $\pm 2\%$ max
Start Up Delay	<ul style="list-style-type: none"> • 30 ms max
Start Up Rise Time	<ul style="list-style-type: none"> • 35 ms typical
Line Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max (high line to low line)
Load Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max for 10-100% load change single output models, $\pm 1.0\%$ max for 25-100% load change dual output models
Cross Regulation	<ul style="list-style-type: none"> • 2.2% on dual output models
Transient Response	<ul style="list-style-type: none"> • <1.5% max deviation, recovering within 200 μs for a 50% load change
Ripple & Noise	<ul style="list-style-type: none"> • 100 mV or 1% pk-pk, whichever is greater, 20MHz BW
Overcurrent Protection	<ul style="list-style-type: none"> • 110-130% trip and restart (Hiccup mode)
Short Circuit Protection	<ul style="list-style-type: none"> • Continuous with auto recovery
Maximum Capacitive Load	<ul style="list-style-type: none"> • 30,000 μF
Temperature Coefficient	<ul style="list-style-type: none"> • ± 0.05 /$^{\circ}$C max

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation	<ul style="list-style-type: none"> • 500 VDC Input to Output (1000 M /80 pF) • Optional high isolation version, 3000 VDC Input to Output, add suffix 'X' to model number
Switching Frequency	<ul style="list-style-type: none"> • 100 kHz typical
MTBF	<ul style="list-style-type: none"> • 1,000 kHrs to MIL-HDBK-217F

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -25 μC to +70 μC
Case Temperature	<ul style="list-style-type: none"> • +95 μC max
Storage Temperature	<ul style="list-style-type: none"> • -40 μC to +100 μC

EMC & Safety

Emissions	<ul style="list-style-type: none"> • EN55022, level A conducted • EN55022, level A radiated
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, level 2 Performance Criteria A
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3 3 V/m Performance Criteria A
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6 3 V rms Performance Criteria A
Safety Approvals	<ul style="list-style-type: none"> • UL1950 for XU versions only

Models and Ratings

Input Voltage ^(1,2,5)	Output Voltage	Output Current	Input Current ⁽⁶⁾		Efficiency	Model Number ^(3,4)
			No Load	Full Load		
4.5-6.0 VDC	3.3 VDC	600 mA	15.0 mA	619 mA	64%	WA100
	5.0 VDC	600 mA	15.0 mA	850 mA	70%	WA101
	12.0 VDC	250 mA	15.0 mA	800 mA	75%	WA102
	15.0 VDC	200 mA	15.0 mA	800 mA	75%	WA103
	±5.0 VDC	±250 mA	25.0 mA	850 mA	70%	WA104
	±12.0 VDC	±125 mA	25.0 mA	800 mA	75%	WA105
9-18 VDC	3.3 VDC	600 mA	7.5 mA	236 mA	70%	WA200
	5.0 VDC	600 mA	7.5 mA	340 mA	73%	WA201
	12.0 VDC	250 mA	7.5 mA	320 mA	78%	WA202
	15.0 VDC	200 mA	7.5 mA	320 mA	78%	WA203
	±5.0 VDC	±250 mA	12.0 mA	340 mA	73%	WA204
	±12.0 VDC	±125 mA	12.0 mA	320 mA	78%	WA205
18-36 VDC	3.3 VDC	600 mA	5.0 mA	113 mA	73%	WA300
	5.0 VDC	600 mA	5.0 mA	168 mA	74%	WA301
	12.0 VDC	250 mA	5.0 mA	156 mA	80%	WA302
	15.0 VDC	200 mA	5.0 mA	156 mA	80%	WA303
	±5.0 VDC	±250 mA	7.5 mA	168 mA	74%	WA304
	±12.0 VDC	±125 mA	7.5 mA	156 mA	80%	WA305
36-72 VDC	3.3 VDC	600 mA	3.0 mA	58 mA	71%	WA400
	5.0 VDC	600 mA	2.0 mA	82 mA	76%	WA401
	12.0 VDC	250 mA	2.0 mA	78 mA	80%	WA402
	15.0 VDC	200 mA	2.0 mA	78 mA	80%	WA403
	±5.0 VDC	±250 mA	3.0 mA	82 mA	76%	WA404
	±12.0 VDC	±125 mA	3.0 mA	80 mA	78%	WA405
	±15.0 VDC	±100 mA	3.0 mA	80 mA	78%	WA406

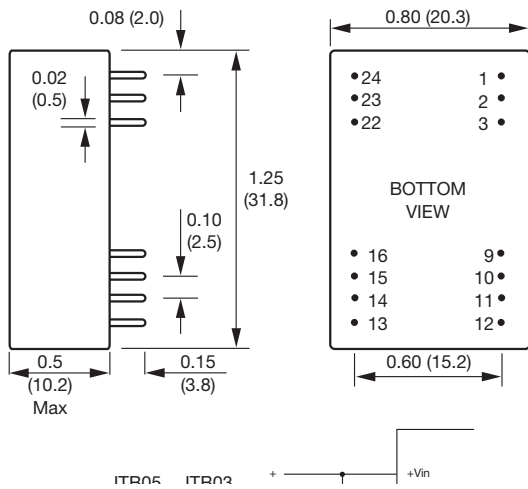
Notes

1. Nominal input voltage 5, 12, 24 or 48 VDC.
2. For optional 4:1 input range: 9-36 VDC: Add suffix ' A' to WA2xx model number, 18-72 VDC: Add suffix ' A' to WA3xx model number.
3. For 3000 VDC 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 VDC 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.

Mechanical Details

All dimensions are in inches (mm)

Weight: 0.04 lbs (20 g) approx.



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

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