



30 WATT SINGLE & DUAL OUTPUT

Regulated,
Wide Input (4:1)
DC/DC Converters

FEATURES

- 30 Watts Maximum Power
- Output Current Up to 8A
- Standard 2.0 x 1.6 x 0.4 Inch Package
- High Efficiency Up to 88%
- 4:1 Wide Input Voltage Range
- Six-sided Continuous Shield
- Fixed Switching Frequency
- UL60950-1, EN60950-1 and IEC 60950-1 licensed
- Compliant to RoHs EU Directive 2002/95/EC

MWB30 Series

HIGH VOLTAGE
(HVPS) Condatas AG

Distribution
electronic
components



Specifications

All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

INPUT

Voltage Range	See Chart
Input Filter	Pi Network
Input Surge Voltage	100 S. Max
24V Input	50Vdc
48V Input	100Vdc
Input Reflected Ripple Current	Nominal Vin and full load 20mA. P-P
Start up time	Nominal V In and Constant resistive load
Start Up Voltage	24V Input 10Vdc
Shut down Voltage	48Vdc Input 18Vdc
	24V Input 8Vdc
	48V Input 18Vdc

OUTPUT

Voltage Accuracy	+/-1%
Line Regulation	+/-0.5%
Load Regulation	Single Output: +/-0.5% Dual: +/-1%
Cross Regulation (dual): Assymetrical load 25%/100%FL	+/-0.5%
Ripple Noise (20 MHZ BW)	See table
Temperature Coefficient	+/-0.02%/degrees C Max.
Transient Voltage Peak Deviation	

Remote On/Off Control

Remote On Off (Note 6)	DC-DC ON	Open or 3V<Vr <12V
(Positive logic)(Standard)	DC-DC Off	Short or 0V < Vr < 1.2V
(Negative Logic)(Option)	DC-DC ON	Short or 0V<vr <1.2
	DC-DC OFF	Open or 3V<vr <12V
Input Current of remote control pin	Nominal Vin	-0.5mA. - +0.5mA.
Remote Off State Input Current	Nominal Vin	3 mA.

General

Efficiency	See table
Isolation Voltage	Input to Output 1600Vdc Min
Isolation Resistance	1000MOhms
Switching Frequency	300KHz Typical
Protection	Over Voltage Protection
	Continuous Short Circuit Protection

Environmental

Operating Ambient Temperature	(-40 to +85 with derating)
Maximum Case Temperature	100 degrees C
Over Temperature Protection	115 degrees C Typical
Storage Temperature Range	-55 to +105 degrees C
Thermal Impedance (Note 7)	Nature convection 10 Degrees C/Watt
	Nature Convection with heat sink 8.24 Degrees C/Watt
Thermal Shock	MIL-STD 810F
Vibration	MIL-STD 810F
Relative Humidity	6% to 95% RH

EMC Characteristics

EMI(Note 8)	EN55022	Class A
ESD	EN61000-4-2	Air +/-8KV Perf Criteria B
		+/-6KV
Radiated Immunity	EN61000-4-3	10V/M Perf Criteria A
Fast Transient (Note 9)	EN61000-4-4	+/-2KV Perf. Criteria A
Surge (Note 9)	EN61000-4-5	+/-1KV Perf. Criteria B
Conducted immunity	EN61000-4-6	16Vrms Perf. Criteria A

Selection Guide

(Continued)

	Input Range (Vdc)	Output Voltage (Vdc)	Output Current		Input Current		Efficiency ⁽⁴⁾ %	Model Number	Capacitor ⁽⁵⁾ Load Max
			Min. Load (mA)	Full Load (mA)	No Load ⁽³⁾ (mA)	Full Load ⁽²⁾ (mA)			
SINGLE OUTPUT VOLTAGE	10 – 40	1.5	0	8000	35	658	80	MWB30-24S1.5	65000μF
	10 – 40	1.8	0	8000	35	759	83	MWB30-24S1.8	65000μF
	10 – 40	2.5	0	8000	40	1029	85	MWB30-24S2.5	33000μF
	10 – 40	3.3	0	6000	50	994	87	MWB30-24S3.3	19500μF
	10 – 40	5	0	6000	65	1506	87	MWB30-24S5	10200μF
	10 – 40	12	0	2500	65	1506	87	MWB30-24S12	3300μF
	10 – 40	15	0	2000	70	1488	88	MWB30-24S15	1100μF
	18 – 75	1.5	0	8000	20	329	80	MWB30-48S1.5	65000μF
	18 – 75	1.8	0	8000	20	380	83	MWB30-48S1.8	65000μF
	18 – 75	2.5	0	8000	25	508	86	MWB30-48S2.5	33000μF
	18 – 75	3.3	0	6000	30	497	87	MWB30-48S3.3	19500μF
	18 – 75	5	0	6000	30	744	88	MWB30-48S5	10200μF
	18 – 75	12	0	2500	35	753	87	MWB30-48S12	3300μF
	18 – 75	15	0	2000	45	744	88	MWB30-48S15	1100μF
DUAL OUTPUT VOLTAGE	10 – 40	±12	0	±1250	30	1563	84	MWB30-24-12	±1000μF
	10 – 40	±15	0	±1000	35	1543	85	MWB30-24-15	±680μF
	18 – 75	±12	0	±1250	25	722	85	MWB30-48-12	±1000μF
	18 – 75	±15	0	±1000	25	762	86	MWB30-48-15	±680μF

NOTES:

1. Bellcore TR-NWT-00032, Case: 50% Stress, Temperature at 40°C.
MIL-STD-217F Notice 2 @ Ta = 25°C, Full load (Ground, Benign, controlled environment).
2. Maximum value at normal input voltage and full load.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.
6. The ON/OFF control pin voltage is referenced to -Vin.
7. Heat sink is optional and P/N: 7G-0011C-F
8. The MWB30 series can meet EN55022 Class A with external L-C filter before the input pins to the converter.
Recommend: 24 Vin : C1=2.2μF/50V 1210 MLCC.
48 Vin : C1=2.2μF/100V 1210 MLCC.
9. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
The filter capacitor Polytron Devices suggest: Nippon chemi-con KY series, 220μ F/100V, ESR0

Mechanical Specifications

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
4	CTRL	CTRL
5	NO PIN	+OUTPUT
6	+OUTPUT	COMMON
7	-OUTPUT	-OUTPUT
8	TRIM	TRIM

