



# 30 WATT SINGLE & DUAL OUTPUT

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



## 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	Power Up	10mS. Typ.
	Constant resistive load	Remote On/Off	10mS. Typ.
Start Up Voltage .....	24V Input	10Vdc	
	48Vdc Input	18Vdc	
Shut down Voltage .....	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
	DC-DC ON	Short or 0V<vr <1.2
(Negative Logic)( Option)	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

## 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

Selection Guide

(Continued)

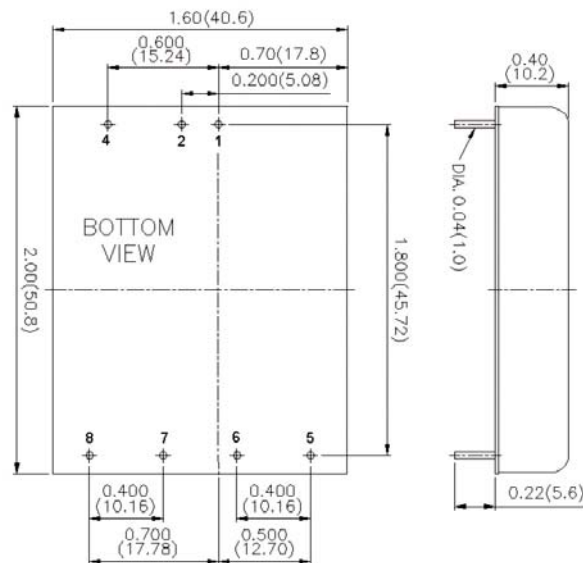
	Input Range (Vdc)	Output Voltage (Vdc)	Output Current		Input Current		Efficiency <sup>(4)</sup> %	Model Number	Capacitor Load Max <sup>(5)</sup>
			Min. Load (mA)	Full Load (mA)	No Load <sup>(3)</sup> (mA)	Full Load <sup>(2)</sup> (mA)			
SINGLE OUTPUT VOLTAGE	10 – 40	1.5	0	8000	35	658	80	MWB30-24S1.5	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, ESRΩ

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



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