



# 20 WATT SINGLE, DUAL & TRIPLE OUTPUT



**Regulated, Wide Input (2:1 + 4:1)  
DC/DC Converters**

## FEATURES

- **2:1, 4:1 Wide Input Voltage Range**
- **3.3Vdc Outputs**
- **Low Profile Package (2.0" x 1.6" x 0.40")**
- **High Efficiency**
- **Short Circuit & Over-Voltage Protection**
- **Six-Sided Shielding**
- **Epoxy Encapsulated**
- **Single, Dual, Triple Output**

MWA20, MWB20 Series

## Specifications

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

### INPUT

Input Voltages.....	Voltage Range
12 Vdc.....	9-18 Vdc
24 Vdc.....	18-36 Vdc
48 Vdc.....	36-72 Vdc
Input Filter.....	Pi Network

### OUTPUT

Voltage Accuracy.....	±2% max.
External Trim Adjustment Range.....	±10% min.
Line Regulation .....	±0.1%
Load Regulation.....	±1.0% (Single), ±5.0% (Dual)
Ripple Noise (20 MHz BW).....	75mV p-p max.
Temperature Coefficient (at FL).....	±0.02%/°C

### REMOTE ON/OFF CONTROL

On Control.....	4.8V min. or Open
Off Control.....	4V max. or Short

### GENERAL

Efficiency.....	81-83%, see Table
Isolation Voltage.....	1600 Vdc min.
Isolation Resistance.....	1000MOhms
Switching Frequency.....	300KHz typ.
Short Circuit Protection.....	Continuous

### ENVIRONMENTAL

Operating Temperature Range.....	-25 to +71°C
Storage Temperature Range.....	-55 to +105°C
Cooling .....	Free Air Convection
EMI/RFI.....	Six-Sided Continuous Shield

### PHYSICAL

Case Material.....	Nickel Coated Copper with Non-Conductive Base
Dimensions.....	2.00" x 1.60" x 0.40" (50.8 x 40.6 x 10.2 mm)

## Selection Guide

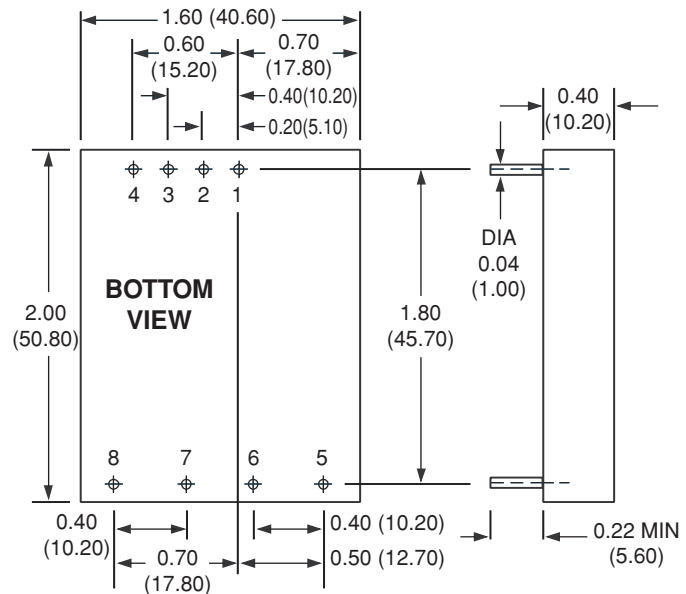
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		Input Voltage	Output	Output	Efficiency	Model Number	Case	
		Nominal (Range) (Vdc)	Voltage (Vdc)	Current (mA)	%			
<b>2:1 INPUT VOLTAGE RANGE</b>	<b>SINGLE OUTPUT VOLTAGE</b>	12 (9-18)	3.3	4000	77	MWA20-12S33	M	
			5	4000	81	MWA20-12S5	M	
			12	1670	83	MWA20-12S12	M	
			15	1330	83	MWA20-12S15	M	
		24 (18-36)	3.3	4000	78	MWA20-24S33	M	
			5	4000	81	MWA20-24S5	M	
			12	1670	83	MWA20-24S12	M	
			15	1330	83	MWA20-24S15	M	
		48 (36-72)	3.3	4000	79	MWA20-48S33	M	
			5	4000	81	MWA20-48S5	M	
			12	1670	83	MWA20-48S12	M	
			15	1330	83	MWA20-48S15	M	
	<b>DUAL OUTPUT VOLTAGE</b>	12 (9-18)	±5	±2000	81	MWA20-12-5	M	
			±12	±833	83	MWA20-12-12	M	
			±15	±666	83	MWA20-12-15	M	
		24 (18-36)	±5	±2000	81	MWA20-24-5	M	
			±12	±833	83	MWA20-24-12	M	
			±15	±666	83	MWA20-24-15	M	
		48 (36-72)	±5	±2000	81	MWA20-48-5	M	
			±12	±833	83	MWA20-48-12	M	
			±15	±666	83	MWA20-48-15	M	
		<b>TRIPLE OUTPUTS</b>	12 (9-18)	3.3/±12	3000/±300	78	MWA20-12S33-12	M
				3.3/±15	3000/±250	78	MWA20-12S33-15	M
				5/±12	2000/±300	80	MWA20-12S5-12	M
5/±15	2000/±250			80	MWA20-12S5-15	M		
24 (18-36)	3.3/±12		3000/±300	79	MWA20-24S33-12	M		
	3.3/±15		3000/±250	79	MWA20-24S33-15	M		
	5/±12		2000/±300	81	MWA20-24S5-12	M		
	5/±15		2000/±250	81	MWA20-24S5-15	M		
48 (36-72)	3.3/±12		3000/±300	80	MWA20-48S33-12	M		
	3.3/±15		3000/±250	80	MWA20-48S33-15	M		
	5/±12		2000/±300	82	MWA20-48S5-12	M		
	5/±15		2000/±250	82	MWA20-48S5-15	M		
<b>4:1 INPUT VOLTAGE RANGE</b>	<b>DUAL OUTPUT</b>	24 (9-36V)	5	4000mA	79	MWB20-24S5	M	
			12	1670mA	81	MWB20-24S12	M	
			15	1330	81	MWB20-24S15	M	
		48 (18-72)	5	4000	80	MWB20-48S5	M	
			12	1670	81	MWB20-48S12	M	
			15	1333	81	MWB20-48S15	M	
		24 (9-36)	±5	±2000	79	MWB20-24-5	M	
			±12	±833	81	MWB20-24-12	M	
	±15		±666	82	MWB20-24-15	M		
	48 (18-72)		±5	±2000	79	MWB20-48-5	M	
		±12	±833	83	MWB20-48-12	M		
		±15	±666	84	MWB20-48-15	M		

## Mechanical Specifications

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I/O Connections			
Pin	SINGLE	DUAL	TRIPLE
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	No Pin	No Pin	No Pin
4	On/Off	On/Off	Ctrl
5	No Pin	+Vout	+Aux Out
6	+Vout	Common	+5V/+3.3V
7	Common	-Vout	-Vout
8	Trim	Trim	Trim



All Dimensions are in inches (mm)