



## key features

- 20W 1.6 x 2 standard package
- 100°C case operation
- 3.3V output available
- integrated heatsink
- enable and trim pins
- wide range input voltage
- 1500 VDC isolation
- short circuit protection

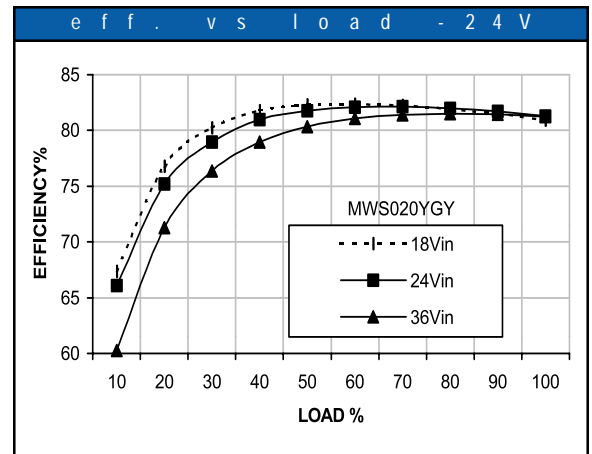
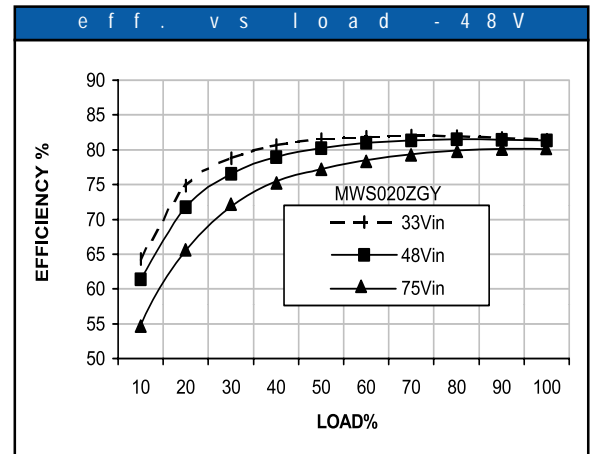
The MWS series of DC to DC converters provides up to 20W of output power in the industry standard 1.6" x 2" package and footprint. The MWS is available in 24V and 48V input versions. With a maximum case temperature of 100°C, the MWS is well suited for the most demanding telecom, networking, and industrial applications. The MWS features 1500VDC of isolation, shortcircuit, and overtemperature protection. The MWS is 100% surface mount construction and is built in IPD's fully automated ISO 9001 factory located in Boston.

## technical specifications

input	
voltage range	18 - 36 VDC
24 VDC nominal	33 - 75 VDC
48 VDC nominal	<33V or <18V
Input undervoltage lockout	1V nominal
UVLO hysteresis	50 mA
reflected ripple	shunt diode
input reverse voltage protection	

output	
setpoint accuracy	±1.0%
line regulation $V_{in}$ min. - $V_{in}$ max., $I_{out}$ rated	0.2% $V_o$
load regulation $I_{out}$ min. - $I_{out}$ max., $V_{in}$ nom.	0.5% $V_o$
minimum output current	5%
dynamic regulation, loadstep	25% $I_o$
Pk deviation	4% $V_o$
settling time	500 $\mu$ S
voltage trim range	±10%
short circuit / overcurrent protection	shutdown / hiccup
current limit threshold range, % $I_o$ rated	110 - 140%

general	
turn-on tim, max	175 ms, max
remote shutdown	positive logic
switching frequency	450Khz
isolation	
input - output	1500 VDC
temperature coefficient	±0.015%/°C
case temperature	
operating range	-40 to +100°C
storage range	-40 to +105°C
humidity max, non-condensing	95%
vibration, 3 axes, 5 min each	5 g, 10 - 55Hz
MTBF <sup>†</sup> (Bellcore TR-NWT-000332)	hrs
safety	UL, CSA, EN60950
weight (approx.)	2.1 oz.



**notes**

<sup>†</sup> MTBF predictions may vary slightly from model to model.  
 Specifications typically at 25°C, normal line, and full load - unless otherwise stated.  
 Specifications subject to change without notice.

## m o d e l s

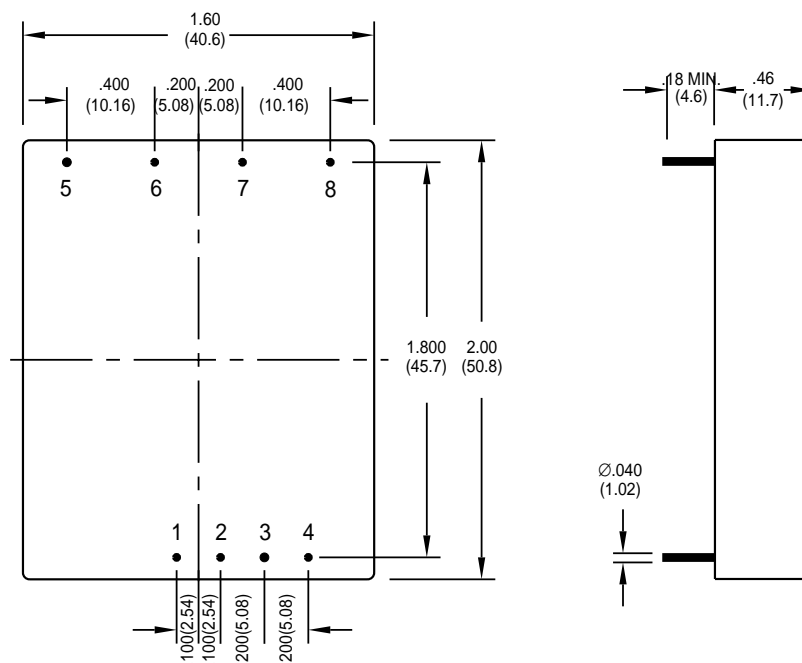
V <sub>IN</sub> (volts)	V <sub>IN</sub> range (volts)	I <sub>IN</sub> max. <sup>*</sup> (amps)	V <sub>OUT</sub> (volts)	I <sub>OUT</sub> rated (amps)	ripple & noise pk-pk (mV)	efficiency typ. <sup>**</sup>	model
24	18 - 36	1.00	3.3	4.0	75	79%	MWS013YEY
24	18 - 36	1.44	5.0	4.0	75	81%	MWS020YGY
24	18 - 36	1.36	12.0	1.66	120	84%	MWS020YHY
24	18 - 36	1.34	15.0	1.33	150	85%	MWS020YJY
48	33 - 75	0.54	3.3	4.0	75	79%	MWS013ZEY
48	33 - 75	0.77	5.0	4.0	75	81%	MWS020ZGY
48	33 - 75	0.73	12.0	1.66	120	84%	MWS020ZHY
48	33 - 75	0.72	15.0	1.33	150	85%	MWS020ZJY

\* max input current an minimum input voltage, maximum rated output power

\*\* at nominal V<sub>IN</sub>, rated output.

specifications are subject to change without notice.

## m e c h a n i c a l d r a w i n g



BOTTOM VIEW

### t h e r m a l i m p e d a n c e

natural convection	11.5 C/W
100 LFM	10.2 C/W
200 LFM	8.5 C/W
300 LFM	6.5 C/W
400 LFM	5.4 C/W

Thermal impedance data is dependant on many environmental factors. The exact thermal performance should be validated for specific application.

### p i n f u n c t i o n

1	+V <sub>IN</sub>
2	-V <sub>IN</sub>
3	no pin
4	shutdown
5	no pin
6	+V <sub>OUT</sub>
7	-V <sub>OUT</sub>
8	trim

### t o l e r a n c e s (unless otherwise specified)

Inches	(Millimeters)
.XX ± .020	.X ± 0.5
.XXX ± .010	.XX ± .25
<b>Pin:</b>	
± .002	± .05