



# EW Series of 4.5 to 6 Watt DC/DC Converters



STANDARD DC/DC CONVERTERS WITH SINGLE OR DUAL REGULATED OUTPUTS. AN INTERNAL  $\Pi$  (Pi) INPUT FILTER IS STANDARD AND IS USED TO REDUCE REFLECTED RIPPLE CURRENT. ALL MODELS FEATURE A NICKEL-PLATED COPPER CASE WITH SIX-SIDED SHIELDING.



**DIMENSIONS:**  
1.00" x 2.00" x 0.40"  
(25.40) x (50.80) x (10.16)mm

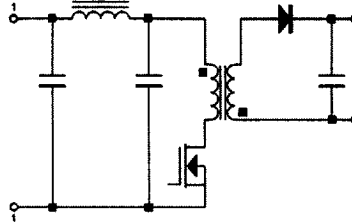
## FEATURES

- Industry Standard Pin Out
- Six-Sided Shielding
- 500 VDC I/O Isolation
- Continuous Short Circuit Protection
- Input  $\Pi$  (Pi) Filter

## APPLICATIONS

- Telecommunication
- Data Processing Equipment
- Industrial Equipment
- Medical Equipment
- A/D and D/A Converters
- Distributed Power Systems

## BLOCK DIAGRAM



## PART NUMBER SELECTION GUIDE

E	W	D	24	15	Z		
SERIES NAME	FEATURES	# OF OUTPUTS	Vin NOMINAL	Vout SIGNALS	OPTIONS	ACCESSORIES	TYPE
	<b>Features</b> • Wide Input Voltage Range • Regulated	<b># of Outputs</b> S = SINGLE D = DUAL	<b>Output Voltage (VDC)</b> <b>Single Output:</b> 05 = 5V @ 1000mA 12 = 12V @ 500mA 15 = 15V @ 400mA <b>Dual Output:</b> 05 = $\pm 5V$ @ $\pm 500mA$ 12 = $\pm 12V$ @ $\pm 250mA$ 15 = $\pm 15V$ @ $\pm 200mA$  <i>For Other Output Voltages Please Consult Factory</i>	<b>Options</b> S (#) = Modification Number I = Industrial Temperature Range (-40°C to +85°C) Z = Water-washable sealed case	<b>Accessories / Type</b> MS = Mating Socket Type = C <i>Please Consult Accessories Page for Mating Socket Selection.</i>		
	<b>Input Voltage Range (VDC)</b> 5 = 4.5 to 9.0 12 = 9.0 to 18.0 24 = 18.0 to 36.0 48 = 36.0 to 72.0						



# INTERNATIONAL POWER DEVICES, INC.

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4853809 0000314 T28



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PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES:	
<b>GENERAL:</b>							
Switching Frequency	170	200	240	KHz		1. No derating required up to a maximum case temperature of 85°C. See efficiency and thermal impedance data provided. Internal Power Dissipation = $P_{out} * (1 - Eff) / Eff$ .	
Isolation Voltage				VDC			
Input to Output	500			VDC	Note 5		
Input to Case				VDC	Note 5		
Output to Case				VDC			
Isolation Resistance				Ohms		2. Provided for input fuse selection.	
Input to Output	10 <sup>9</sup>				Note 3		
Short Circuit Protection						3. Continuous Short Circuit Protection is provided. For dual output units the short circuit current on each individual output is equivalent to the short circuit current for a single output unit.	
<b>ENVIRONMENTAL:</b>							
Operating Temperature	-25		85	°C	Note 1		
Storage Temperature	-40		125	°C	Ambient		
Operating Humidity			95%		Non-Condensing		
Storage Humidity			95%		Non-Condensing		
<b>INPUT:</b>							
Input Voltage						4. Long term continuous operation in this mode is not recommended. Converter will auto-restart once short has been removed.	
5 Vin	4.50	5.00	9.00	VDC			
12 Vin		12.00	18.00	VDC			
24 Vin	18.00	24.00	36.00	VDC			
48 Vin	36.00	48.00	72.00	VDC			
Input Current							
5 Vin			1.00	Amps	Note 2		
12 Vin			0.80	Amps	Note 2		
24 Vin			0.40	Amps	Note 2		
48 Vin			0.20	Amps	Note 2		
Input Ripple Current			20%	I <sub>in</sub> max			
Reverse Input Current			100%	I <sub>in</sub> max			
<b>OUTPUT:</b>							
<b>Singles:</b>							
Voltage Accuracy			±1.00%	V <sub>out</sub>	Full Load	5. For 48V input models, the case is connected to +Vin. For all other input voltages, the case is tied to either -Vout (Singles) or the Output Common (Duals).	
Load Regulation			±1.00%	V <sub>out</sub>	10% to 100%		
Line Regulation			±1.00%	V <sub>out</sub>	LL to HL		
Current Limit			130%	I <sub>out</sub>	Note 3, Note 4		
<b>Duals:</b>							
Voltage Accuracy						6. For 48V input models, the case is connected to +Vin. For all other input voltages, the case is tied to either -Vout (Singles) or the Output Common (Duals).	
+Vout			±1.00%	Vout	Full Load		
-Vout			±1.00%	Vout	Full Load		
Load Regulation							
+Vout			±1.00%	Vout	10% to 100%		
-Vout			±1.00%	Vout	10% to 100%		
Line Regulation			±1.00%	Vout	LL to HL		
Current Limit			130%	Iout	Note 3, Note 4		
Temp. Coefficient			±0.02%	/ °C			
Voltage Stability			±0.05%	Vout			
Ripple and Noise			1.00%	Vout	p-p, 20 MHz BW		
Transient Response							
25% Step							
Load change			500	µS	1% Error Band		

\* All specifications typical at +25°C Nominal Line and Full Load unless otherwise noted.  
 \* Specifications subject to change without notice.



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Notes: \_\_\_\_\_

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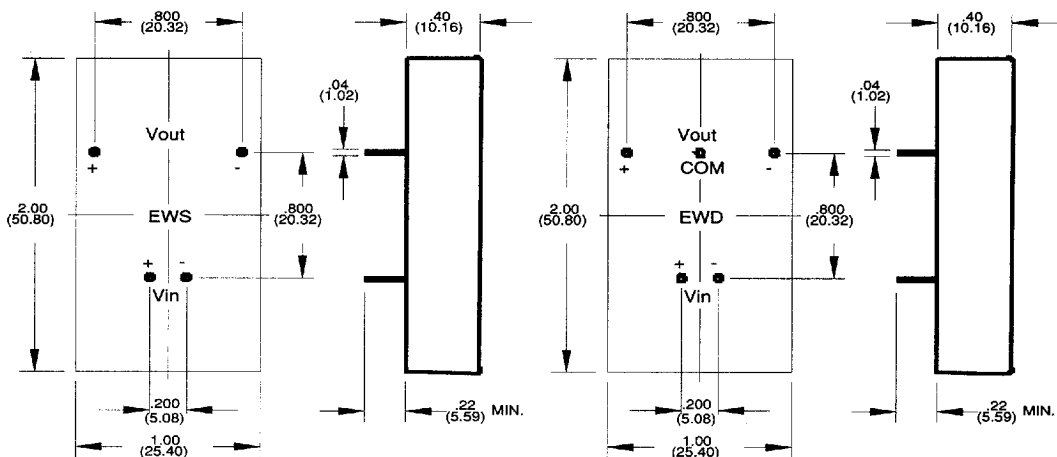
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## BOTTOM VIEW

Mechanical tolerances are  $\pm 0.04$ "



Specifications are subject to change without notice.

All Dimensions are in inches (MM)



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## PIN CONNECTIONS

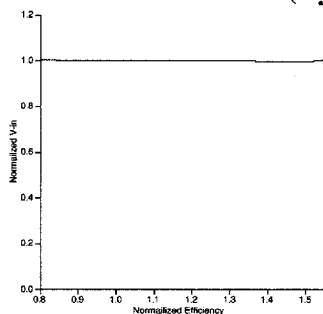
PIN #	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout

## THERMAL IMPEDANCE

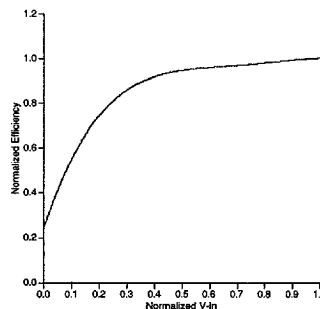
	Typical R $\theta$ CA
NATURAL CONVECTION	22°C/W
100 LFPM	18°C/W
200 LFPM	11°C/W
300 LFPM	8.9°C/W
400 LFPM	6.8°C/W

Thermal Impedance data depends upon many environmental factors and may vary from application to application. The numbers provided are intended as a guide. The exact thermal performance should be validated in each application.

## EFFICIENCY vs. LOAD (Typical)



## EFFICIENCY vs. Vin (Typical)



Notes: \_\_\_\_\_

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