



IW Series of 10 to 12 Watt DC/DC Converters

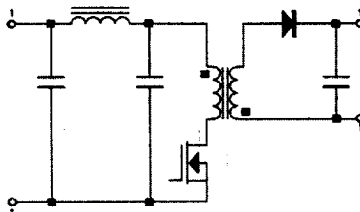


STANDARD HIGH-DENSITY DC/DC CONVERTERS WITH SINGLE, DUAL OR TRIPLE REGULATED OUTPUTS. ALL MODELS FEATURE HIGH ISOLATION OUTPUTS. AN INTERNAL Π (PI) INPUT FILTER IS STANDARD AND IS USED TO REDUCE REFLECTED RIPPLE CURRENT. ALL MODELS FEATURE A NICKLE-PLATED COPPER CASE WITH SIX-SIDED SHIELDING.



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

BLOCK DIAGRAM



FEATURES

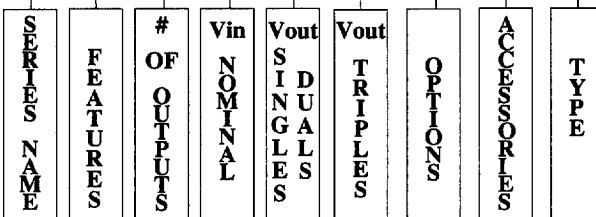
- Industry Standard Pin Out
- Up to 15 W/in³
- Up to 90% Efficiency
- Current Mode Control
- Wide Input Voltage range
- 500 VDC I/O Isolation
- Continuous Short Circuit Protection
- Input Π (Pi) Filter

APPLICATIONS

- Telecommunication
- Data Processing Equipment
- Industrial Equipment
- Medical Equipment
- A/D and D/A Converters
- Distributed Power Systems
- +3.3V Logic

PART NUMBER SELECTION GUIDE

I W T 12 05 - 15



Features
• Wide Input Voltage Range
• Regulated

of Outputs
S = SINGLE
D = DUAL
T = TRIPLE

Input Voltage Range (VDC)
5 = 4.5 to 9.0
12 = 9.0 to 18.0
24 = 18.0 to 36.0
48 = 36.0 to 72.0

Output Voltage (VDC)

Single Output:

03.3 = 3.3 V @ 3.3 A
05 = 5V @ 2.00A
12 = 12V @ 1.00A
15 = 15V @ 0.75A
24 = 24V @ 0.50A
48 = 48V @ 0.25A

Dual Output:

05 = $\pm 5V$ @ $\pm 1000mA$
12 = $\pm 12V$ @ $\pm 500mA$
15 = $\pm 15V$ @ $\pm 375mA$

Triple Output:

05-12 = 5V @ 1.5A
 $\pm 12V$ @ $\pm 0.31A$
05-15 = 5V @ 1.5A
 $\pm 15V$ @ $\pm 0.25A$

Options

B = Alternate Pinout or Height
S (#) = Modification Number
I = Industrial Temperature Range (-40°C to +85°C)
Z = Water-washable sealed case

Accessories / Type

HS = Heatsink
Type = I
Please Consult Accessories Page for available options

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INTERNATIONAL POWER DEVICES, INC.

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PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES
GENERAL:						
Switching Frequency	270	300	330	KHz		1. No derating required up to a maximum case temperature of 85°C. See efficiency and thermal impedance data provided. Internal Power Dissipation = $P_{out} * (1 - \text{Eff}) / \text{Eff}$.
Isolation Voltage						
Input to Output	500			VDC		
Input to Case				VDC	Note 5	
Output to Case				VDC	Note 5	
Isolation Resistance						Note 3
Input to Output	10 ⁹			Ohms		
Short Circuit Protection						
ENVIRONMENTAL:						
Operating Temperature	-25		85	°C	Note 1	2. Provided for input fuse selection.
Storage Temperature	-40		125	°C	Ambient	
Operating Humidity			95%		Non-Condensing	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.
Storage Humidity			95%		Non-Condensing	
INPUT:						
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	9.00	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. 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).
5 Vin			3.20	Amps	Note 2	
12 Vin			1.55	Amps	Note 2	
24 Vin			0.80	Amps	Note 2	
48 Vin			0.40	Amps	Note 2	
Input Ripple Current			20%	Iin max		
Reverse Input Current			100%	Iin max		
OUTPUT:						
Singles:						
Accuracy			±1.00%	Vout	Full Load	Note 3
Load Regulation			±1.00%	Vout	10% to 100%	
Line Regulation			±0.50%	Vout	LL to HL	
Current Limit			130%	Iout		
Duals:						
Accuracy						
+Vout			±1.00%	Vout	Full Load	Full Load
-Vout			±1.00%	Vout		
Load Regulation						
+Vout			±1.00%	Vout	10% to 100%	Balanced Load
-Vout			±1.00%	Vout		
Line Regulation			±1.00%	Vout	LL to HL	Note 3
Current Limit			130%	Iout		

* All specifications typical at +25°C Nominal Line and Full Load unless otherwise noted.

* Specifications subject to change without notice.



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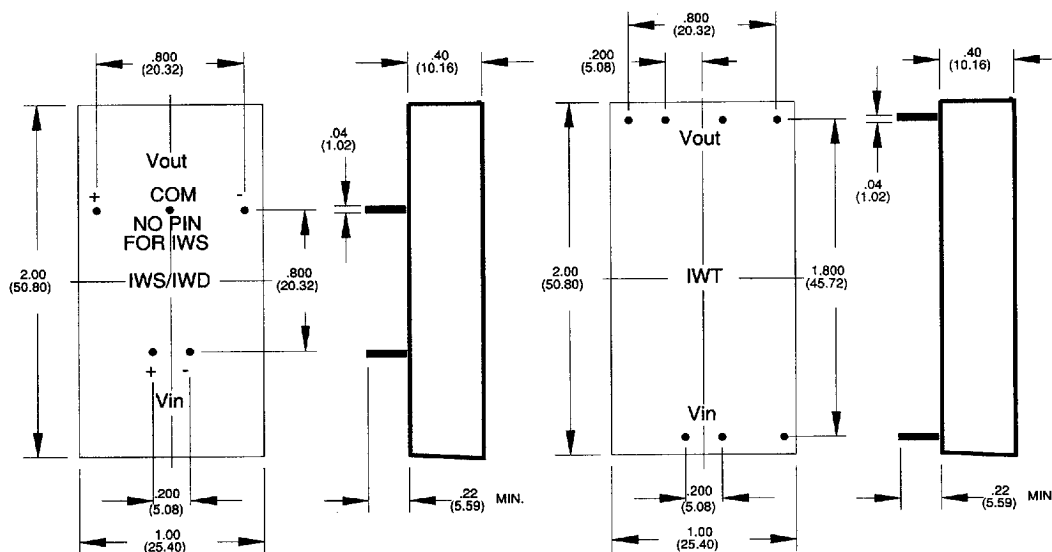
IW Series of 10 to 12 Watt DC/DC Converters



PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES
OUTPUT (Con't)						
Triples:						
Voltage Accuracy						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.
Vout 1			±1.00%	Vout	Full Load	
Vout 2			±1.00%	Vout	Full Load	
Vout 3			±1.00%	Vout	Full Load	
Load Regulation						
Vout1			±1.00%	Vout	10% to 100% balanced load	
Vout 2			±5.00%	Vout	balanced load	
Vout 3			±5.00%	Vout	balanced load	
Line Regulation			±1.00%	Vout	LL to HL	
Current Limit			130%	Iout	Note 3	
Line Regulation			±1.00%	Vout	LL to HL	
Temp. Coefficient			±0.02%	/°C		
Voltage Stability			±0.05%	Vout		
Ripple and Noise			1.00%	Vout	p-p, 20MHz BW	
Transient Response:						
25% step load change			500	μS	1% Error Band	

BOTTOM VIEW

Mechanical tolerances are ± 0.040"



Specifications are subject to change without notice.

All Dimensions are in inches (MM)

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PIN CONNECTIONS

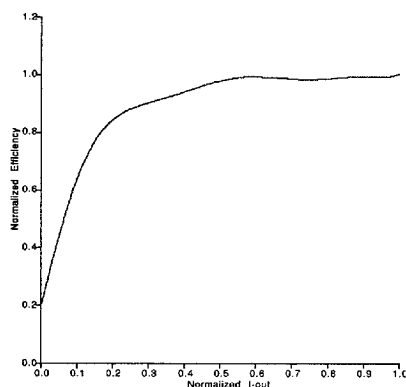
PIN #	SINGLE	DUAL	TRIPLE
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	+Vout	+Vout	S/D (Optional) +V2 out +5Vout Common -V3 out
4	No Pin	Common	
5	-Vout	-Vout	
6	---	---	
7	---	---	

THERMAL IMPEDANCE

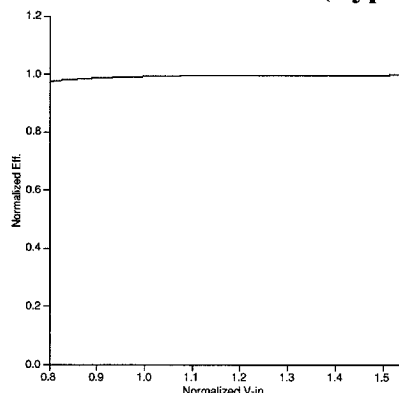
	Typical R _{θCA}
NATURAL CONVECTION	22°C/W
100 LFPM	18°C/W
200 LFPM	11°C/W
300 LFPM	8.9°C/W
400 LFPM	6.8°C/W

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.

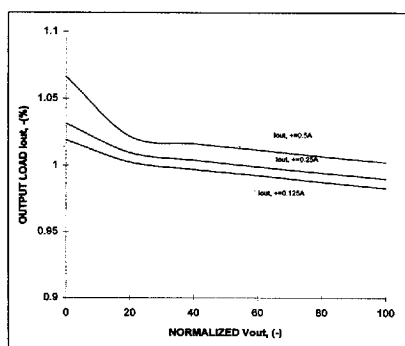
EFFICIENCY vs. LOAD (Typical)



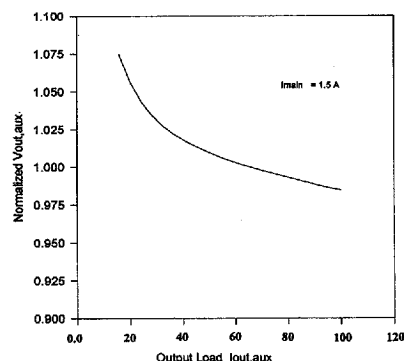
EFFICIENCY vs. Vin (Typical)



TYPICAL CROSS-REGULATION (Dual Output Units)



TYPICAL CROSS-REGULATION (Triple Output Units)



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