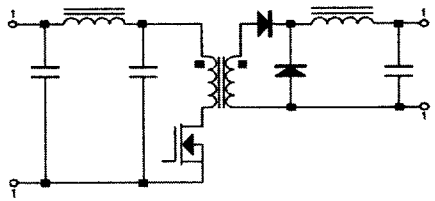
RW-H Series of 50 to 60 Watt DC/DC Converters

STANDARD HIGH DENSITY DC/DC CONVERTERS WITH SINGLE, DUAL AND TRIPLE REGULATED OUTPUTS. ALL MODELS FEATURE WIDE INPUT RANGE, SIX-SIDED EMI/RFI SHIELDING AND CONTINUOUS SHORT CIRCUIT PROTECTION. CURRENT MODE CONTROL TOPOLOGY AND HIGH EFFICIENCY ARE SOME OF MANY STANDARD FEATURES FOR THIS SERIES.

DIMENSIONS:
3.00" x 3.00" x 0.50"
(76.20) x (76.20) x (12.70)mm

BLOCK DIAGRAM



FEATURES

- Industry Standard Pin Out
- Up to 83%Efficiency
- Current Mode Control
- Wide Input Voltage
- 500 VDC I/O Isolation
- Continuous Short Circuit Protection
- Input ∏ (Pi) Filter

APPLICATIONS

- Redundancy Systems
- Telecommunication
- Process Control Equipment
- Transportation

PART NUMBER SELECTION GUIDE

R W T 48 05 -12H

SERIES NAME	FEATURES	# OF OUTPUTS	Vin NOMINAL	Vout SINGLES DUALS	Vout TRIPLES	OPTIONS	ACCESSORIES	TYPE

Features
- Wide Input Voltage Range
- Regulated

# of Outputs
S = SINGLE
D = DUAL
T = TRIPLE

Input Voltage Range (VDC)
12 = 10 to 20
24 = 18 to 36
48 = 36 to 72

Output Voltage (VDC)

Single Output:
05H = 5V @ 10A
12H = 12V @ 5.0A
15H = 15V @ 4.0A

Dual Output:
05H = ± 5V @ ± 5.0A
12H = ±12V @ ± 2.5A
15H = ±15V @ ± 2.0A

Triple Output:
05-12H = 5V@ 5.0A ±12V @±1.25A
05-15H = 5V @ 5.0A ±15V @±1.00A

All units require H Suffix

Options
H = *All units require H Suffix*
I = Industrial Temperature Range (-40°C to +85°C)
S (#) = Modification Number
Z = Water-washable sealed case

Accessories / Type
HS = Heatsink
Type = RWH
Please Consult Accessories Page for available options

60 INTERNATIONAL POWER DEVICES, INC.
20 Linden Street, Boston, MA 02134 • Phone: (617)782-3331 • Fax: (617)782-7416

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
GENERAL:					
Switching Frequency	270	300	330	KHz	
Isolation Voltage					
Input to Output	500			VDC	
Input to Case				VDC	Note 5
Output to Case				VDC	Note 5
Isolation Resistance					
Input to Output	10^9			Ohms	
ENVIRONMENTAL:					
Operating Temperature	-25		85	°C	Note 1
Storage Temperature	-40		125	°C	Ambient
Operating Humidity			95%		Non-Condensing
Storage Humidity			95%		Non-Condensing
REMOTE ON/OFF CONTROL:					
Compatibility					CMOS,TTL,Relay
On Control					>5.5 VDC or open circuit
Off Control					<1.8 VDC, Note 4
INPUT:					
Input Voltage					
12 Vin	10.0	12.0	20.0	VDC	
24 Vin	18.0	24.0	36.0	VDC	
48 Vin	36.0	48.0	72.0	VDC	
Input Current					
12 Vin			7.32	Amps	Note 2
24 Vin			3.97	Amps	Note 2
48 Vin			1.98	Amps	Note 2
Input Ripple Current			20%	Iin max	
Reverse Input Current			100%	Iin max	
OUTPUT:					
Singles:					
Trim			±10.0%	Vout	
Voltage Accuracy			±1.00%	Vout	Full Load
Load Regulation			±1.00%	Vout	10% to 100%
Line Regulation			±0.50%	Vout	LL to HL
Current Limit			120%	Iout	Note 3
Duals:					
Trim			±10.0%	Vout	
Voltage Accuracy					
+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			120%	Iout	Note 3

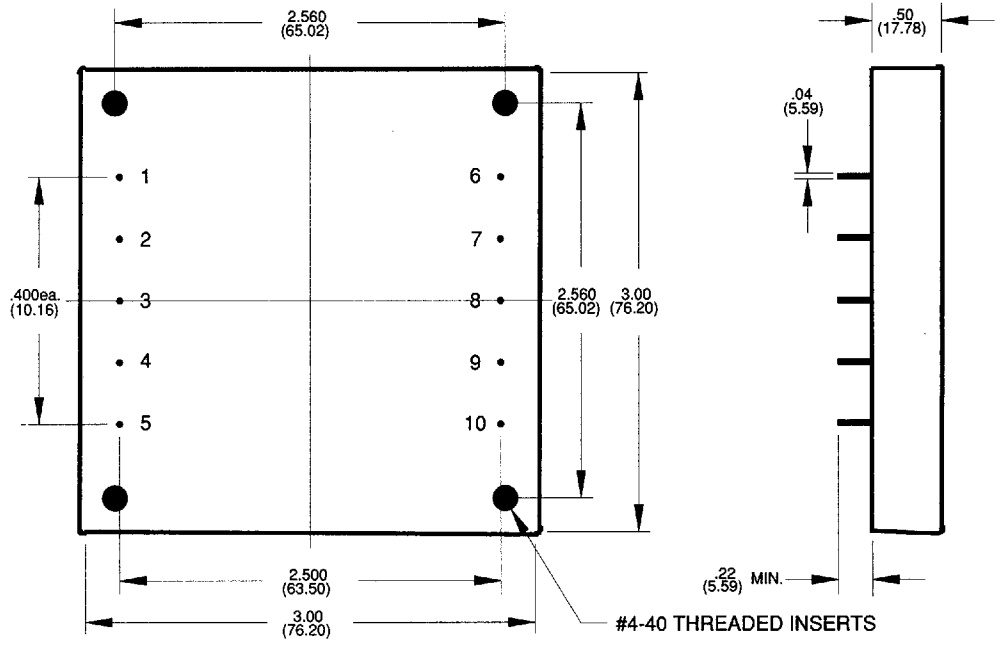
1. No derating required up to a maximum case temperature of 85°C. See efficiency and thermal impedence data provided. Internal Power Dissipation = Pout* (1-Eff) / Eff.
2. Provided for input fuse selection.
3. Continuous Short Circuit Protection is provided. For dual output units the short circuit current on each individual output is equivalent to the short circuit current for a single output unit.
4. Long term continuous operation in this mode is not recommended. Converter will auto-restart once short has been removed.
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).

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

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES
OUTPUT (Con't.)						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.
Triples:						
Trim			±10.0%	Vout		
Voltage Accuracy						
Vout 1			±1.00%	Vout	Full Load	
Vout 2			±5.00%	Vout	Full Load	
Vout 3			±5.00%	Vout	Full Load	
Load Regulation						
Vout1			±1.00%	Vout	10% to 100%	
Vout 2			±5.00%	Vout	10% to 100%	
Vout 3			±5.00%	Vout	10% to 100%	
Line Regulation			±1.00%	Vout	LL to HL	
Current Limit			120%	Iout	Note 3	
Temp. Coefficient			±0.02%	/°C		
Voltage Stability			±0.05%	Vout		
Ripple and Noise			1.00%	Vout	p-p, 20MHz BW	
Transient Response						
25% step full load			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

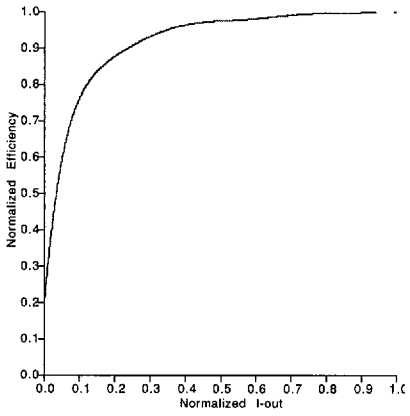
PIN #	SINGLE	DUAL	TRIPLE
1	No Pin	No Pin	No Pin
2	-Vin	-Vin	-Vin
3	+Vin	+Vin	+Vin
4	Case, or NC	Case	Case
5	Shut Down	Shut Down	Shut Down
6	No Connect	-Vout	-Aux. Out
7	No Connect	Common	+Aux. Out
8	-Vout	Common	Common
9	+Vout	+Vout	+Vout
10	Trim	Trim	Trim

THERMAL IMPEDANCE

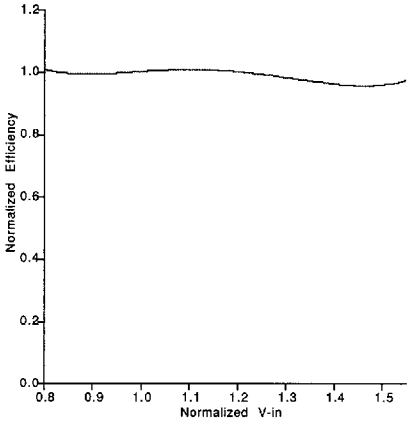
	Typical RθCA
NATURAL CONVECTION	6.7°C/W
100 LFPM	4.0°C/W
200 LFPM	3.4°C/W
300 LFPM	2.5°C/W
400 LFPM	1.6°C/W

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.

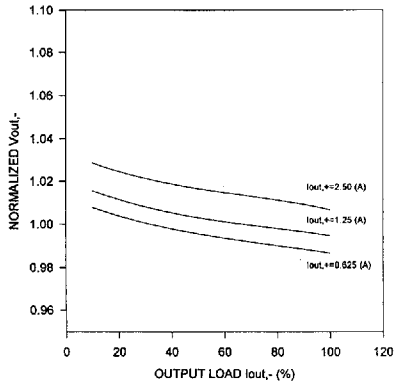
EFFICIENCY vs. LOAD (Typical)



EFFICIENCY vs. Vin (Typical)



TYPICAL CROSS-REGULATION (Dual Output Units)



TYPICAL CROSS-REGULATION (Triple Output Units)