

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



IPDTM INTERNATIONAL POWER DEVICES

TWT1205-12B

MADE IN USA

DIMENSIONS:

TWS SERIES
 2.04" x 4.60" x 0.52"
 (51.80) x (116.80) x (13.20)mm

TWD-B & TWT-B SERIES
 2.40" x 4.60" x 0.52"
 (60.96) x (116.80) x (13.20)mm

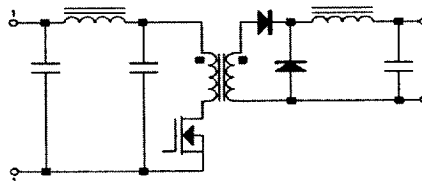
FEATURES

- Industry Standard Pin Out
- Up to 86% Efficiency
- Current Mode Control
- Wide Input Voltage
- 500 VDC I/O Isolation
- Continuous Short Circuit Protection
- Input Π (Pi) Filter
- Dual Control Loop Design

APPLICATIONS

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

BLOCK DIAGRAM



PART NUMBER SELECTION GUIDE

T **W** **T** **12** **05** **- 12B** **HS**

SERIES NAME

FEATURES

OF OUTPUTS

Vin NOMINAL

Vout SINGLES

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: See Note 6

05 = 5V @ 15A
12 = 12V @ 8.3A
15 = 15V @ 6.6A

Dual Output: See Note 6

05B = ± 5V @ ± 7.5A
12B = ± 12V @ ± 3.12A
15B = ± 15V @ ± 2.5A

Triple Output: See Note 6

05-12B = 5V @ 7.5A
± 12V @ ± 1.56A
05-15B = 5V @ 7.5A
± 15V @ ± 1.25A

All Duals and Triples Require "B" Pinout

Options

B = B Pinout Required for all Dual & Triple Output Units
I = Industrial Temperature Range (-40°C to +85°C)
S (#) = Modification Number
Z = Water-washable sealed case

Accessories / Type

HS = Heatsink *Please Consult*
Type = TW *Accessories Page for available options*



TW Series of 75 to 150 Watt DC/DC Converters



PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES	
GENERAL:							
Switching Frequency	180	200	220	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							
Input to Output	500			VDC	Note 5		
Input to Case				VDC			
Output to Case				VDC	Note 5		
Isolation Resistance							
Input to Output	10 ⁹			Ohms			
Short Circuit Protection					Note 3		
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		
Storage Humidity			95%		Non-Condensing		
REMOTE ON/OFF CONTROL:							
Compatibility					CMOS, TTL, Relay	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.	
On Control							
Off Control					>5.5 VDC or open circuit		
					<1.8V, Note 4		
INPUT:							
Input Voltage							
12 Vin	10.00	12.00	20.00	VDC	Note 6	4. Long term continuous operation in this mode is not recommended. Converter will auto-restart once short has been removed.	
24 Vin	18.00	24.00	36.00	VDC			
48 Vin	36.00	48.00	72.00	VDC			
Input Current							
12 Vin			12.20	Amps	Note 2	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).	
24 Vin			6.80	Amps	Note 2		
48 Vin			3.30	Amps	Note 2		
Input Ripple Current			20%	Iin max			
Reverse Input Current			100%	Iin max			
OUTPUT:							
Singles:							
Trim			±10.0%	Vout	Full Load 10% to 100% LL to HL Note 3	6. For 12V nominal input, output current values are lower. See "Selection Guide" on page 6 for actual values.	
Voltage Accuracy			±1.00%	Vout			
Load Regulation			±1.00%	Vout			
Line Regulation			±1.00%	Vout			
Current Limit			130%	Iout			
Duals:							
Trim			±10.0%	Vout	Full Load Full Load	6. For 12V nominal input, output current values are lower. See "Selection Guide" on page 6 for actual values.	
Voltage Accuracy							
+Vout			±1.00%	Vout			
-Vout			±1.00%	Vout			
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		

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

* Specifications subject to change without notice.



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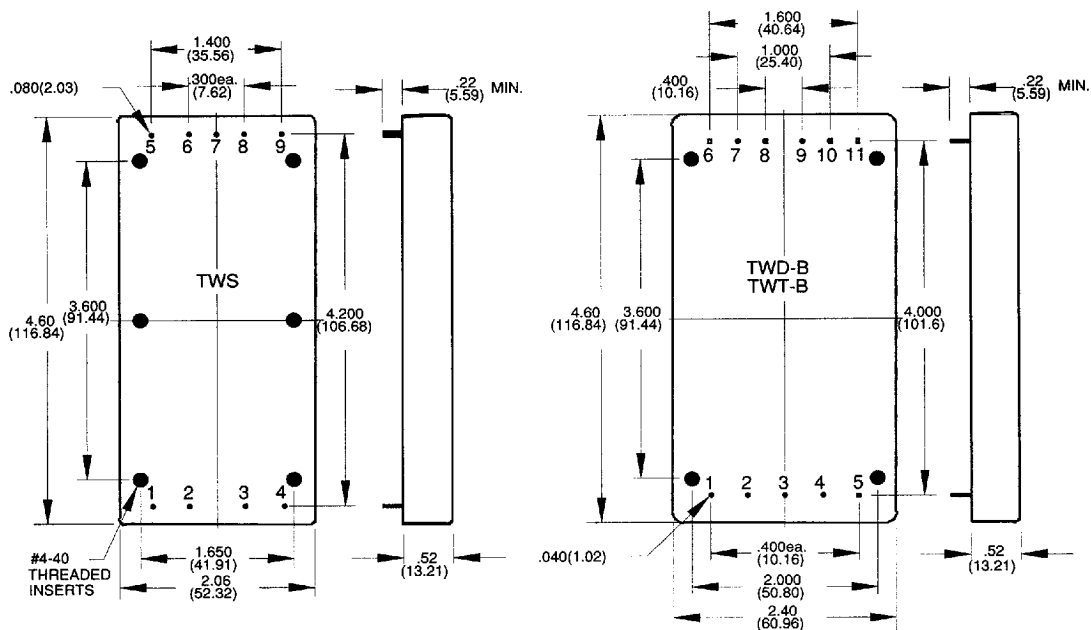
TW Series of 75 to 150 Watt DC/DC Converters



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:						
Voltage Accuracy						
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%	
Vout 2			±1.00%	Vout	10% to 100%	
Vout 3			±1.00%	Vout	10% to 100%	
Line Regulation			±1.00%	Vout	LL to HL	
Current Limit			130%	Iout	Note 3	
Temp. Coefficient			±0.07%	/°C		
Voltage Stability			±0.05%	Vout		
Ripple and Noise			1.00%	Vout	p-p, 20 MHz BW	
Transient Response						
25% step full load			500	µS	1% Error Band	

BOTTOM VIEW

Mechanical tolerances are ± 0.040"



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All Dimensions are in inches (MM)



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TW Series of 75 to 150 Watt DC/DC Converters



PIN CONNECTIONS

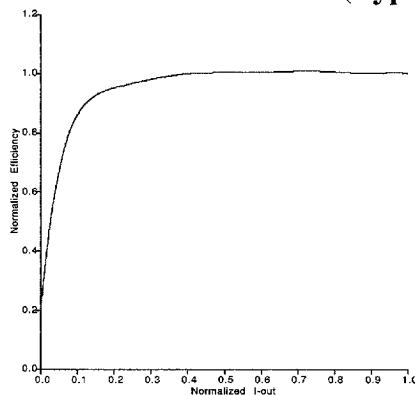
PIN #	SINGLE	DUAL	TRIPLE
1	-Vin	No Pin	No Pin
2	No Connect	Shut Down	Shut Down
3	Shut Down	-Vin	-Vin
4	+Vin	+Vin	+Vin
5	-Vout	Case	Case
6	-Sense	Trim	Trim
7	Trim	-Vout (5V)	-Vout (5V)
8	+Sense	+Vout (5V)	+Vout (5V)
9	+Vout	Trim	-Vout (Aux.)
10	No Pin	-Vout (Aux.)	Common
11	No Pin	+Vout (Aux.)	+Vout (Aux.)

THERMAL IMPEDANCE

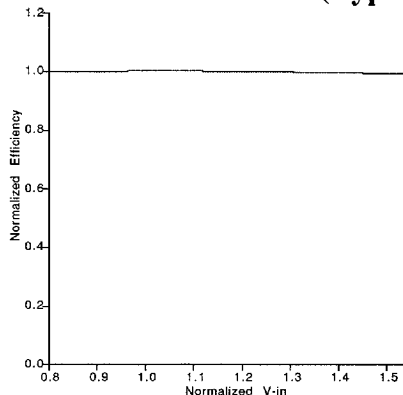
	Typical R θ CA
NATURAL CONVECTION	5.7°C/W
100 LFPM	4.2°C/W
200 LFPM	3.2°C/W
300 LFPM	2.6°C/W
400 LFPM	2.2°C/W

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.

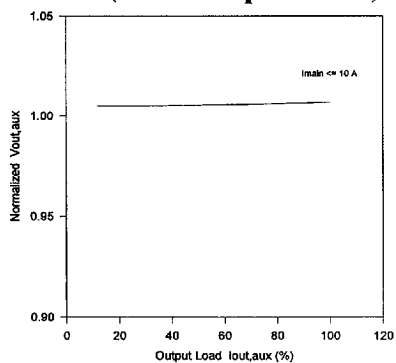
EFFICIENCY vs. LOAD (Typical)



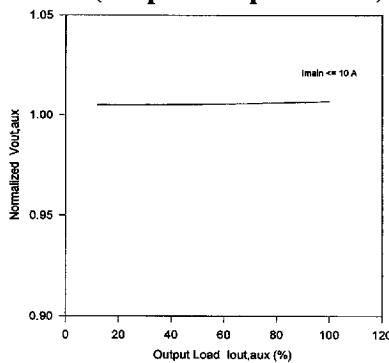
EFFICIENCY vs. Vin (Typical)



TYPICAL CROSS-REGULATION (Dual Output Units)



TYPICAL CROSS-REGULATION (Triple Output Units)



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