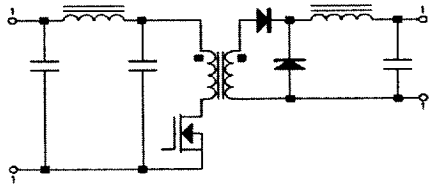
STANDARD HIGH-DENSITY DC/DC CONVERTERS WITH SINGLE, DUAL OR TRIPLE REGULATED OUTPUTS. AN INTERNAL Π (Pi) INPUT FILTER IS STANDARD AND IS USED TO REDUCE REFLECTED RIPPLE CURRENT. ALL MODELS FEATURE A BLACK ANODIZED ALUMINUM CASE WITH SIX-SIDED SHIELDING.

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

BLOCK DIAGRAM



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
- IndustrialEquipment
- Medical Equipment
- A/D and D/A Converters
- Distributed Power Systems

PART NUMBER SELECTION GUIDE

T W T 12 05 - 12B HS

T	W	T	12	05	- 12B		HS	
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: *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
Type = TW
Please Consult Accessories Page for available options

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
GENERAL:					
Switching Frequency	180	200	220	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	
Short Circuit Protection					Note 3
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					<1.8V, Note 4
INPUT:					
Input Voltage					
12 Vin	10.00	12.00	20.00	VDC	Note 6
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
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	
Voltage Accuracy			±1.00%	Vout	Full Load
Load Regulation			±1.00%	Vout	10% to 100%
Line Regulation			±1.00%	Vout	LL to HL
Current Limit			130%	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			130%	Iout	Note 3

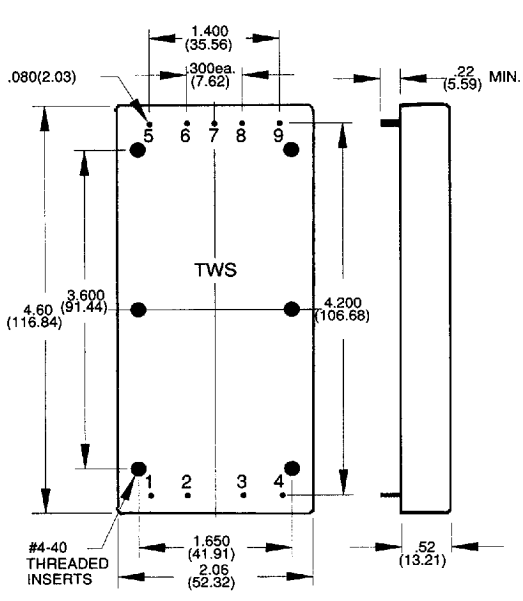
1. No derating required up to a maximum case temperature of 85°C. See efficiency and thermal impedence data provided. Internal Power Dissipation = Pout* (1-Eff) / Eff.
2. Provided for input fuse selection.
3. Continuous Short Circuit Protection is provided. For dual output units the short circuit current 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).
6. For 12V nominal input, output current values are lower. See "Selection Guide" on page 6 for actual values.

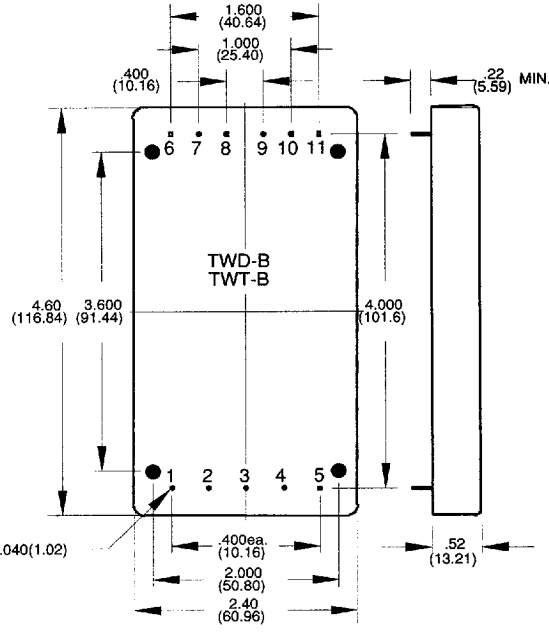
* All specifications typical at +25°C Nominal Line and Full Load unless otherwise noted.
* Specifications subject to change without notice.

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:						
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"





Specifications are subject to change without notice.

All Dimensions are in inches (MM)

PIN CONNECTIONS

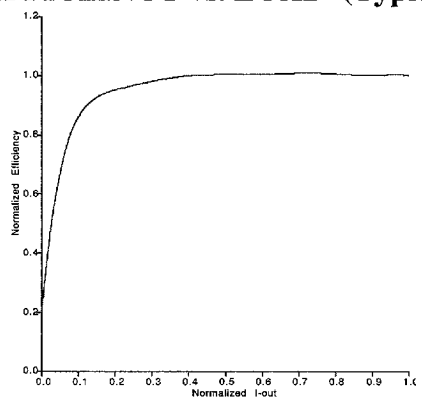
PIN #	SINGLE	DUAL	TRIPLE
1	-Vin	No Pin	No Pin
2	No Connect	Shut Down	Shut Down
3	Shut Down	-Vin	-Vin
4	+Vin	+Vin	+Vin
5	-Vout	Case	Case
6	-Sense	Trim	Trim
7	Trim	-Vout (5V)	-Vout (5V)
8	+Sense	+Vout (5V)	+Vout (5V)
9	+Vout	Trim	-Vout (Aux.)
10	No Pin	-Vout (Aux.)	Common
11	No Pin	+Vout (Aux.)	+Vout (Aux.)

THERMAL IMPEDANCE

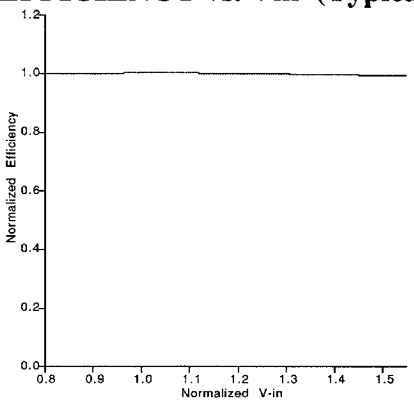
	Typical $R_{\theta CA}$
NATURAL CONVECTION	5.7°C/W
100 LFPM	4.2°C/W
200 LFPM	3.2°C/W
300 LFPM	2.6°C/W
400 LFPM	2.2°C/W

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.

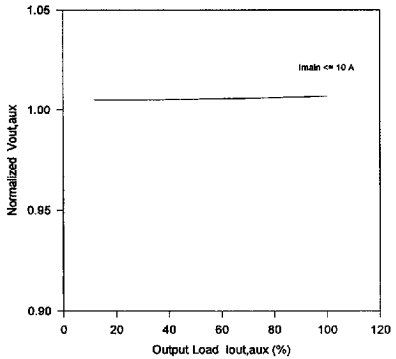
EFFICIENCY vs. LOAD (Typical)



EFFICIENCY vs. Vin (Typical)



TYPICAL CROSS-REGULATION (Dual Output Units)



TYPICAL CROSS-REGULATION (Triple Output Units)