



# INS-B Series of up to 33 Watt DC/DC Converters

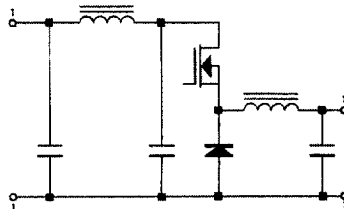


STANDARD NON-ISOLATED DC/DC CONVERTERS WITH SINGLE REGULATED OUTPUTS. ALL MODELS FEATURE A NICKEL-PLATED COPPER CASE WITH SIX-SIDED SHIELDING.



**DIMENSIONS:**  
1.00" x 2.00" x 0.52"  
(25.40) x (50.80) x (13.21)mm

## BLOCK DIAGRAM

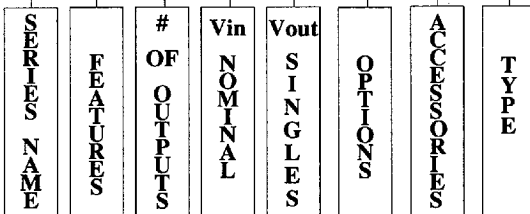


## FEATURES

- Up to 85% Efficiency
- Current Mode Control
- Continuous Short Circuit Protection

## PART NUMBER SELECTION GUIDE

### I N S 5 03.3B



**Features**  
• Not Galvanically Isolated

**# of Outputs**  
S = SINGLE

**Input Voltage Range (VDC)**  
5 = 4.65 to 5.50

*For Other Input Voltage Ranges Please Consult Factory*

**Output Voltage (VDC)**

01.2B = 1.2V @ 10A  
01.5B = 1.5V @ 10A  
02.1B = 2.1V @ 10A  
03.3B = 3.3V @ 10A

*All units require B Suffix*

*For Other Output Voltages Please Consult Factory*

**Options**

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 Mating Socket Selection.*

## APPLICATIONS

- +3.3 VLogic
- Microprocessorst
- BUS Termination
- GTL



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



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# INS-B Series of 33 Watt DC/DC Converters



PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES	
<b>GENERAL:</b>							
Switching Frequency	315	350	385	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	---			VDC	Non-Isolated		
Input to Case	---			VDC	Non-Isolated		
Output to Case	---			VDC	Non-Isolated		
Isolation Resistance							
Input to Output	---			Ohms	Non-Isolated	2. Provided for input fuse selection. 3. Continuous short circuit protection is provided. Long term continuous operation in this mode is not recommended. Converter will auto-restart once short has been removed. 4. Case is connected to Output Common pin.	
Short Circuit Protection					Note 3		
<b>ENVIRONMENTAL:</b>							
Operating Temperature	0		85	°C	Baseplate, Note 1		
Storage Temperature	-40		125	°C	Ambient		
Operating Humidity			95%		Non-Condensing		
Storage Humidity			95%		Non-Condensing		
<b>INPUT:</b>							
Input Voltage							
5 Vin	4.65	5.00	5.50	VDC			
Input Current							
5 Vin			8.35	Amps	Note 2		
Input Ripple Current			20%	I <sub>in</sub> max			
Reverse Input Current			100%	I <sub>in</sub> max			
<b>OUTPUT:</b>							
Voltage Accuracy			±1.00%	V <sub>out</sub>	Full Load		
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		
Temp. Coefficient			±0.02%	/°C			
Voltage Stability			±0.05%	V <sub>out</sub>			
Ripple and Noise			33	mV	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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# INS-B Series of 33 Watt DC/DC Converters



Notes:

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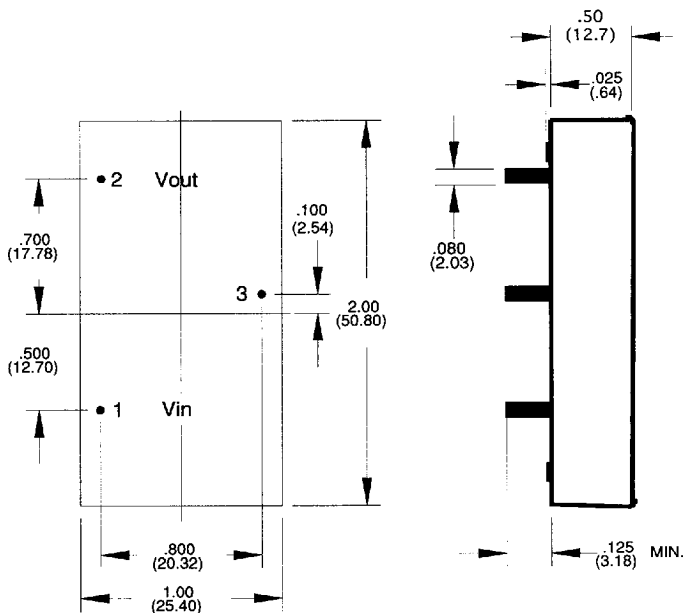
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## BOTTOM VIEW

Mechanical tolerances are  $\pm 0.040$ "



Specifications are subject to change without notice.

All Dimensions are in inches (MM)



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# INS-B Series of 33 Watt DC/DC Converters



## PIN CONNECTIONS

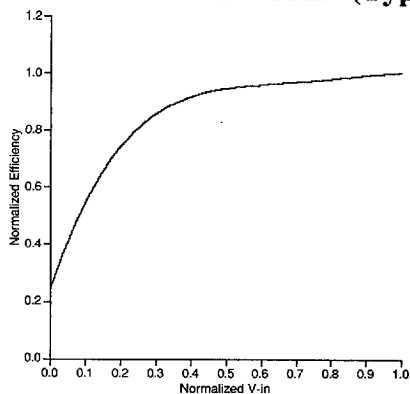
PIN #	SINGLE
1	Vin
2	Vout
3	Common

## THERMAL IMPEDANCE

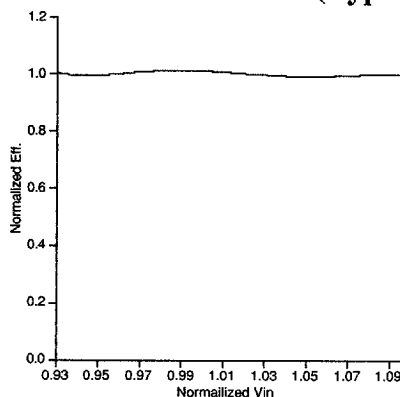
	Typical R $\theta$ CA
NATURAL CONVECTION	22°C/W
100 LFPM	18°C/W
200 LFPM	11°C/W
300 LFPM	8.9°C/W
400 LFPM	6.8°C/W

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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