



# DR Series of 1.25 to 2.0 Watt DC/DC Converters

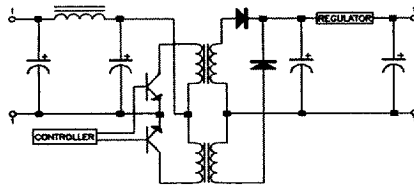


STANDARD DC/DC CONVERTERS WITH SINGLE OR DUAL REGULATED OUTPUTS. ALL MODELS FEATURE THREE TERMINAL OUTPUT REGULATORS FOR TIGHT LINE AND LOAD REGULATION. AN INTERNAL  $\Pi$  (Pi) INPUT FILTER IS STANDARD AND IS USED TO REDUCE REFLECTED RIPPLE CURRENT. ALL MODELS FEATURE A NICKEL-PLATED COPPER CASE WITH SIX-SIDED EMI/RFI SHIELDING.



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

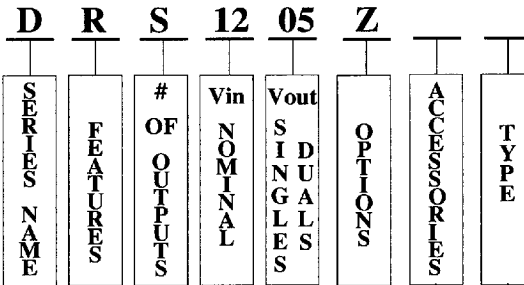
## BLOCK DIAGRAM



## FEATURES

- Industry Standard Pin Out
- Six-Sided Shielding
- 500 VDC I/O Isolation
- Continuous Short Circuit Protection
- Input  $\Pi$  (Pi) Filter

## PART NUMBER SELECTION GUIDE



## APPLICATIONS

- A/D and D/A Converters
- Telecommunication
- Process Control Equipment
- Local Power Distribution

<b>Features</b> • Series Pass Transistor • Regulated	<b>Output Voltage (VDC)</b> <b>Single Output:</b> 05 = 5V @ 250mA 12 = 12V @ 160mA 15 = 15V @ 130mA <b>Dual Output:</b> 12 = $\pm 12V$ @ $\pm 80mA$ 15 = $\pm 15V$ @ $\pm 65mA$  <i>For Other Output Voltages Please Consult Factory</i>	<b>Options</b> S (#) = Modification Number I = Industrial Temperature Range (-40°C to +85°C) Z = Water-washable sealed case
<b># of Outputs</b> S = SINGLE D = DUAL		<b>Accessories / Type</b> MS = Mating Socket  Type = B Please Consult Accessories Page for Mating Socket Selection. C
<b>Input Voltage Range (VDC)</b> 5 = 4.65 to 5.50 12 = 10.9 to 13.2 24 = 21.6 to 26.4 28 = 25.2 to 30.8 48 = 43.2 to 52.8		

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**INTERNATIONAL POWER DEVICES, INC.**  
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PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS	NOTES:	
<b>GENERAL:</b>							
Switching Frequency	180	200	220	KHz		1. No derating required up to a maximum case temperature of 85°C. Internal Power Dissipation = $P_{out} * (1 - Eff) / Eff$ .	
Isolation Voltage				VDC			
Input to Output	500				Note 4		
Input to Case					Note 4		
Output to Case							
Isolation Resistance						2. Provided for input fuse selection.	
Input to Output	10 <sup>9</sup>			Ohms			
Short Circuit Protection					Note 3		
<b>ENVIRONMENTAL:</b>							
Operating Temperature	-25		85	°C	Note 1	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. Long term operation in this mode is not recommended. Converter will auto-restart once short has been removed.	
Storage Temperature	-40		125	°C	Ambient		
Operating Humidity			95%		Non-Condensing		
Storage Humidity			95%		Non-Condensing		
<b>INPUT:</b>							
Input Voltage						4. 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	4.65	5.00	5.50	VDC			
12 Vin	10.90	12.00	13.20	VDC			
24 Vin	21.60	24.00	26.40	VDC			
28 Vin	25.20	28.00	30.80	VDC			
48 Vin	43.20	48.00	52.80	VDC			
Input Current							
5 Vin			0.61	Amps	Note 2		
12 Vin			0.27	Amps	Note 2		
24 Vin			0.13	Amps	Note 2		
28 Vin			0.11	Amps	Note 2		
48 Vin			0.08	Amps	Note 2		
Input Ripple Current			20%	Iin max			
Reverse Input Current			100%	Iin max			
<b>OUTPUT:</b>							
<b>Singles:</b>							
Voltage Accuracy			±4.00%	Vout	Full Load	4. 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).	
Load Regulation			±0.50%	Vout	10% to 100%		
Line Regulation			±0.30%	Vout	LL to HL		
<b>Duals:</b>							
Voltage Accuracy							
+Vout			±4.00%	Vout	Full Load		
-Vout			±4.00%	Vout	Full Load		
Load Regulation							
+Vout			±0.50%	Vout	10% to 100%		
-Vout			±0.50%	Vout	10% to 100%		
Line Regulation			±0.30%	Vout	10% to 100%		
Temp. Coefficient			±0.02%	/°C			
Voltage Stability			±0.05%	Vout			
Ripple and Noise			40	mV	p-p, 20MHz BW		
Transient Response							
25% Step Up 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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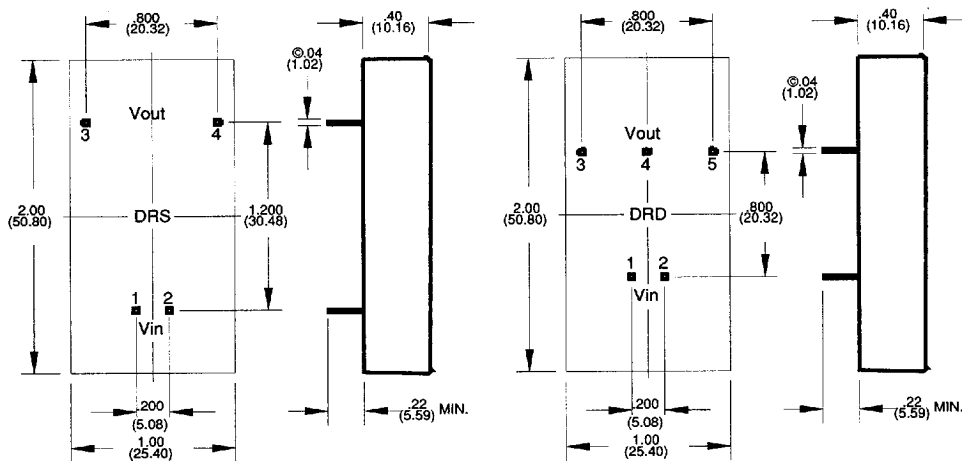
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PIN #	SINGLE	DUAL
1	-Vin	+Vin
2	+Vin	-Vin
3	-Vout	+Vout
4	No Pin	Common
5	+Vout	-Vout

## BOTTOM VIEW

Mechanical tolerances are  $\pm 0.04''$



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All Dimensions are in inches (MM)



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