Very Wide input 3W DC/DC

R3 Series

Features

- Very wide 30 to 175V input range
- Dual & single 3W output
- PCB mounting
- Low input noise
- Overload protected
- Very high reliability
- No external components needed
- 5 year warranty

The R3 Series offers a single converter for 4 nominal input voltages. Especially suitable for high reliability telecommunications, industrial Process Control, IT equipment, distributed power systems etc. Particularly where a very wide input range (from 30V to 175V DC) is required, such as when the DC power source is an "unknown quantity". Refer to the i3 Series (Input = 10 - 72V DC for 12V, 24V, 32V or 48V nominal input).

AS/NZS ISO 9001 BUREAU VERITAS Certification

SPECIFICATIONS

DC Outputs: (See Selector Guide)	One or two, both regulated, common zero.
DC Output Power:	3 Watts maximum (continuous)
Ripple And Noise: (See Selector Guide)	Typically <70mV RMS, <200mV P-P (24V O/P)
Minimum Load:	0 A. No minimum load is required for normal performance.
Very Wide Input Voltage range:	**30V to 175V DC** (200V DC surge, 200mS)
Suitable DC Nominal Inputs:	48V, 72V or 120V DC
Load Regulation:	< 2% For all loads from 10% to full load
Line Regulation:	< 0.02% For all input voltages from 36 to 150 V DC
Line Regulation:	< 0.03% For all input voltages from 30 to 175 V DC
Voltage Setting accuracy:	<± 2% at 48V input, full load
Temperature Coefficient:	< 0.1% per °C after 1 Hr. Any change in output voltage due towarm-up drift and temperature does not exceed regulation limits.
Isolation, Input to Output	20MΩ, 3,500V DC, 2500V RMS. Capacitance: < 57pF
Short Circuit and Over Current protection:	100% to 120% of full power, indefinite short circuit period.
Reverse Input Protection:	Reversed Input Polarity Blows external input fuse (1/2A SF)
Operating Temperature:	-35°C to 65°C, no de-rating, Relative Humidity: 5% to 95%
Shipping and Storage:	-35°C to 105°C , Relative Humidity: 5% to 95%
Withstand Vibration :	5.2G, 3 axes to 400Hz Under operation
Withstand Shock:	28G 3 axes Under operation
Standards, Safety:	IEC 950, AS 3260, UL 1950, CSA22.2 No. 950
Standards, EMI:	CISPR 22, AS 3548, FCC, VDE 0871, all Class A conducted(with a single 1μF low X7R external input capacitor)
Input Ripple Current	<50mA P-P (140kHz) at 48V input
Efficiency: (See Curves)	No Load dissipation <600mW at 48V input
Step Load Response:	10% to 70% step load < 6% peak or dip, Settling Time < 1ms
Very High Reliability:	100% SMD, MTBF: > 800,000 Hrs (MIL-HDBK 217F G.B.)
Low Profile Outline:	Less than 10mm total height above motherboard.

Common Mode Noise Filtering:

For efficient reduction of common-mode noise, a 1000pF Y-rated capacitor may be connected, if required, between one pole of the input and the output common. For best results, tracking on the motherboard should be short to minimize stray inductance.

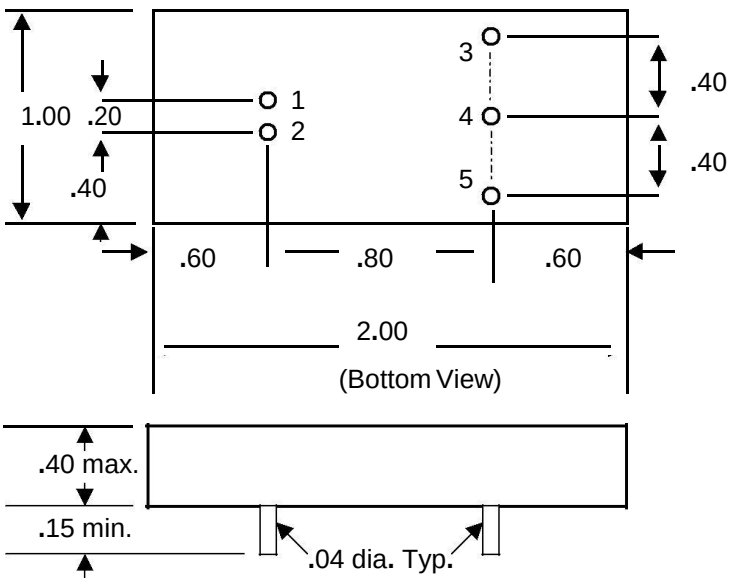
Selector Guide

Output	Model	Max. Load (either O/P)[1]	Ripple (RMS, P-P)[2]
± 5V	R3D05	600 mA	75mV
± 6V	R3D07	430 mA	100mV
± 12V[3]	R3D12	250 mA	120mV
± 15V[3]	R3D15[3]	200 mA	150mV
± 24V[3]	R3D24[3]	125 mA	200mV
± 28V[3]	R3D28[3]	107 mA	200mV
3.3V	R3S03	910 mA	75mV
5V	R3S05	600 mA	75mV
6V	R3S07	430 mA	100mV
12V	R3S12	250 mA	120mV
15V	R3S15	200 mA	150mV
24V	R3S24	125 mA	200mV

Notes:

1. On **dual** models, up to the full power may be drawn from **either** output, but the **total power** should not exceed **3 watts**.
2. **Output** Ripple is specified at worst-case input voltage, **full load** and for **dual** models, at a loadof **1.5 watts on each output.** Ripple isbetter than approximately linearly related to load current where the dual loads are unbalanced.
3. These **dual** models can be used as 24V, 30V, 48V or 56V **single** output by removing the centre output pin (if desired).

DIMENSIONS (inches)



PIN ASSIGNMENTS

SINGLE OUTPUT

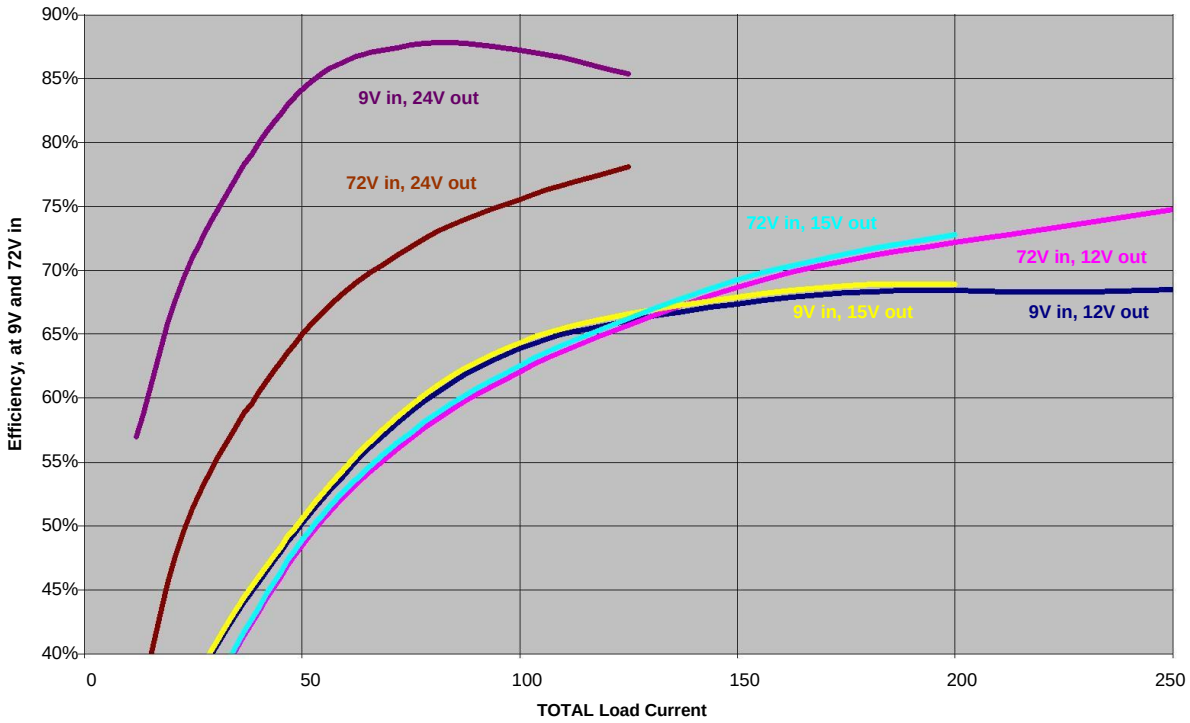
1. + V in
2. – V in
3. + V out
4. No Pin
5. – V out

DUAL OUTPUT

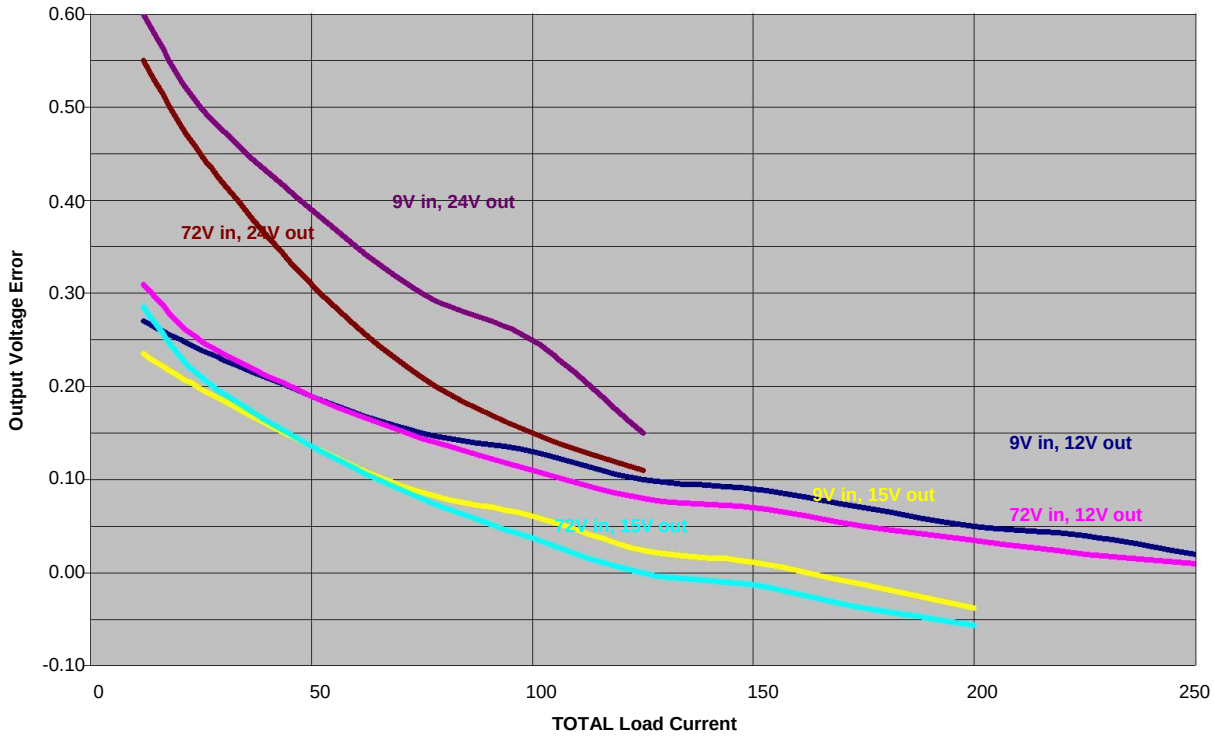
1. + V in
2. – V in
3. + V out
4. out COM
5. – V out

Suggested holes size: .05 (1.27mm)

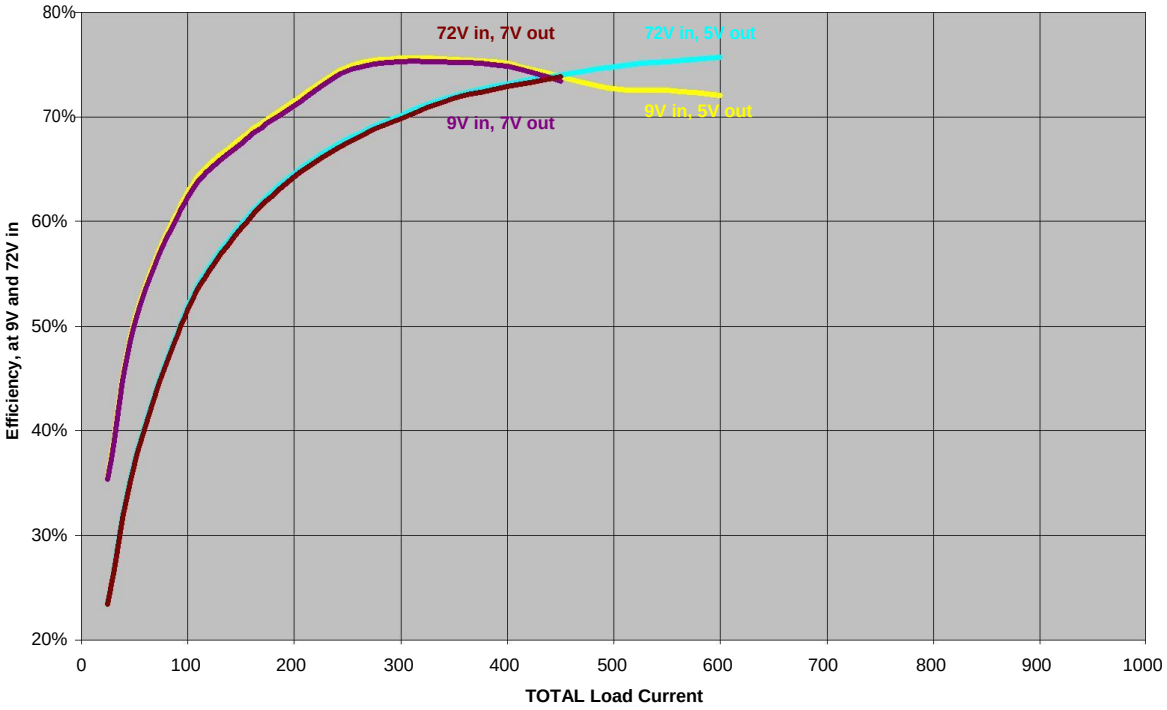
Typical Efficiency, 12, 15 and 24V Models



Typical Load & Line Regulation, 12, 15 and 24V Models



Typical Efficiency, 5 and 7V Models



Typical Load & Line Regulation, 3, 5 & 7V Models