

2 Watt**24 Pin DIL Package V**

- o Pi Input Filter
- o Regulated Output
- o Single & Dual Output
- o Short Circuit Protection
- o 1000 VDC I/O-Isolation
 2000 VDC I/O-Isolation add Suffix „H2“
 3000 VDC I/O-Isolation add Suffix „H3“
 4000 VDC I/O-Isolation add Suffix „H4“
 5200 VDC I/O-Isolation add Suffix „H5“
 6000 VDC I/O-Isolation add Suffix „H6“
- o Metal Case Available (up to 3000 VDC Isolation)



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		Eff. %	Capacitor Load (µF)
				NO LOAD	FULL LOAD		
2VRS5N3.3M	5 VDC	3.3 VDC	500 mA	75 mA	622 mA	53	330
2VRS5N5M		5 VDC	400 mA		615 mA	65	
2VRS5N9M		9 VDC	222 mA		597 mA	67	
2VRS5N12M		12 VDC	166 mA		571 mA	70	
2VRS5N15M		15 VDC	133 mA		588 mA	68	
2VRS5N24M		24 VDC	83.3 mA		615 mA	65	
2VRD5N3.3M		±3.3 VDC	±300 mA	30 mA	638 mA	62	±1000
2VRD5N5M		±5 VDC	±200 mA		588 mA	68	
2VRD5N9M		±9 VDC	±111 mA	40 mA	571 mA	70	±470
2VRD5N12M		±12 VDC	±83 mA				
2VRD5N15M		±15 VDC	±67 mA				
2VRD5N24M		±24 VDC	±42 mA	50 mA	579 mA	69	±220

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		Eff.%	Capacitor Load (μF)	
				NO LOAD	FULL LOAD			
2VRS12N3.3M	12 VDC	3.3 VDC	500 mA	70 mA	245 mA	56	330	
2VRS12N5M		5 VDC	400 mA		260 mA	64		
2VRS12N9M		9 VDC	222 mA		245 mA	68		
2VRS12N12M		12 VDC	166 mA		238 mA	70		
2VRS12N15M		15 VDC	133 mA		252 mA	66		
2VRS12N24M		24 VDC	83.3 mA		256 mA	65		
2VRD12N3.3M		±3.3 VDC	±300 mA	20 mA	250 mA	66	±1000	
2VRD12N5M		±5 VDC	±200 mA		228 mA	73		
2VRD12N9M		±9 VDC	±111 mA		222 mA	75	±470	
2VRD12N12M		±12 VDC	±83 mA		213 mA	78		
2VRD12N15M		±15 VDC	±67 mA	35 mA	216 mA	77	±220	
2VRD12N24M		±24 VDC	±42 mA		219 mA	76		
2VRS24N3.3M	24 VDC	3.3 VDC	500 mA	25 mA	120 mA	57	330	
2VRS24N5M		5 VDC	400 mA		132 mA	63		
2VRS24N9M		9 VDC	222 mA		122 mA	68		
2VRS24N12M		12 VDC	166 mA					
2VRS24N15M		15 VDC	133 mA					
2VRS24N24M		24 VDC	83.3 mA		15 mA	121 mA		68
2VRD24N3.3M		±3.3 VDC	±300 mA	114 mA		73		
2VRD24N5M		±5 VDC	±200 mA	111 mA		75	±470	
2VRD24N9M		±9 VDC	±111 mA	104 mA		80		
2VRD24N12M		±12 VDC	±83 mA	20 mA	108 mA	77		±220
2VRD24N15M		±15 VDC	±67 mA		111 mA	75		
2VRD24N24M		±24 VDC	±42 mA					

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INPUT SPECIFICATIONS

Input Voltage Range	±10%
Input Filter	Pi Type
Input Reflected Ripple Current ¹⁾	35 mA p-p

OUTPUT SPECIFICATIONS

Voltage Accuracy	±2% max.
Temperature Coefficient	±0.02%/°C
Ripple and Noise, 20MHz BW ²⁾	75 mV p-p
Short Circuit Protection	Indefinite (Automatic Recovery)
Capacitor Load ³⁾	see table
Line Regulation	±0.5%
Load Regulation	(From 0% to 100% Load) (Output 3.3 V Model)
	±0.5% ±1.5%

NOTE:

1. Measured Input reflected ripple current with a simulated source inductance of 12 µH.
2. Ripple & Noise measured with 20 MHz bandwidth.
3. Tested by minimal Vin and constant resistive load.

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GENERAL SPECIFICATION

Efficiency	see table	
I/O Isolation Voltage (3 sec.) ¹⁾	1000 VDC min.	
Suffix "H2"	2000 VDC min.	
Suffix "H3"	3000 VDC min.	
Suffix "H4"	4000 VDC min.	
Suffix "H5"	5200 VDC min.	
Suffix "H6"	6000 VDC min.	
Isolation Resistance	1000 Mohms min.	
Isolation Capacitance	60 pF	
Switching Frequency	Single Dual	40 kHz 300 kHz
Operating Temperature Range	-40°C to +85°C (see derating curve)	
Case Temperature	+100°C max.	
Storage Temperature Range	-40°C to +125°C	
Humidity	95% rel H	
Cooling	Nature Convection	
Reliability Calculated MTBF (MIL-HDBK-217F)	>3.072 Mhrs	
Case Material Standard Model	Non-Conductive Black Plastic (UL94V-0 rated)	
Case Material Suffix "A" Model	Nickel-Coated Copper	
Base Material	Non-conductive Black Plastic (UL94V-0 rated)	
Pin Material	0.5 mm Alloy42 Solder-coated ø0.5 mm Brass Solder-coated	
Potting Material	Epoxy (UL94V-0 rated)	
Weight	Plastic Case Metal Case	12.5 g 15.0 g
Dimensions	31.75 x 20.32 x 10.16 mm (1.25 x 0.8 x 0.4 Inches)	
Safety Standard (designed to meet)	IEC 60950-1	

NOTE:

1. Isolation Voltage Input & Output for metal case up to 3000 VDC min. only available.

ABSOLUTE SPECIFICATIONS

These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

Input Voltage (100 mS)	5 V	0 VDC to 7 VDC
	12 V	0 VDC to 15 VDC
	24 V	0 VDC to 28 VDC
Lead Soldering Temperature (1.5 mm from case 10 sec.)	+260°C	

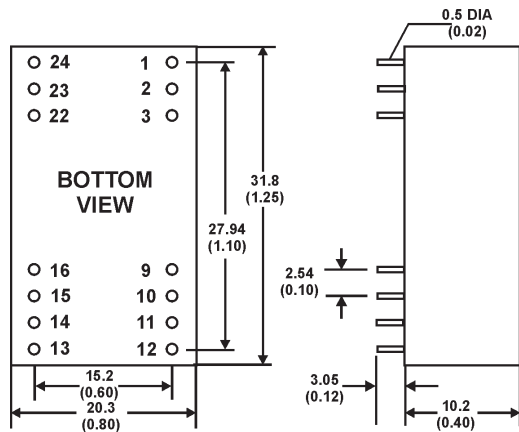
NOTE:

Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.

Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

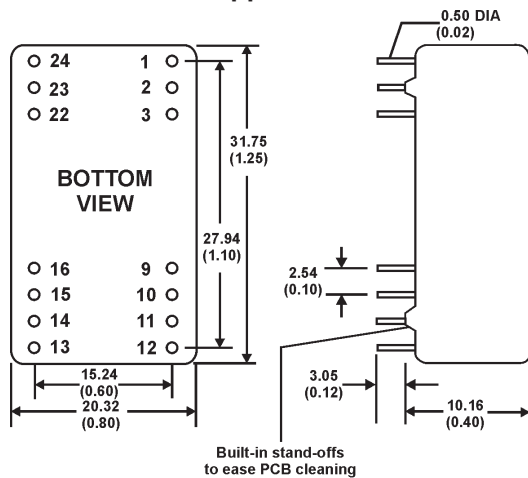
SPECIFICATIONS

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MECHANICAL SPECIFICATIONS**CASE "V"****Non Conductive Black Plastic**

All Dimensions in mm (Inches)

1. Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
2. Pin pitch tolerance: ± 0.35 (± 0.014)
3. Case Tolerance: ± 0.5 (± 0.02)

Nickel-Coated Copper

All Dimensions in mm (Inches).

1. Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
2. Pin pitch tolerance: ± 0.35 (± 0.014)
3. Case Tolerance: ± 0.5 (± 0.02)

PIN CONNECTIONS 1000 VDC

PIN	SINGLE	DUAL
1 & 24	+INPUT	+INPUT
2 & 23	NC*	-OUTPUT
3 & 22	NC*	COMMON
9 & 16	NO PIN	NO PIN
10 & 15	-OUTPUT	COMMON
11 & 14	+OUTPUT	+OUTPUT
12 & 13	-INPUT	-INPUT

* Option "No Pin" at Single Output add Suffix "NP" to Part No.

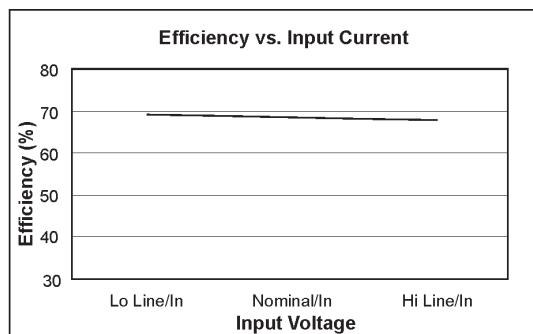
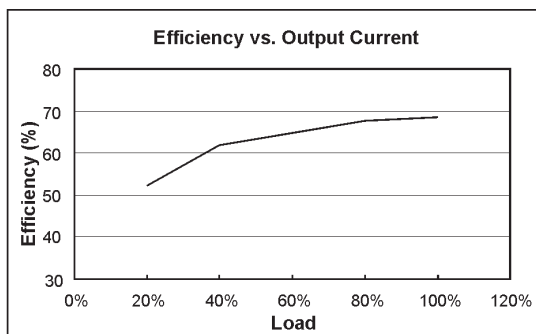
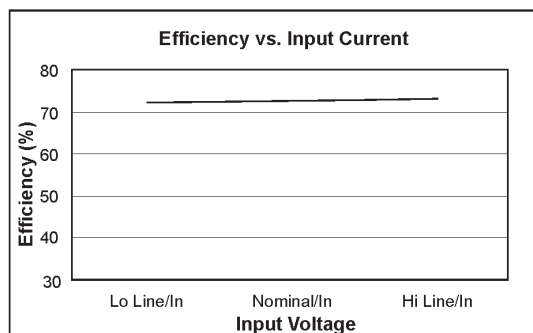
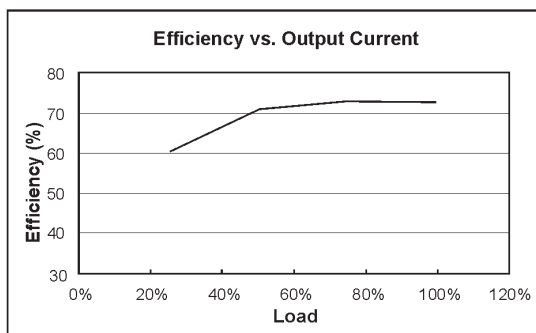
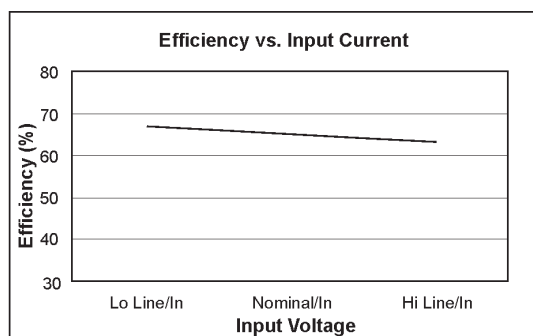
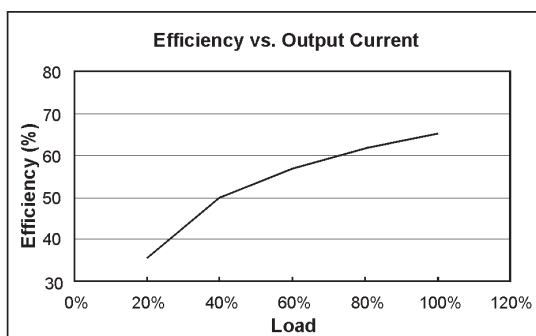
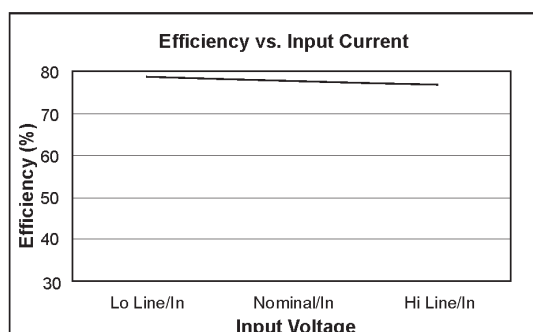
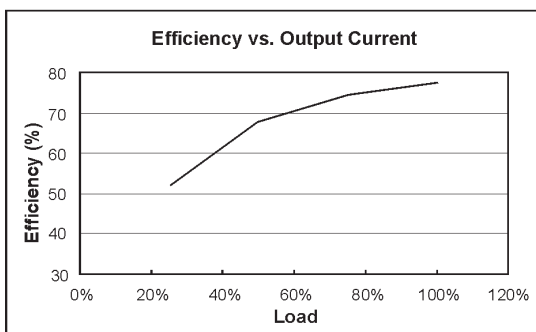
PIN CONNECTIONS 2000 to 6000 VDC

PIN	SINGLE	DUAL
1 & 2	+INPUT	+INPUT
3 & 22	NO PIN	NO PIN
9 & 16	NO PIN	NO PIN
10 & 11	NO PIN	COMMON
12	-OUTPUT	NO PIN
13	+OUTPUT	-OUTPUT
14	NO PIN	NO PIN
15	NO PIN	+OUTPUT
23 & 24	-INPUT	-INPUT

Application Note: Please don't operate in parallel use.

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DIAGRAMS**5 V Single Output Models****5 V Dual Output Models****24 V Single Output Models****24 V Dual Output Models**

The models listed above is just for standard type. If you need the special specification product, please contact us.

NOTICE:

The information in this document has been carefully checked. However, no responsibility is assumed for inaccuracies! Specifications can be changed without notice. The latest and most complete information can be found on our website.