

# 3 Watt

# 24 Pin DIL Package V 4:1 Input Range



- o Wide Input Range
- o Regulated Outputs
- o Single & Dual Outputs
- o Efficiency up to 80%
- o Continuous Short Circuit Protection
- o Option 3000 VDC I/O-Isolation



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF	
				NO LOAD	FULL LOAD		
3VRS24X3.3LC	9-36 VDC	3.3 VDC	600 mA	15 mA	117 mA	70	
3VRS24X5LC		5 VDC	600 mA		174 mA	72	
3VRS24X12LC		12 VDC	250 mA		165 mA	76	
3VRS24X15LC		15 VDC	200 mA	25 mA	179 mA	70	
3VRD24X5LC		±5 VDC	±300 mA		174 mA	72	
3VRD24X12LC		±12 VDC	±125 mA		12 mA	88 mA	71
3VRD24X15LC		±15 VDC	±100 mA			87 mA	72
3VRS48X3.3LC	18-72 VDC	3.3 VDC	600 mA	7.5 mA	58 mA	70	
3VRS48X5LC		5 VDC	600 mA		87 mA	72	
3VRS48X12LC		12 VDC	250 mA		78 mA	80	
3VRS48X15LC		15 VDC	200 mA	12 mA	88 mA	71	
3VRD48X5LC		±5 VDC	±300 mA		87 mA	72	
3VRD48X12LC		±12 VDC	±125 mA		87 mA	72	
3VRD48X15LC		±15 VDC	±100 mA				

**SPECIFICATIONS**

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

**INPUT SPECIFICATIONS**

Input Voltage Range	4:1
Input Filter	Pi Network

**OUTPUT SPECIFICATIONS**

Voltage Accuracy		±2%max.
Voltage Balance, Dual Output		±1%max.
Temperature Coefficient		±0.05%/°C
Ripple and Noise, 20MHz BW	Single & ±5V Dual	100mV p-p max. 1% p-p max.
Short Circuit Protection		Continuous
Line Regulation <sup>1</sup>		±0.5% max.
Load Regulation	Single <sup>2</sup> Dual <sup>3</sup>	±0.5% max. ±1.0% max.

## NOTE:

1. Measured from High Line to Low Line.
2. Measured from Full Load to 10% Load.
3. Measured from Full Load to 1/4 Load.

**GENERAL SPECIFICATION**

Efficiency		see table
Isolation Voltage		500 VDC min.
Suffix "H" *		3000 VDC min.
Isolation Resistance		1000 Mohms
Switching Frequency		100 kHz min.
Operating Temperature Range		-25°C to +71°C
Case Temperature	(Plastic Case) (Copper Case)	+95°C max. +100°C max.
Storage Temperature Range		-40°C to +100°C
Derating >+71°C		-3.5%/°C
Recommended Reflow Soldering Pb-free**		see diagram
Cooling		Free-Air Convection
Case Material		Non-Conductive Black Plastic
Suffix "M" *)		Black Coated Copper with Non-Conductive Base
Dimensions		1.25 x 0.8 x 0.4 Inches (31.8 x 20.3 x 10.2 mm)
MTBF (MIL-HDBK-217F)		1.145.000 hrs min.

\*) Suffix "HM" 1.5 KVDC Instead of 3KVDC Isolation

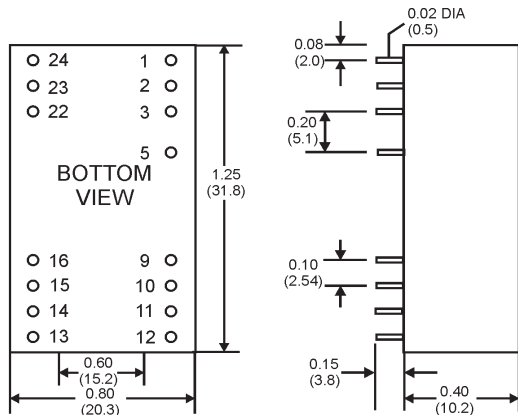
\*\*) We do not recommend vapor phase soldering!

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**MECHANICAL SPECIFICATIONS**

CASE "V"



All Dimensions in Inches(mm)  
Tolerance .xx = ±0.02, .xxx = ±0.010 Inches

PIN CONNECTIONS 500VDC		
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.

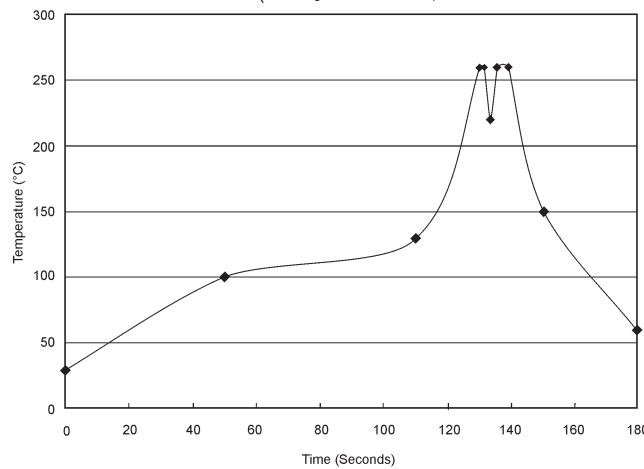
PIN CONNECTIONS 1.5KVDC & 3KVDC		
PIN	SINGLE	DUAL
1 & 24	NO PIN	NO PIN
2 & 3	-INPUT	-INPUT
5	NO PIN	NO PIN
9	NC*	COMMON
10 & 15	NC*	NC*
11	NC	-OUTPUT
12 & 13	NO PIN	NO PIN
14	+OUTPUT	+OUTPUT
16	-OUTPUT	COMMON
22 & 23	+INPUT	+INPUT

\* Option "NO PIN" add Suffix "NP" to Part No.

**DIAGRAMS**

**Lead Free Wave Soldering Profile**

(Soldering Material: Sn/Cu/Ni)



1. Ramp up rate during preheat: 1.5°C/Sec (From 50°C to 100°C)
2. Soaking temperature: 0.5°C/Sec (From 100°C to 130°C), 60±20 seconds
3. Peak temperature: 260°C, above 250°C 3-8 Seconds
4. Ramp up rate during cooling: -10.0°C/Sec (From 260°C to 150°C)

**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.