

**3 Watt****24 Pin DIL Package V**  
**2:1 Input Range - High Efficiency**

- o Wide Input Range
- o High Efficiency and Wide Operating Temperature
- o Regulated Outputs
- o Single & Dual Outputs
- o Efficiency up to 87%
- o Option 3000 VDC I/O-Isolation
- o Continuous Short Circuit Protection
- o No Tantalum Capacitor inside

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF	Cap. Load
				NO LOAD	FULL LOAD		
3VERS5W3.3LC	4.5-9 VDC	3.3 VDC	600 mA	15 mA	550 mA	72	2200 µF
3VERS5W5LC		5 VDC	600 mA		779 mA	77	
3VERS5W12LC		12 VDC	250 mA		750 mA	80	
3VERS5W15LC		15 VDC	200 mA		750 mA	80	
3VERD5W5LC	4.5-9 VDC	±5 VDC	±300 mA	25 mA	779 mA	77	1000 µF
3VERD5W12LC		±12 VDC	±125 mA		750 mA	80	
3VERD5W15LC		±15 VDC	±100 mA		750 mA	80	
3VERS12W3.3LC	9-18 VDC	3.3 VDC	600 mA	7.5 mA	212 mA	78	2200 µF
3VERS12W5LC		5 VDC	600 mA		309 mA	81	
3VERS12W12LC		12 VDC	250 mA	10 mA	298 mA	84	
3VERS12W15LC		15 VDC	200 mA		294 mA	85	
3VERD12W5LC		±5 VDC	±300 mA	15 mA	305 mA	82	1000 µF
3VERD12W12LC		±12 VDC	±125 mA	12 mA	298 mA	84	
3VERD12W15LC		±15 VDC	±100 mA	15 mA	294 mA	85	
3VERS24W3.3LC	18-36 VDC	3.3 VDC	600 mA	5 mA	106 mA	78	2200 µF
3VERS24W5LC		5 VDC	600 mA	7.5 mA	152 mA	82	
3VERS24W12LC		12 VDC	250 mA		145 mA	86	
3VERS24W15LC		15 VDC	200 mA		145 mA	86	
3VERD24W5LC		±5 VDC	±300 mA	10 mA	152 mA	82	1000 µF
3VERD24W12LC		±12 VDC	±125 mA		147 mA	85	
3VERD24W15LC		±15 VDC	±100 mA		145 mA	86	
3VERS48W3.3LC	36-72 VDC	3.3 VDC	600 mA	3 mA	52 mA	79	2200 µF
3VERS48W5LC		5 VDC	600 mA		74 mA	84	
3VERS48W12LC		12 VDC	250 mA		73 mA	86	
3VERS48W15LC		15 VDC	200 mA	5 mA	73 mA	86	1000 µF
3VERD48W5LC		±5 VDC	±300 mA	5 mA	74 mA	85	
3VERD48W12LC		±12 VDC	±125 mA		72 mA	87	
3VERD48W15LC		±15 VDC	±100 mA				

**SPECIFICATIONS**

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

**INPUT SPECIFICATIONS**

Input Voltage Range		2:1
Input Surge Voltage (100 ms max.)	5 V	10 VDC max.
	12 V	25 VDC max.
	24 V	50 VDC max.
	48 V	100 VDC max.
Input Filter		Pi Type

**OUTPUT SPECIFICATIONS**

Voltage Accuracy		±2% max.
Voltage Balance, Dual Output		±1% max.
Temperature Coefficient		±0.05%/°C
Ripple and Noise, 20MHz BW	3.3V, 5V	100 mV p-p max.
	12V, 15V	1% p-p max.
Short Circuit Protection		Continuous
Start up Time		10 ms max.
Line Regulation <sup>1)</sup>		±0.5% max.
Load Regulation	Single <sup>2)</sup>	±0.5% max.
	Dual <sup>3)</sup>	±1.0% max.

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.

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<b>GENERAL SPECIFICATION</b>	
Efficiency	see table
Isolation Voltage	500 VDC min.
Suffix "H" <sup>4)</sup>	3000 VDC min.
Suffix "HM"	1500 VDC min.
Isolation Resistance	1000 Mohms
Isolation Capacitance	250 pF
Switching Frequency	100 kHz min.
Operating Temperature Range	-40°C to +85°C
Power de-rating Curve	see Figure1
Case Temperature <sup>5)</sup>	Plastic Case +95°C max. Copper Case +100°C max.
Storage Temperature Range	-40°C to +100°C
Humidity	95% RH max. non condensing
Derating	see Diagram
Cooling	Natural convection
Case Material	Non-Conductive Black Plastic
Case Dimensions	1.25 x 0.8 x 0.4 Inches (31.8 x 20.3 x 10.2 mm)
Weight	12.5 g
Suffix "M"	Black Coated Copper with Non-Conductive Base
MTBF (MIL-STD-217F)	2.5 Mhrs

4) Non-Conductive Black Plastic only

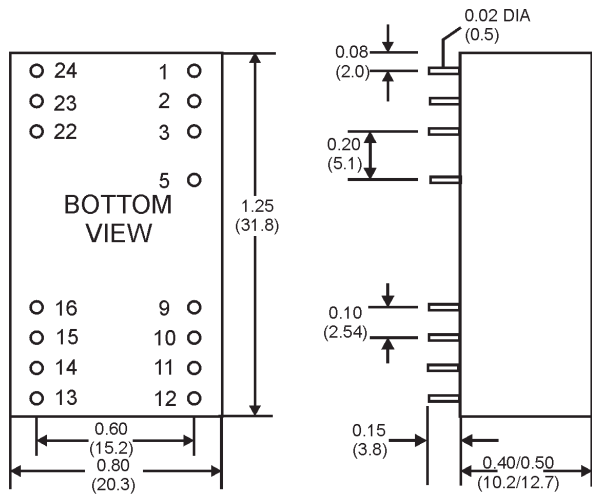
5) Maximum case temperature under any operating condition should not exceed 95°C (Plastic Case), 100°C (Copper Case).

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**MECHANICAL SPECIFICATIONS**

CASE "V"



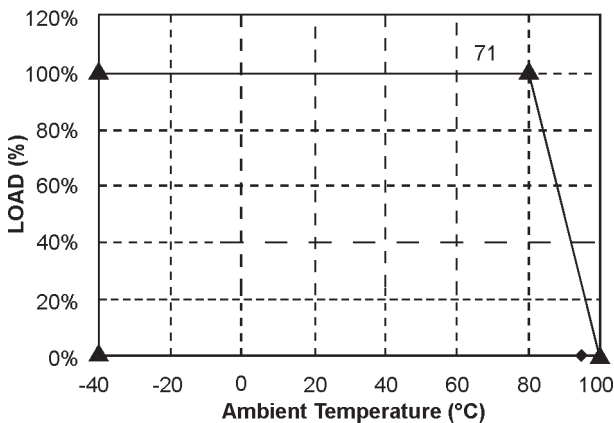
All Dimensions in Inches(mm)  
Tolerance: x.xx = ±0.02, x.xxx = ±0.10

PIN CONNECTIONS 500VDC		
PIN	SINGLE	DUAL
1 & 24	+INPUT	+INPUT
2 & 23	NOT CONNECTED	-OUTPUT
3 & 22	NOT CONNECTED	COMMON
9 & 16	NO PIN	NO PIN
10 & 15	-OUTPUT	COMMON
11 & 14	+OUTPUT	+OUTPUT
12 & 13	-INPUT	-INPUT

PIN CONNECTIONS 1.5 KVDC & 3KVDC		
PIN	SINGLE	DUAL
1 & 24	NO PIN	NO PIN
2 & 3	-INPUT	-INPUT
5	NO PIN	NO PIN
9	NOT CONNECTED	COMMON
10 & 15	NOT CONNECTED	NOT CONNECTED
11	NOT CONNECTED	-OUTPUT
12 & 13	NO PIN	NO PIN
14	+OUTPUT	+OUTPUT
16	-OUTPUT	COMMON
22 & 23	+INPUT	+INPUT

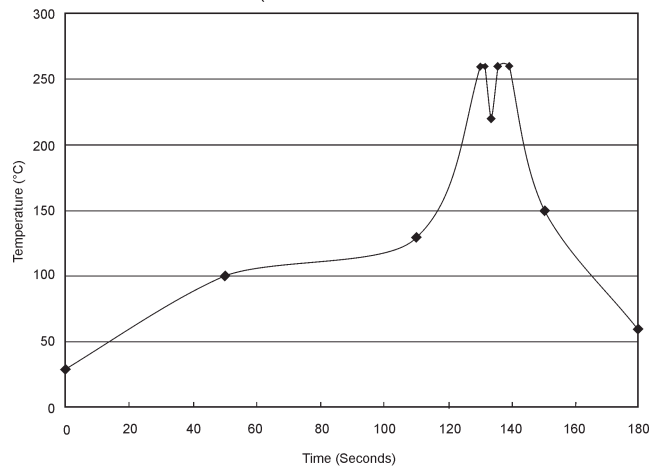
**DIAGRAMS**

Derating Curve for Natural Convection



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 3-6 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.