

3 Watt

24 Pin DIL Package V 2:1 Input Range



- o Wide Input Range
- o Regulated Outputs
- o Single & Dual Outputs
- o Efficiency up to 82%
- o Short Circuit Protection - Power Fold Back
- o Option 3000 VDC I/O-Isolation (With Remote Control)
- o Option Conductive EMI/RFI Meet EN55022 Class B add Suffix „B“

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF	Cap. Load
				NO LOAD	FULL LOAD		
3VRS5W3.3LC*	4.5-6 VDC	3.3 VDC	600 mA	15 mA	582 mA	68	2200 µF
3VRS5W5LC*		5 VDC	600 mA		800 mA	75	
3VRS5W12LC*		12 VDC	250 mA		759 mA	79	
3VRS5W15LC*		15 VDC	200 mA		779 mA	77	
3VRD5W5LC*		±5 VDC	±300 mA	25 mA	779 mA	77	1000 µF
3VRD5W12LC*		±12 VDC	±125 mA		789 mA	76	
3VRD5W15LC*		±15 VDC	±100 mA		800 mA	75	
3VRS12W3.3LC	9-18 VDC	3.3 VDC	600 mA	7.5 mA	229 mA	72	2200 µF
3VRS12W5LC		5 VDC	600 mA		325 mA	77	
3VRS12W12LC		12 VDC	250 mA		313 mA	80	
3VRS12W15LC		15 VDC	200 mA		316 mA	79	
3VRD12W5LC		±5 VDC	±300 mA	12 mA	325 mA	77	1000 µF
3VRD12W12LC		±12 VDC	±125 mA		325 mA	77	
3VRD12W15LC		±15 VDC	±100 mA		316 mA	79	
3VRS24W3.3LC	18-36 VDC	3.3 VDC	600 mA	5 mA	111 mA	74	2200 µF
3VRS24W5LC		5 VDC	600 mA		158 mA	79	
3VRS24W12LC		12 VDC	250 mA		156 mA	80	
3VRS24W15LC		15 VDC	200 mA		152 mA	82	
3VRD24W5LC		±5 VDC	±300 mA	7.5 mA	162 mA	77	1000 µF
3VRD24W12LC		±12 VDC	±125 mA		158 mA	79	
3VRD24W15LC		±15 VDC	±100 mA		154 mA	81	
3VRS48W3.3LC	36-72 VDC	3.3 VDC	600 mA	3 mA	57 mA	72	2200 µF
3VRS48W5LC		5 VDC	600 mA	2 mA	78 mA	79	
3VRS48W12LC		12 VDC	250 mA			80	
3VRS48W15LC		15 VDC	200 mA				
3VRD48W5LC		±5 VDC	±300 mA	3 mA	80 mA	78	1000 µF
3VRD48W12LC		±12 VDC	±125 mA				
3VRD48W15LC		±15 VDC	±100 mA				

*Suffix "B" not available

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 ¹⁾		±0.5% max.
Load Regulation	Single ²⁾	±0.5% max.
	Dual ³⁾	±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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GENERAL SPECIFICATION

Efficiency	see table	
Isolation Voltage	500 VDC min.	
Suffix "H" ⁴⁾	3000 VDC min.	
Suffix "B" **	Option EMI/RFI EN55022 Class B	
Suffix "HBR"	3KVDC + EN55022 Class B + Remote Ctr.	
Isolation Resistance	1000 Mohms	
Isolation Capacitance	250 pF	
Switching Frequency	100 kHz min.	
Operating Temperature Range	-25°C to +71°C	
Case Temperature	Plastic Case	+95°C max.
	Copper Case	+100°C max.
Storage Temperature Range	-40°C to +100°C	
Humidity Non-Condensing	95% RH max. non condensing	
Derating	see Diagram	
Cooling	Free-Air convection	
Case Material	Non-Conductive Black Plastic	
Case Dimensions	Standard	1.25 x 0.8 x 0.4 Inches (31.8 x 20.3 x 10.2 mm)
	Suffix "B"+"HBR"	1.25 x 0.8 x 0.5 Inches (31.8 x 20.3 x 12.7 mm)
Weight	12.5 g	
Suffix "M" ⁵⁾	Black Coated Copper with Non-Conductive Base	
MTBF (MIL-HDBK-217F)	2 Mhrs	

4) Non-Conductive Black Plastic only

5) Suffix "HM" 1.5 KVDC instead of 3 KVDC Isolation

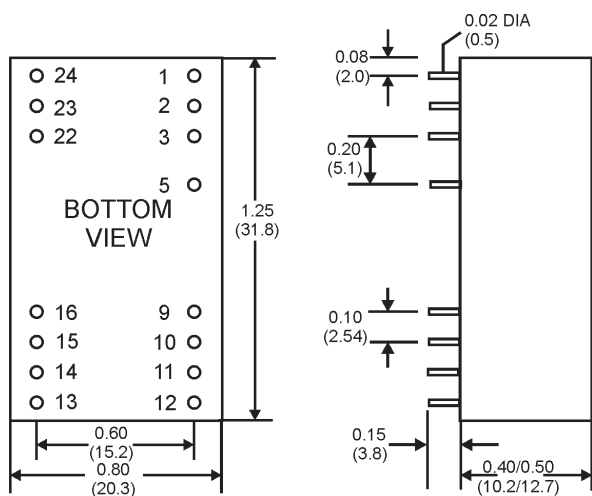
**) Subject to small Changes for Suffix "B". Please double check with M+R directly!

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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	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 1.5 KVDC & 3KVDC		
PIN	SINGLE	DUAL
1 & 24	NO PIN	NO PIN
2 & 3	-INPUT	-INPUT
5	NP	NP
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

PIN 5 = Remote Control at Suffix "HBR"

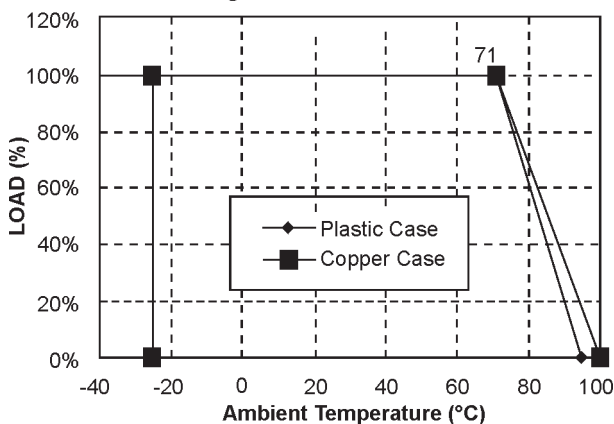
*) Option "NO PIN" add Suffix "NP" to Part-No.

REMOTE ON/OFF CONTROL

Logic Compatibility	CMOS or Open Collector TTL
Ec-ON	>+5.5VDC or Open Circuit
Ec-OFF	<1.8VDC
Shutdown Idle Current	10mA
Control Common	Referenced to Input Minus

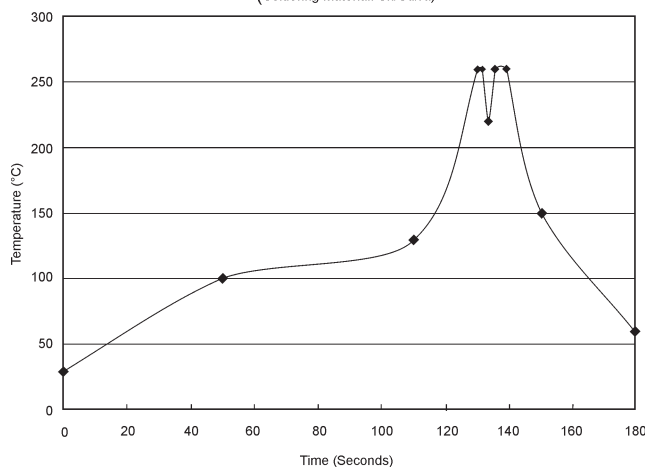
DIAGRAMS

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.