



# 10 Watt, 43 – 160VDC Wide Input DC/DC Converters Series DV104B-Railway



Approval Pending



## Features

- 6,6 – 10 Watt Isolated Output
- Regulated Outputs
- 4:1 Input Range
- 24-Pin DIP Package
- I/O Isolation 2250 VDC
- Shock & Vibration: EN50155 (EN61373)
- EMC: EN50155 (EN20121-3-2) external filter required
- Efficiency up to 86%
- Remote On/Off
- Continuous Short Circuit Protection
- Over Current Protection
- Input Under-Voltage Lockout
- UL60950-1 2<sup>nd</sup> (basic insulation)

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT MAX. [mA]	INPUT CURRENT NO LOAD [mA]	INPUT CURRENT FULL LOAD [mA]	EFF. [%]	CAPACITOR LOAD MAX. [µF]	CASE
DV43-160-3,3S2000B	43 – 160	3,3	2000	6	72	83	2000	B
DV43-160-05S1600B		5	1600	6	86	85	1600	
DV43-160-12S835B		12	835	6	106	86	835	
DV43-160-15S666B		15	666	6	106	86	666	
DV43-160-05D800B		± 5	± 800	6	87	84	800	
DV43-160-12D416B		± 12	± 416	6	107	85	416	
DV43-160-15D333B		± 15	± 333	6	107	85	333	

Technische Änderungen vorbehalten / Technical change reserved

## INPUT SPECIFICATIONS:

Input Voltage Range.....	See Table
Input Surge Voltage ( 100ms max. ) .....	200Vdc max.
Under Voltage lockout .....	Power up ..... 40V
	Power down ..... 38V
Positive Logic Remote On/Off .....	see Note 3 & 4
Input Filter .....	Pi Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy .....	±1,5% max.
Voltage Balance ( Dual Output ) .....	±2,0% max.
Transient Response: 75% - 100% Step Load Change	
Error Band.....	±5% Vout nominal
Recovery Time .....	<500 µs
Ripple & Noise, 20 MHz BW .....	Vo = 3,3V & 5V ..... 75mV p-p max.
	Vo = 12V, 15V, ±12V & ±15V ..... 100mV p-p max.
Temperature Coefficient.....	0,03%/°C max.
Line Regulation ( Note 1 ) .....	±0,2% max.
Load Regulation ( Note 2 ) .....	Single ..... ±0,5% max.
	Dual ..... ±1,0% max.
Cross Regulation ( Dual Output )	
	Load Cross Variation 10%/100% ..... ±5,0% max.
Over Voltage Protection .....	Zener or TVS Clamp
Short Circuit Protection.....	continuous
Current Limit.....	150% Nominal Output typ.

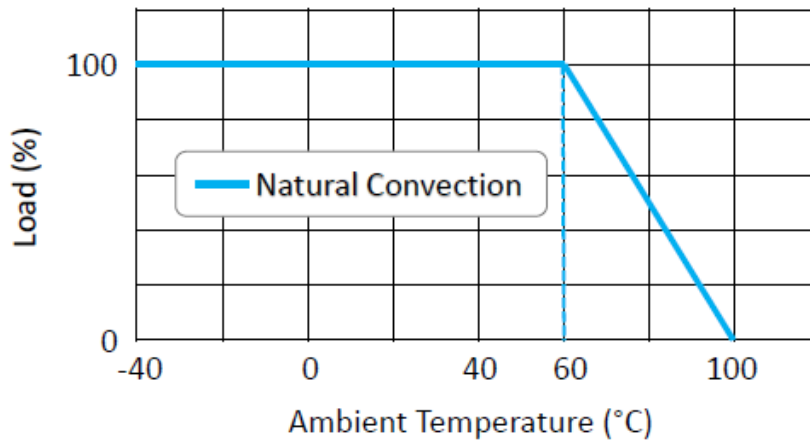
## GENERAL SPECIFICATIONS:

Efficiency.....	See Table
Isolation Voltage I/O .....	2250 VDC min.
Isolation Resistance .....	10 <sup>9</sup> Ω min.
Isolation Capacitance .....	1500pF typ.
Switching Frequency .....	300KHz, typ.
Operating Ambient Temperature Range .....	-40°C to +85°C
Derating, above 60°C .....	Linearly to Zero Power at 100°C
Case Temperature ( Note 5 ) .....	100°C max.
Cooling.....	Natural Convection
Storage Temperature Range .....	-55°C to +125°C
Humidity.....	95% RH max. Non condensing
Safety.....	UL60950-1 2 <sup>nd</sup> (Basic Insulation)
EMC ( Note 6 ) .....	meet EN50155 (EN50121-3-2) with external filter
Shock/Vibration .....	meet EN50155 (EN61373)
Dimensions .....	DIP ..... 1,25 x 0,8 x 0,50 inches ( 31,8 x 20,3 x 12,7 mm )
Case Material .....	Non-Conductive Black Plastic

### Note:

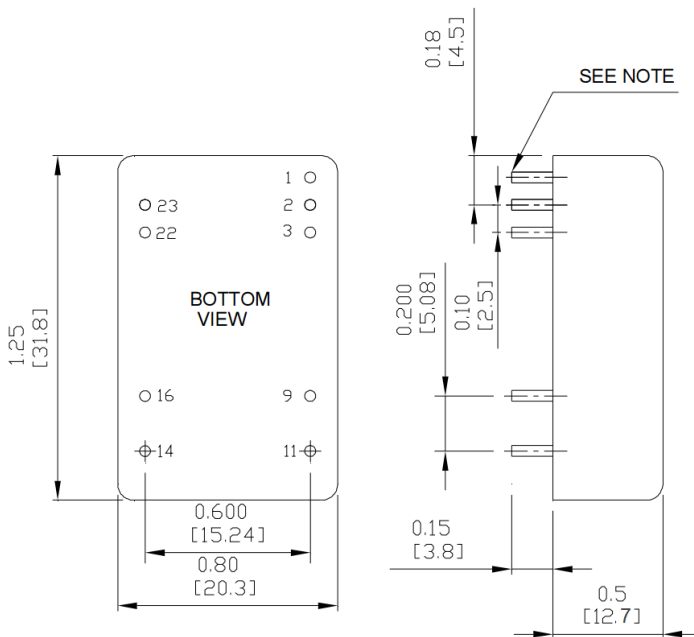
1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Logic compatibility ..... open collector TTL, referenced to -V Input
  - Module on ..... > 3.5VDC to 75VDC or open circuit
  - Module off ..... < 1.2VDC
4. Suffix "N" to the model number with negative logic remote on/off
  - Module on ..... < 1.2VDC
  - Module off ..... >3.5VDC to 75VDC or open circuit
5. Maximum case temperature under any operating condition should not be exceeded 100°C.
6. Design meet EN50155 and RIA12 refer to application note.

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



**CASE B**

Note: Pin Size is 0.020" Inch(0.5mm) DIA  
 All dimensions typical in inches (mm)  
 Toleranz: Inches x.xx=±.02, x.xxx=±.010  
 Millimeters x.x=±.5 , x.xx=±.25



PIN CONNECTION DIP		
1500 VDC		
Pin	Single Output	Dual Output
1	Remote On/Off	Remote On/Off
2	-V Input	-V Input
3	-V Input	-V Input
4,5	NP	NP
9	NP	Common
10	NP	NP
11	NC	-V Output
12	NP	NP
14	+V Output	+V Output
15	NP	NP
16	-V Output	Common
20,21,24	NP	NP
22	+V Input	+V Input
23	+V Input	+V Input

\*NP-NO PIN  
 \*NC-NO CONNECTION WITH PIN