

## ISOLATED DC/DC CONVERTERS

24 Vdc Input 22.5 Vdc/28 mA or 27 Vdc/25 mA Dual Outputs

**bel**  
POWER PRODUCTS

**VRXZ-01RDx0 Series RoHS Compliant Rev.A**

- Isolated
- High Efficiency
- Excellent Thermal Performance
- Low Cost
- Low Profile Package
- Dual Outputs



### Description

The VRXZ-01RDx0 series are isolated dc/dc converters that operate from a nominal 24 Vdc source. These converters provide up to 1.3 W of output power, using a SIP package for ease of layout and space savings. The efficiency is typically 82% at full load.

### Part Selection

Output Voltage	Input Voltage	Max. Output Current	Max. Output Power	Typical Efficiency	Model Number
22.5 V (dual)	24 V	28 mA	1.3 W	82%	VRXZ-01RD10
27 V (dual)	24 V	25 mA	1.3 W	82%	VRXZ-01RD20

**Notes:** 1. All part numbers above indicate RoHS 6. Change the second letter "R" to "7" for RoHS 5 part numbers.  
2. Add "G" suffix at the end of the model numbers listed above to indicate "Tray Packaging".

### Absolute Maximum Ratings

Parameter	Min	Typ	Max	Notes
Input Voltage (continuous)	-0.3 V	-	28 V	
Output Power	-	-	1.3 W	
Ambient Temperature	0 °C	-	70 °C	
Storage Temperature	-40 °C	-	125 °C	

### Input Specifications

Parameter	Min	Typ	Max	Notes
Input Voltage	24 V	-	28 V	
Input Current (no load)	-	-	15 mA	
Input Current (full load)	-	-	70 mA	

**Note:** All specifications are typical at nominal input, full load at 25 °C unless otherwise stated.

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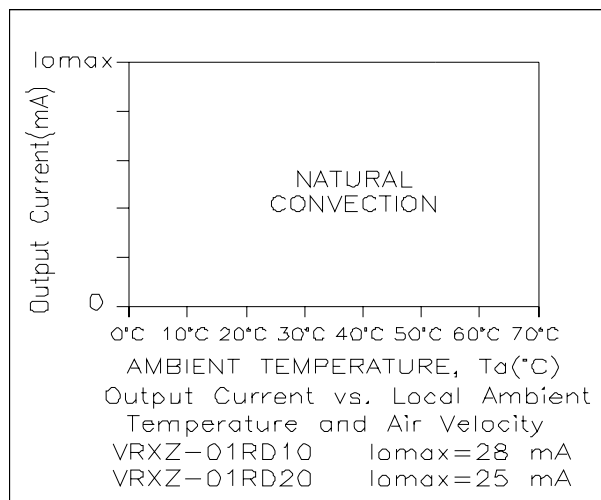
### Output Specifications

Parameter	Min	Typ	Max	Notes
Output Voltage Set Point Vo=22.5 V Vo=27 V	22.5 V 26 V	- -	24 V 27 V	Vin=24 V, Iout=full load, Ta=25 °C
Load Regulation Vo=22.5 V Vo=27 V	- -	0.7 V 0.7 V	1 V 1 V	Vin=24 V, for Vo=22.5 V, Iout=6 mA - 28 mA; for Vo=27 V, Iout=4 mA - 25 mA
Regulation Over Temperature (0 °C to 70 °C)	-	0.2 V	0.5 V	For both outputs
Output Current Vo=22.5 V Vo=27 V	0 mA 0 mA	- -	28 mA 25 mA	
Ripple and Noise (rms)	-	14 mV	25 mV	0 - 20 MHz Bandwidth with 0.1 uF ceramic capacitor at output
Ripple and Noise (pk-pk)	-	55 mV	120 mV	
Overshoot at Turn on	-	0%	3%	

### General Specifications

Parameter	Min	Typ	Max	Notes
Efficiency Vo=22.5 V Vo=27 V	80% 80%	82% 82%	- -	Vin=24 V, Io= Io-max, at full load and Ta=25 °C
Switching Frequency	-	190 kHz	-	
Isolation	-	-	2000 V	
MTBF	3,000,000 hours			Calculated Per Bell Core SR-332 (Io = Nominal; Ta = 25 °C)
Dimensions Inches (L x W x H) Millimeters (L x W x H)	0.9 x 0.338 x 0.4 22.86 x 8.59 x 10.16			
Weight	-	2.5 g	-	

### Thermal Derating Curve

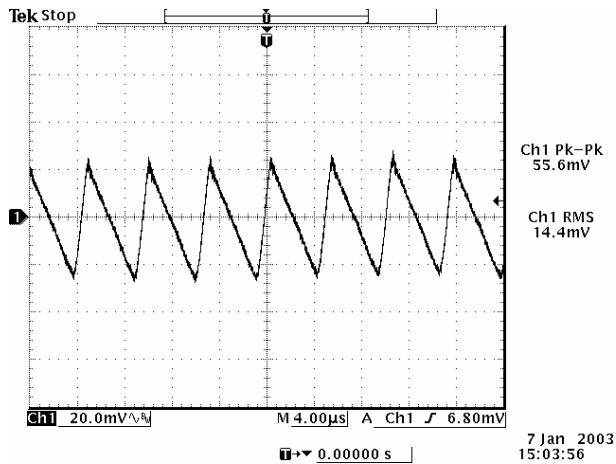


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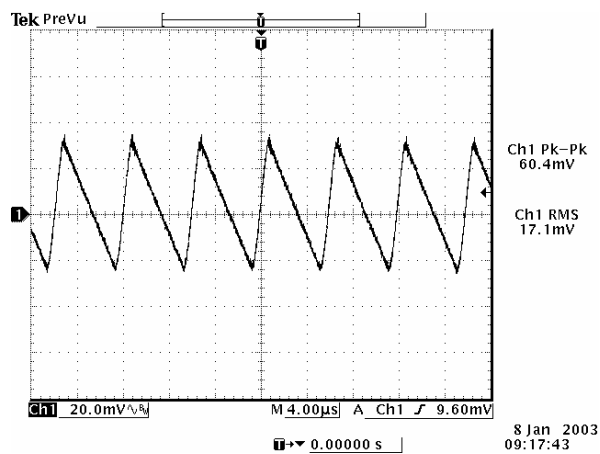
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### Ripple and Noise Waveforms



24 Vdc input, 22.5 Vdc output



24 Vdc input, 27 Vdc output

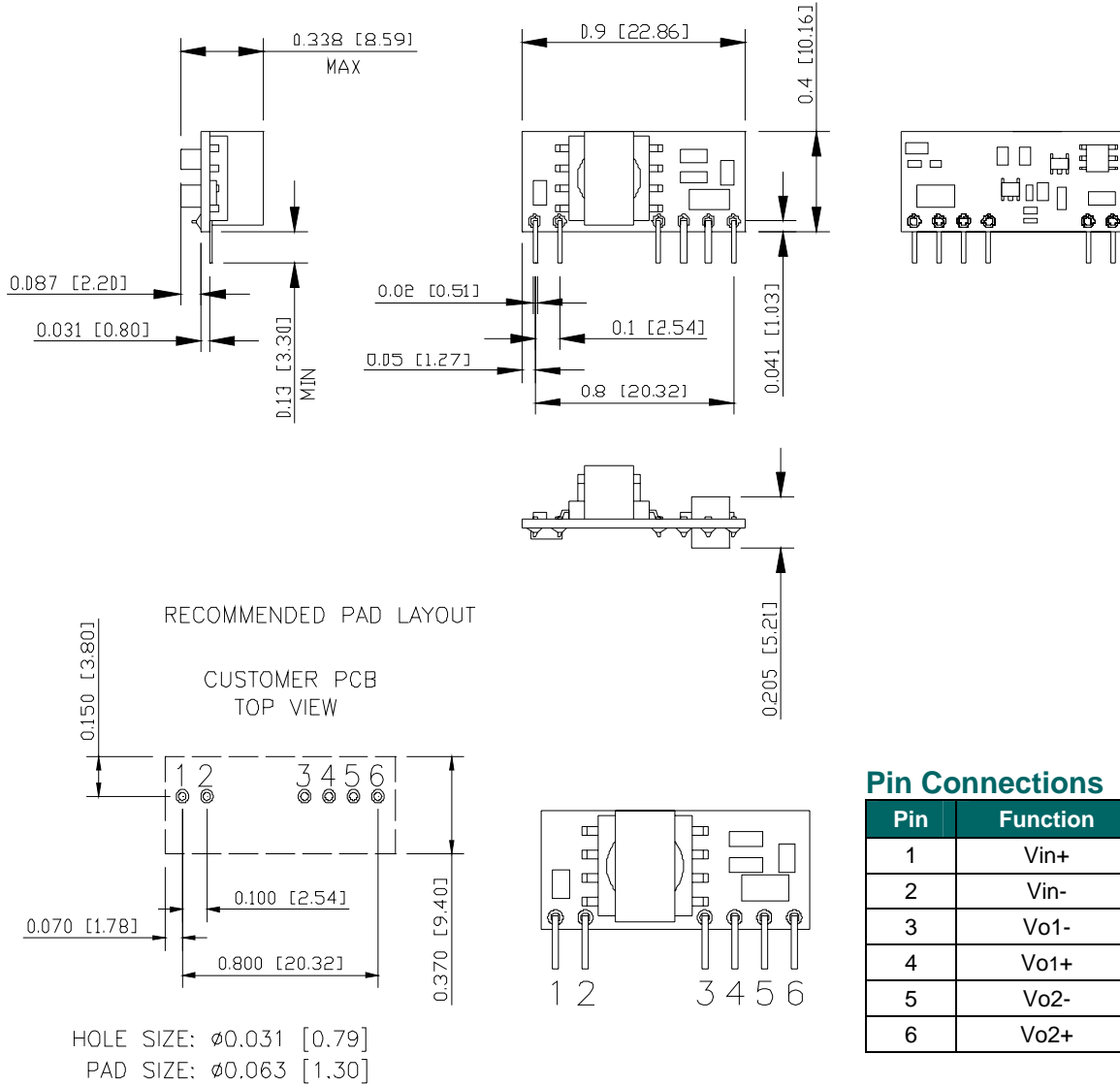
**Note:** Ripple and noise at full load, 0.1µF ceramic Cap is added at the output, and  $T_a=25$  deg C.

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## Mechanical Outline



## RoHS Compliance

Complies with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.



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