

Features:

- 1W DC-DC Unregulated Output
- Fixed Input Voltage
- Isolated 1.5kVDC
- Output Short Circuit Protection
- High Efficiency up to 81%
- Temperature Range -40°C to +105°C
- Low Standby Current, Low as 8mA
- Materials: UL94-V0
- IEC/EN/UL62368, EN61558, EN60335
- 3 Year Warranty



Description

VTX-312-001-#### are high efficiency switching regulators. The converters feature high efficiency, low loss, short circuit protection, positive or negative output voltage, and there is no need for a heat sink. These products are widely used in applications such as industrial control, instrumentation, instrumentation, pure digital circuits, low frequency analog circuits, relay-driven circuits and data switching circuits.

Selection Guide

Part Number	Input Voltage VDC (Range)	Output Voltage (VDC)	Output Current Max/Min (mA)	Full Load Efficiency (%) Vin Min/Max	Capacitive Load (uF) Max
VTX-312-001-1203	12 (10.8-13.2)	3.3	303/30	71/75	2400
VTX-312-001-1205		5	200/20	76/80	2400
VTX-312-001-1209		9	111/12	76/80	1000
VTX-312-001-1212		12	83/9	76/80	560
VTX-312-001-1215		15	67/7	77/81	560
VTX-312-001-1224		24	42/4	77/81	220
VTX-312-001-1505	15 (13.5-16.5)	5	200/20	76/80	2400
VTX-312-001-1509		9	111/12	76/80	1000
VTX-312-001-1512		12	83/9	76/80	560
VTX-312-001-1515		15	67/7	77/81	560
VTX-312-001-1524		24	42/12	77/81	220
VTX-312-001-2403	24 (21.6-26.4)	3.3	303/30	69/75	2400
VTX-312-001-2405		5	200/20	73/79	2400
VTX-312-001-2409		9	111/12	74/80	1000
VTX-312-001-2412		12	83/9	75/81	560
VTX-312-001-2415		15	67/7	75/81	560
VTX-312-001-2424		24	42/4	75/81	220

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Input Specification					
Item	Conditions	Min	Typical	Max	Unit
No-Load Input Current	12VDC	-	105/8	110	mA
	15VDC	-	84/8	88	
	24VDC	-	56/8	61	
Reflected Ripple Current		-	15	-	
Surge Voltage (1Sec. Max.)	12VDC	-0.7	-	18	VDC
	15VDC	-0.7	-	21	
	24VDC	-0.7	-	30	
Input Filter		Capacitance Filter			

Output Specification					
Item	Conditions	Min	Typical	Max	Unit
Voltage Accuracy		See Graphs Fig 1			
Line Regulation	3.3VDC Full Load	-	-	1.5	%
	Other Outputs at Full Load	-	-	1.2	
Load Regulation	3.3VDC	-	+/-0.2	+/-0.4	
	5VDC to15VDC	-	3	15	
	24VDC	-	2	10	
Ripple / Noise*	20MHz Bandwidth (P-P Value)	-	30	75	mVp-p
	20MHz Bandwidth (P-P Value) 24VDC		50	100	
Temp. Coefficient	100% Load	-	-	+/-0.02	%/°C
Short Circuit Protection	Nominal Input Voltage	Continuous, Self-recovery			
The “parallel cable” method is used for Ripple and Noise test.					

General Specification					
Item	Conditions	Min	Typical	Max	Unit
Operating Temperature		-40	-	+105	°C
Storage Temperature		-55	-	+125	
Soldering Pin Resistance Temperature				+300	
Storage Humidity		5	-	+95	%RH
Switching Frequency		-	260	-	KHz
MTBF		>3500,000Hrs @ 25°C (MIL-HDBK-217F)			
Dimensions		19.65 x 6.00 x 10.60 mm			
Cooling Method		Free Air Convection			
Weight		2.1g			

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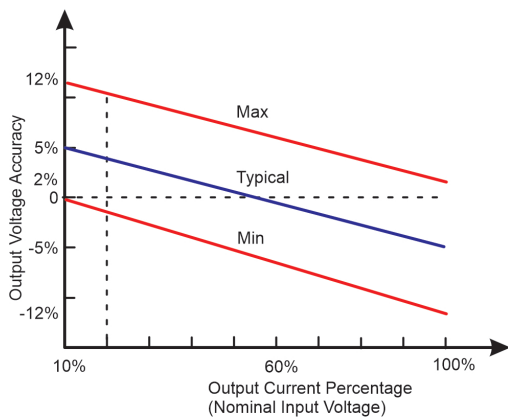
Vigortronix.com

EMC Specification

Emissions	CE /RE	CISPR32 / EN55032 CLASS B
Immunity	ESD	IEC/EN 61000-4-2 CONTACT +/-6KV

Performance Graphs

3.3VDC Output
Output Regulation Graph



5V / 9V / 12V / 15V / 24VDC Output
Output Regulation Graph

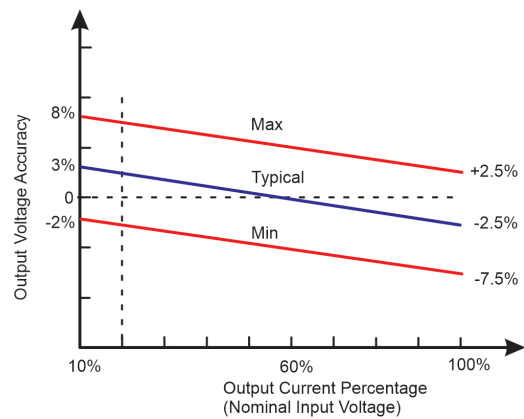


Fig 1

Temperature Derating Graph

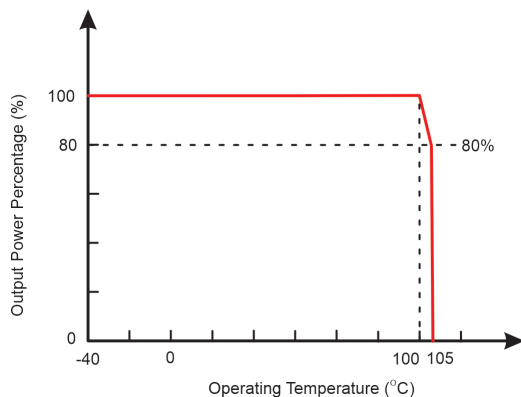


Fig 2

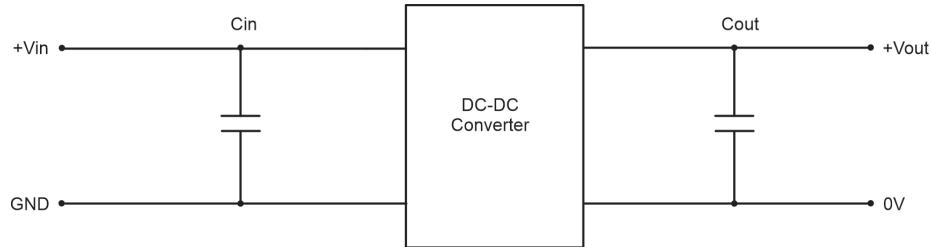
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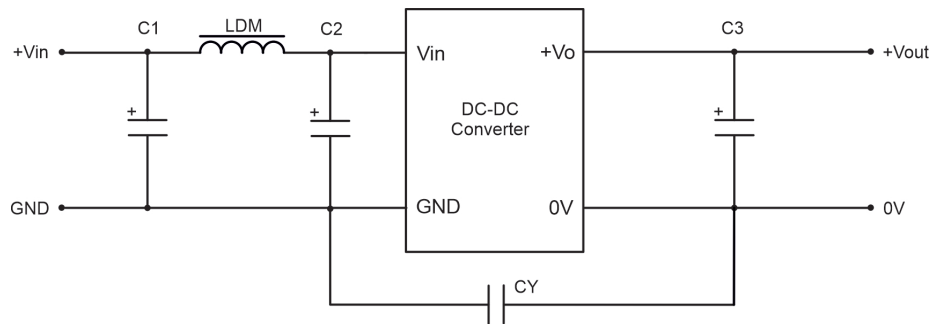
Application Schematic for EMC

Typical Application Schematic



Voltage In	Cin	Voltage Out	Cout
12VDC	2.2uF/25V	3.3VDC	10uF/16V
15VDC	2.2uF/25V	5VDC	10uF/16V
24VDC	1uF/50V	9VDC	2.2uF/16V
-		12VDC	2.2uF/25V
-		15VDC	1uF/25V
-		24VDC	1uF/50V

EMC (CLASS B) Application Schematic



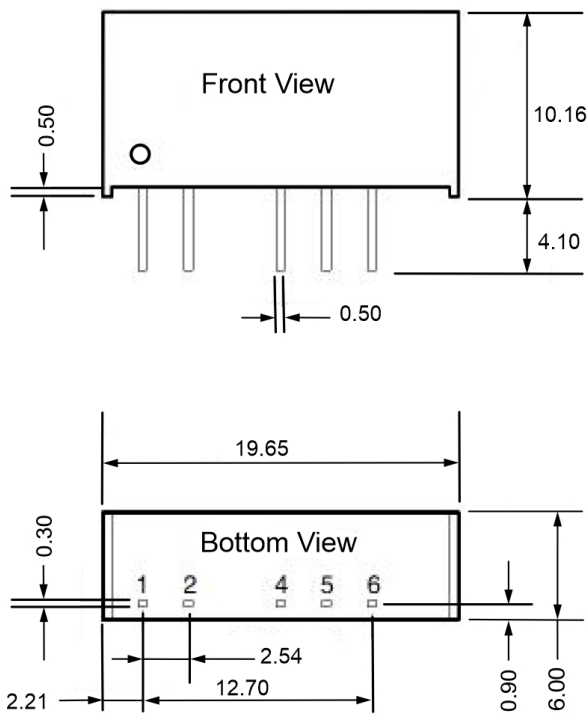
Component	Value	Voltage Out	C3
C1/C2	4.7uF/50V	3.3VDC	10uF/16V
CY	270pF/2kV	5VDC	10uF/16V
LDM	6.8uH	9VDC	2.2uF/16V
-	-	12VDC	2.2uF/25V
-	-	15VDC	1uF/25V
-	-	24VDC	1uF/50V

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Dimensions

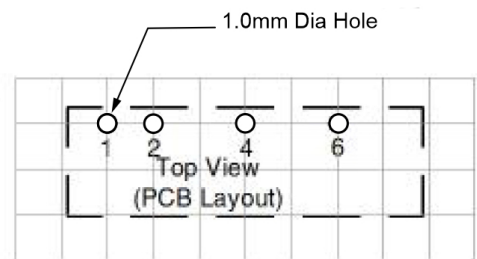


Note:

Unit: mm[inch]

Pin section tolerances: $\pm 0.10 [\pm 0.004]$

General tolerances: $\pm 0.25 [\pm 0.010]$



PIN Number	Single O/P	Dual O/P
1	Vin	Vin
2	GND	GND
3	-	-
4	0V	-Vo
5	No Pin	0V
6	+Vo	+Vo

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