VTX-312-001-xxx SIP
1W Isolated DC-DC Converters

Features:

- 1W DC-DC Unregulated Output
- Fixed Input Voltage
- Isolated 3kVDC
- Output Short Cicuit Protection
- High Efficiency up to 89%
- Temperature Range -40°C to +105°C
- Low Standby Current, Low as 8mA
- Materials: UL94-V0
- IEC/EN/UL62368, EN61558
- 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 (%) Typical	Capacitive Load (uF) Max
VTX-312-001-0303	3 (2.97-3.63)	3.3	303/30	82	4000
VTX-312-001-0305		5	200/20	83	4000
VTX-312-001-0309		9	111/11	84	2000
VTX-312-001-0312		12	84/8	85	1000
VTX-312-001-0315		15	67/6	85	680
VTX-312-001-0503	5 (4.5-5.5)	3.3	303/30	83	4000
VTX-312-001-0505		5	200/20	86	4000
VTX-312-001-0509		9	111/11	86	2000
VTX-312-001-0512		12	84/8	88	1000
VTX-312-001-0515		15	67/6	88	680
VTX-312-001-0524		24	42/4	89	560
VTX-312-001-1203	12 (10.8-13.2)	3.3	303/30	84	4000
VTX-312-001-1205		5	200/20	86	4000
VTX-312-001-1209		9	111/11	87	2000
VTX-312-001-1212		12	84/8	87	1000
VTX-312-001-1215		15	67/6	88	680
VTX-312-001-1224		24	42/4	89	560

Please contact Vigortronix for any enquiries. Products can be altered to suit custom requirements.

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Tel. +44 (0)1993 777570 Web. www.vigortronix.com, E-mail: sales@vigortronix.com
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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-312-001-1505	15 (13.5-16.5)	5	200/20	86	4000
VTX-312-001-1509		9	111/11	87	2000
VTX-312-001-1512		12	84/8	87	1000
VTX-312-001-1515		15	67/6	86	680
VTX-312-001-1524		24	42/4	84	560
VTX-312-001-2403	24 (21.6-26.4)	3.3	303/30	84	4000
VTX-312-001-2405		5	200/20	87	4000
VTX-312-001-2409		9	111/11	88	2000
VTX-312-001-2412		12	84/8	88	1000
VTX-312-001-2415		15	67/6	88	680
VTX-312-0012424		24	42/4	89	560

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Input Specification					
Item	Conditions	Min	Typical	Max	Unit
Input Current (Full Load/No Load)	3.3VDC	-	370/12	-	mA
	5VDC	-	225/18	-	
	12VDC	-	99/7	-	
	15VDC	-	78/5	-	
	24VDC	-	51/3	-	
Reflected Ripple Current		-	15	-	
Surge Voltage (1Sec. Max.)	3.3VDC	-0.7	-	5	VDC
	5VDC	-0.7		9	
	12VDC	-0.7		18	
	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 10% -100% Load	3.3VDC	-	10	-	
	5VDC	-	8	-	
	9VDC	-	8	-	
	12VDC	-	7	-	
	15VDC	-	6	-	
	24VDC	-	6	-	
Ripple / Noise*	20MHz Bandwidth (P-P Value)	-	45	100	mVp-p
Temp. Coefficient	100% Load	-	-	+/-0.02	%/^{O}C
Short Circuit Protection	Nominal Input Voltage	Continuous, Self-recovery			
The "parallel cable" method is used for Ripple and Noise test.					

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General Specification					
Item	Conditions	Min	Typical	Max	Unit
Isolation Voltage	Input to Output	3000	-	-	VDC
Insulation Resistance	Input to Output 500VDC	1000	-	-	M.Ω
Isolation Capacitance	Input to Output 100kHz/0.1V	-	20	-	pF
Operating Temperature		-40	-	+105	°C
Storage Temperature		-55	-	+125	
Soldering Pin Resistance Temperature				+300	
Storage Humidity	Non Condensing	-	-	+95	%RH
Switching Frequency		-	220	-	KHz
MTBF		>3,500kHrs @ 25°C (MIL-HDBK-217F)			
Dimensions		19.60 x 6.05 x 10.10 mm			
Cooling Method		Free Air Convection			
Weight		2.1g			

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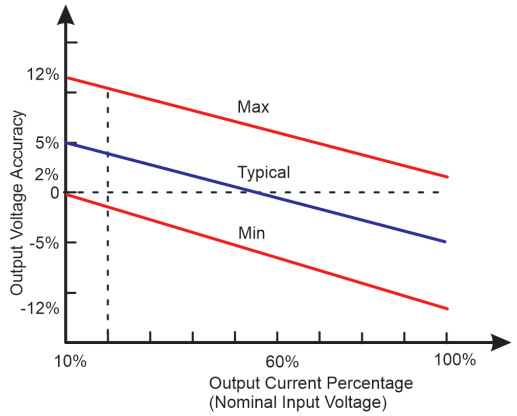
EMC Specification		
Emissions	CE /RE	CISPR32 / EN55032 CLASS B
Immunity	ESD	IEC/EN 61000-4-2 CONTACT +/-4KV, Air +/-8KV

Performance Graphs

3.3VDC Output
Output Regulation Graph



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

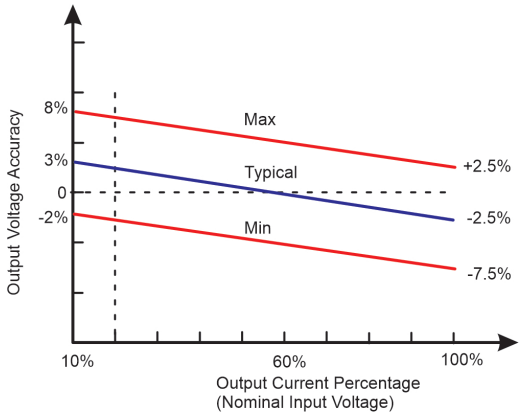


Fig 1

Temperature Derating Graph

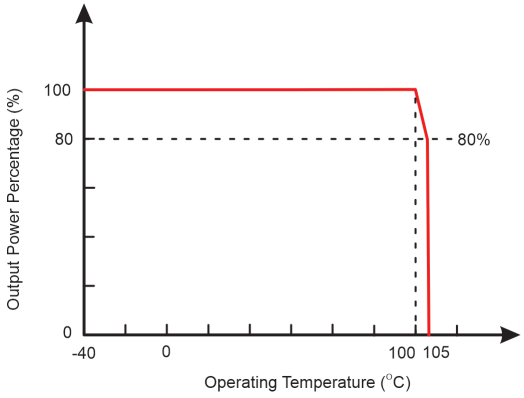
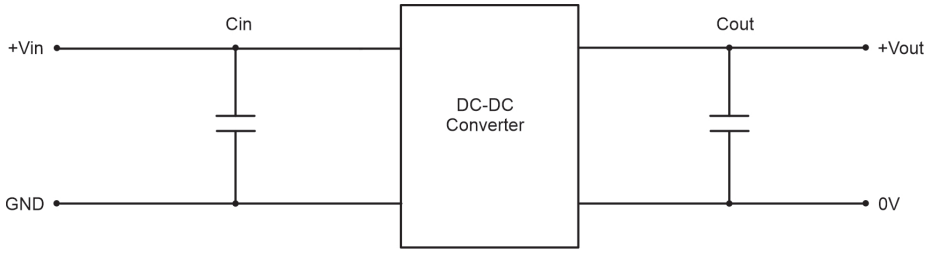


Fig 2

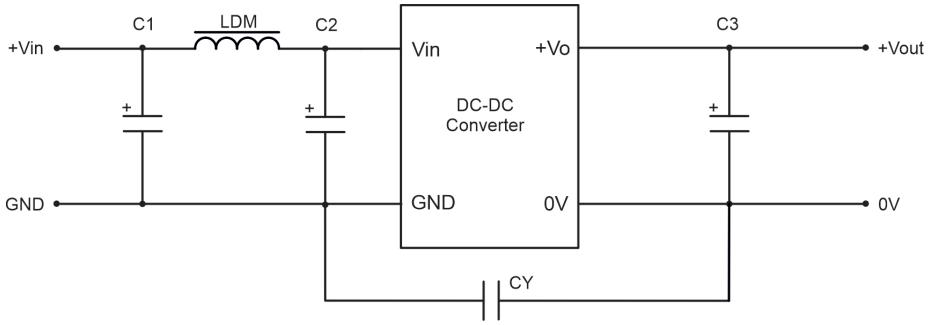
Application Schematic for EMC

Typical Application Schematic



Voltage In	Cin	Voltage Out	Cout
3.3/5VDC	4.7uF/16V	3.3/5VDC	10uF/16V
12VDC	2.2uF/25V	9VDC	4.7uF/16V
15VDC	2.2uF/25V	12VDC	2.2uF/25V
24VDC	1uF/50V	15VDC	1uF/25V
-	-	24VDC	0.47uF/25V
-	-	-	-

EMC (CLASS B) Application Schematic



Component	Value		Voltage Out	C3
C1/C2	10uF/50V		3.3/5VDC	10uF/16V
CY	1000pF/3kV		9VDC	4.7uF/16V
LDM	6.8uH		12VDC	2.2uF/25V
-	-		15VDC	1uF/25V
-	-		24VDC	0.47uF/25V
-	-		-	-

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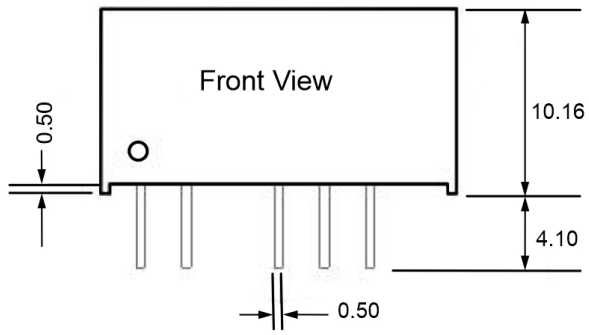
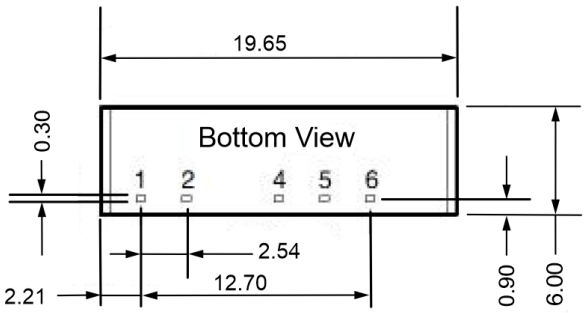
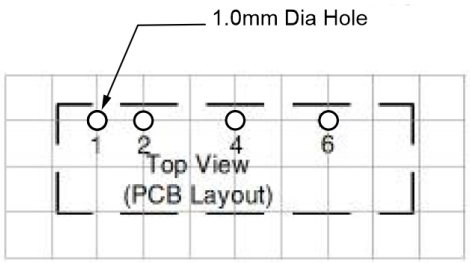
Dimensions





Note:
Unit: mm[inch]
Pin section tolerances: ±0.10[±0.004]
General tolerances: ±0.25[±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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