

Features:



- 15W Small Compact SIP style AC-DC converter
- Wide AC & DC Input 85V to 305VAC, 70-430VDC
- Temperature Range -40°C to +85°C
- EMC Compliant with external components
- Output Range: 3.3V - 24VDC
- Low Standby Power 0.1W
- Fully Isolated Pri - Sec >3000Vrms
- Safety: Class II
- Materials: UL94-V0
- IEC/EN/UL62368, IEC/EN60335
- 3 Year Warranty



Description

VTX-215-015-0## is a compact SIP style AC-DC power converter. It They feature wide input range accepting either AC or DC voltage, high efficiency, low power consumption and CLASS II reinforced insulation. All models are particularly suitable for industrial control, electric power, instrumentation and smart home applications which don't have high requirement for dimension. A variety of EMC external circuits meet the needs of multiple industries we recommend using the application circuit show in this Datasheet or contact our Technical team for further support.

Selection Guide

Part Number	Power Rating Watts	Output Voltage (VDC)	Output Cur- rent (mA)	Capacitive Load (uF)	Ambient Temp. (°C)	Efficiency Typical	Input Range
VTX-215-015-003	9.9	3.3	3000	20000	85°C	>75%	85 - 305VAC (70 - 430VDC)
VTX-215-015-005	14	5	2800	15000			
VTX-215-015-009	15	9	1670	5000			
VTX-215-015-012	15	12	1250	4000			
VTX-215-015-015	15	15	1000	2000			
VTX-215-015-024	15	24	625	1000			
Note: Other output voltages are available upon request.							

Please contact Vigortronix for any enquiries. Products can be altered to suit custom requirements.
The information contained in this document is subject to change without notice.

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Input Specification					
Item	Conditions	Min	Typical	Max	Unit
Input Voltage	AC Input	85	-	305	VAC
	DC Input	70	-	430	VDC
Input Frequency		47	-	63	Hz
Input Current	115VAC	-	-	0.4	A
	230VAC	-	-	0.25	
Inrush Curent	115VAC	-	18	-	
	230VAC	-	35	-	
External Input Fuse		1Amp Slow Blow Fuse			

Output Specification					
Item	Conditions	Min	Typical	Max	Unit
Output Voltage	10% - 100% Load	-	+/-3	-	%
Line Regulation	Full Load	-	+/-1	-	
Load Regulation	10% - 100% Load	-	+/-1.5	-	
Ripple / Noise	20MHz Bandwidth (Peak to Peak Value)	-	80	150	mV
Stand by Power	230VAC	-	0.10	0.15	W
Temp. Coefficient		-	+/-0.2	-	%/°C
Short Circuit Protection		Hiccup, Continuous, Self-recovery			
Over Current Protection		>110 Load, Self-recovery			
Minimum Load		0	-	-	%
Hold-up Time	230VAC Input	150	180	-	mS

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General Specification					
Item	Conditions	Min	Typical	Max	Unit
Dielectric Strength	Input to Output (1Min, 5mA)	3000	-	-	VAC
Insulation Resistance	Input to Output (500VDC)	100			M.Ohm
Operating Temperture		-40	-	+85	°C
Storage Temperture		-40	-	+105	
Storage Humidity		-	-	+95	%RH
Switching Frequency		-	-	-	KHz
Safety Class		CLASS II			
MTBF		>1,000KHrs @ 25°C (MIL-HDBK-217F)			
Safety Approvals		IEC/EN/UL62368 Compliant: IEC/EN61558, IEC/EN60335			
Cooling Method		Free air convection			
Dimensions		44.5 x 24.00 x 15.00mm			
Weight		11g			

EMC Specification		
Emissions	CE /RE	CISPR32 / EN55032 CLASS A/B EN55014-1
Immunity	ESD	IEC/EN 61000-4-2 CONTACT +/-6KV EN55014-2
	RS	IEC/EN 61000-4-3 10V/m EN55014-2
	EFT	IEC/EN 61000-4-4
	SURGE	IEC/EN 61000-4-5, EN55014-2
	CS	IEC/EN 61000-4-6 10V/r.m.s. EN55014-2
	Voltage Variation	IEC/EN 61000-4-11, EN55014-2

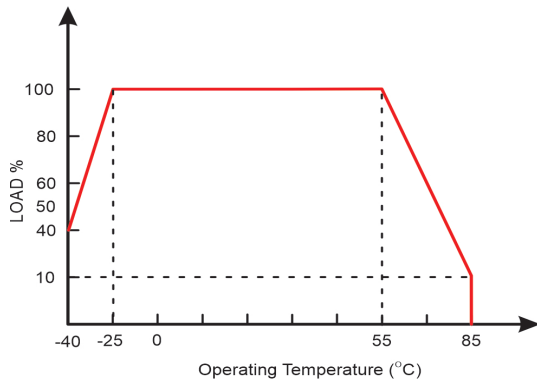
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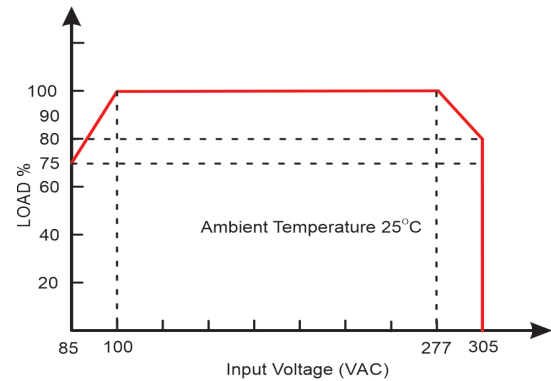
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Derating Graphs

Temperature Derating Graph

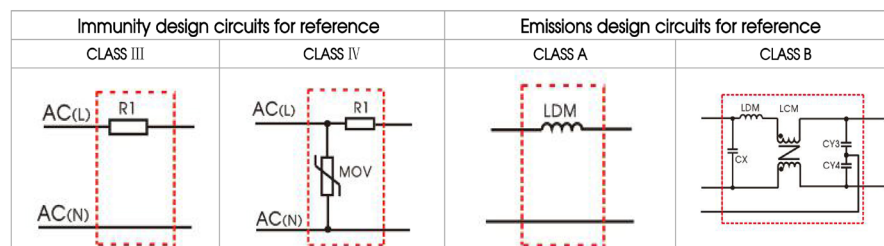
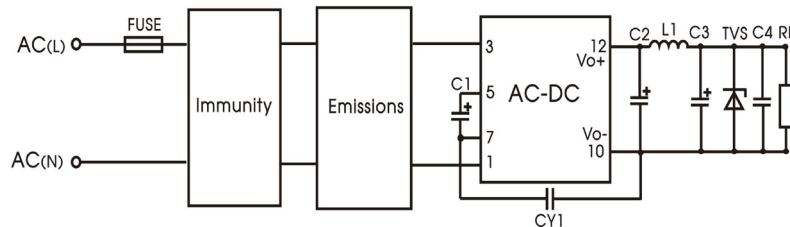


Input Voltage Derating Graph



Application Schematic for EMC

Typical Application



Part Number	C1	C2 (Solid State)	L1	C3	C4	CY1	TVS	Fuse	MOV
VTX-215-015-003	33uF/ 450V	470uF/16V	2.2uH Max 15m Ω	220uF/ 16V	0.1uF/ 50V	2.2nF/ 400V	SMBJ7.0A	1Amp/ 300V Slow Blow	S14K350
VTX-215-015-005		470uF/16V		220uF/ 16V			SMBJ7.0A		
VTX-215-015-009		470uF/16V		220uF/ 16V			SMBJ12A		
VTX-215-015-012		470uF/16V		220uF/ 16V			SMBJ20A		
VTX-215-015-015		680uF/25V		220uF/ 35V			SMBJ20A		
VTX-215-015-024		470uF/35V		220uF/ 35V			SMBJ30A		

Note: For additional filtering requirements, contact technical support

1. C1: input capacitors, C2: output storage capacitors, they must be connected externally.
2. We recommend using an electrolytic capacitor with high frequency and low ESR rating for C3 (refer to manufacture's datasheet). Combined with C2, L1, they form a pi-type filter circuit. Choose a capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C4 is a ceramic capacitor, used for filtering high frequency noise. A suppressor diode (TVS) is recommended to protect the application in case of converter failure and specification should be 1.2 times of the output voltage.
3. The distance of the original secondary side isolation belt is greater than 6.4mm to meet the safety requirements. In the layout of the periphery, it is also necessary to pay attention to the creepage distance greater than 6.4mm, and the electrical clearance greater than 4.0mm can meet the certification together with the periphery.

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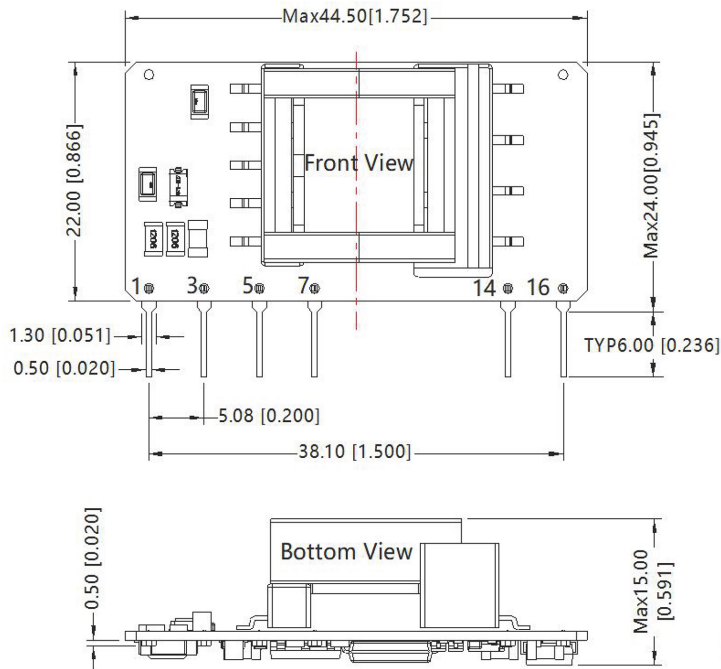
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Dimensions



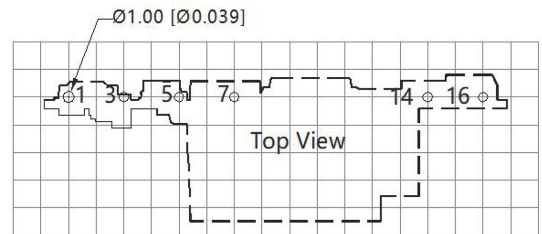
Note:

Unit: mm[inch]

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

General tolerances: $\pm 0.50 [\pm 0.020]$

The layout of the device is for reference only, please refer to the actual product



Note: Grid 2.54*2.54mm

Pin-Out	
Pin	Function
1	AC(N)
3	AC(L)
5	+V(cap)
7	-V(cap)
14	-Vo
16	+Vo

1. It is necessary to add C1 between pin5 and pin7.
2. It is necessary to add Pi circuits to the output, such as the recommended circuit 1.
3. The distance of the primary and secondary isolation area >6.4mm to meet the safety requirements. The whole layout including additional circuits meet safety requirements with conditions of the creepage distance >6.4mm and the electrical clearance >4mm.