



Features:

- 5W Small Compact SIP style AC-DC converter
- Wide AC & DC Input 85V to 305VAC, 100-430VDC
- 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 >4000Vrms
- Safety: Class II
- Materials: UL94-V0
- IEC/EN61558, IEC/EN60335
- 1 Year Warranty



Description

VTX-215-005-2## 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 Current (mA)	Capacitive Load (uF)	Ambient Temp. (°C)	Efficiency Typical	Input Range
VTX-215-005-203	3.3	3.3	800	2200	85°C	>73%	85 - 305VAC (100 - 430VDC)
VTX-215-005-205	5	5	1000	1500			
VTX-215-005-209	5	9	560	680			
VTX-215-005-212	5	12	420	470			
VTX-215-005-215	5	15	340	330			
VTX-215-005-218	5	18	277	280			
VTX-215-005-224	5	24	210	100			

Note: Other output voltages are available upon request.

Please contact Vigortronix for any enquiries. Products can be altered to suit custom requirements.
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Input Specification					
Item	Conditions	Min	Typical	Max	Unit
Input Voltage	AC Input	85	-	305	VAC
	DC Input	100	-	430	VDC
Input Frequency		47	-	63	Hz
Input Current	110VAC	-	0.1	-	A
	230VAC	-	0.07	-	
Inrush Curent	110VAC	-	20	-	
	230VAC	-	40	-	
External Input Fuse		1Amp Slow Blow Fuse			

Output Specification					
Item	Conditions	Min	Typical	Max	Unit
Output Voltage	10% - 100% Load	-	+/-5	-	%
Line Regulation	Full Load	-	+/-1.5	+/-2.5	
Load Regulation	10% - 100% Load	-	+/-3	-	
Ripple / Noise	20MHz Bandwidth, 10% - 100% Load	-	80	180	mV
Stand by Power	230VAC	-	0.1	-	W
Temp. Coefficient		-	+/-0.15	-	%/°C
Short Circuit Protection		Continuous, Self-recovery			
Over Current Protection		>110% Load, Self-recovery			
Minimum Load		10	-	-	%
Hold-up Time	230VAC Input	-	40	-	ms

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General Specification					
Item	Conditions	Min	Typical	Max	Unit
Dielectric Strength	Input to Output (1Min, 5mA)	4000	-	-	VAC
Insulation Resistance	Input to Output (500VDC)	1000			MOhm
Operating Temperture		-40	-	+85	°C
Storage Temperture		-40	-	+105	
Storage Humidity		-	-	+95	%RH
Safety Class		CLASS II			
MTBF		>1,000KHrs @ 25°C (MIL-HDBK-217F)			
Soldering Profile	Wave-soldering	260 ± 5°C; time: 5 - 10s			
	Manual-welding	360 ± 8°C; time: 3 - 5s			
Safety Approvals		IEC/EN/UL62368 Compliant: IEC/EN61558, IEC/EN60335			
Cooling Method		Free air convection			
Package Dimensions		26.40 x 17.60 x 11.00mm			
Weight		5.9g (Typ.)			

EMC Specification		
Emissions	CE /RE	CISPR32 / EN55032 CLASS A/B
Immunity	ESD	IEC/EN 61000-4-3 10V/m
	RS	IEC/EN 61000-4-4
	EFT	IEC/EN 61000-4-5
	SURGE	IEC/EN 61000-4-6 10V/r.m.s
	CS	IEC/EN 61000-4-2

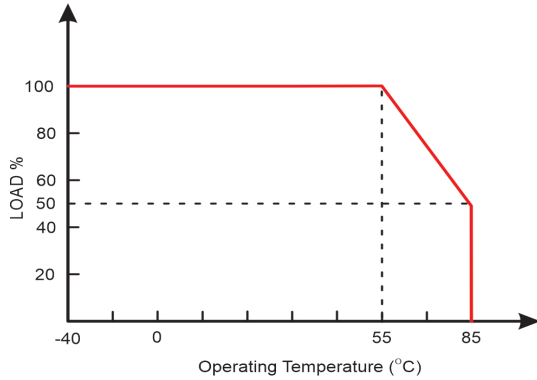
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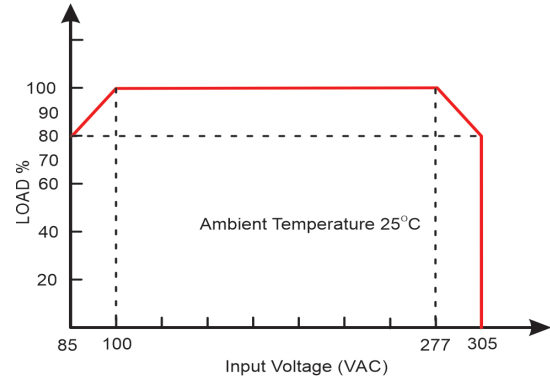
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Derating Graphs

Temperature Derating Graph

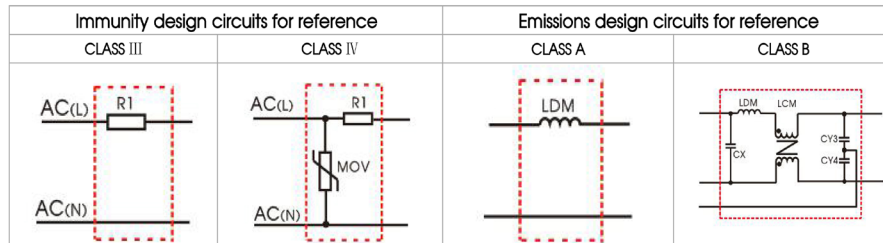
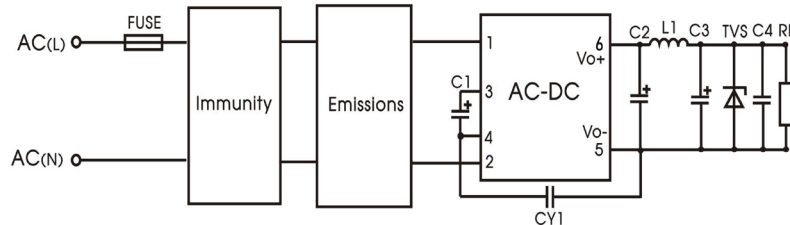


Input Voltage Derating Graph



Application Schematic for EMC

Typical Application



Part Number	R1	LDM	C1	C2 (Solid State)	L1	C3	C4	CY1	TVS	Fuse	MOV
VTX-215-005-203	12Ω 3W	2.2mH Min: 0.24A	10uF/ 450V	560uF/16V	2.2uH 3A Max 40mΩ	100uF/ 16V	0.1uF/ 50V	1.0nF/ 400VAC	TVS Diode is to protect the downstream circuit incase of abnormalities. Recommend 1.2 times the output volt- age.	1Amp/ 300V Slow Blow	14D561
VTX-215-005-205											
VTX-215-005-209											
VTX-215-005-212											
VTX-215-005-215											
VTX-215-003-224				10uF/450V	3.3uH 2A Max 40mΩ	47uF/ 35V					

Note: For additional filtering requirements, contact technical support

1. C1 is used as filter capacitor with AC input (must be connected externally) and as EMC filter capacitor with DC input (must be connected), and it is recommended to use the capacitor with ripple current >200mA@100KHz.
2. We recommend using an electrolytic capacitor with high frequency and low ESR (ESR of C3 at low temperature of -40°C ≤ 1.1Ω) rating for C3 (refer to manufacture's datasheet), electrolytic capacitor can be used for C2 when applied in normal and high temperature environments. 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.
3. 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.

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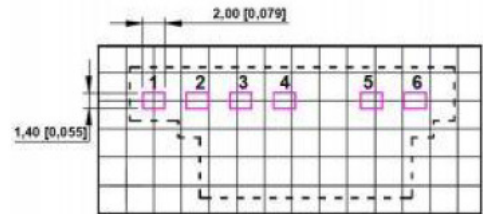
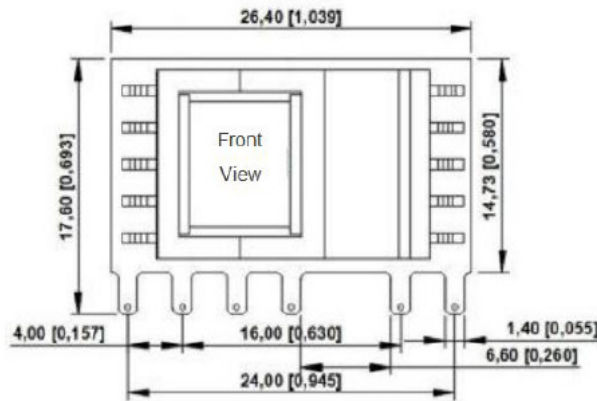
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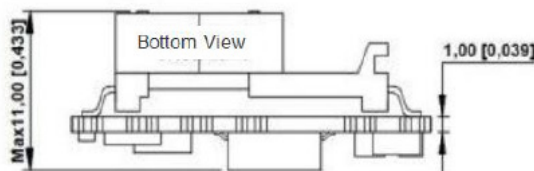
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Dimensions



Grid size: 2.54 x 2.54mm



PIN Number	Function
1	AC (L)
2	AC (N)
3	+V(CAP)
4	-V(CAP)
5	-V0
6	+Vo

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