



## Features:

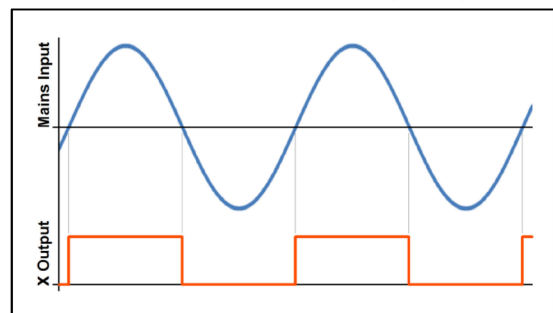
- Zero Crossing Feature - NEW
- 1W Low Profile <15.0mm Height
- MTBF: 1,000,000 Hours
- Wide Input Range: 90 - 305VAC
- Low Standby Power <0.15W
- High Temperature 85°C Full Load
- EMC Compliant - No External Components
- TUV, UL Approved

Part Number	Power Rating Watts	Output Voltage (VDC)	Output Current (mA)	Ambient Temp. (°C)	Efficiency Typical	Voltage Range
VTX-214-001-303X	1	3.3	300	85	>72%	90 - 305VAC
VTX-214-001-305X	1	5	200			
VTX-214-001-306X	1	6	166			
VTX-214-001-307X	1	7.5	133			
VTX-214-001-308X	1	8	125			
VTX-214-001-309X	1	9	111			
VTX-214-001-310X	1	10	100			
VTX-214-001-312X	1	12	83			
VTX-214-001-315X	1	15	66			
VTX-214-001-318X	1	18	55			
VTX-214-001-324X	1	24	42			
VTX-214-001-348X	1	48	21			

Note: Other output voltages are available upon request.

## Zero Cross Detection Output

In many applications it is advantageous to synchronize various events to the mains frequency and phase. For example, the efficiency of power Thyristor circuits is increased and component service life is extended, e.g. for relays, if switching occurs at zero-crossing. In addition, sensing applications like those frequently found in the 'Smart Home' market, need to eliminate 50/60 Hz noise, which can be easily accomplished by synchronizing built-in A/D converters with the mains frequency.



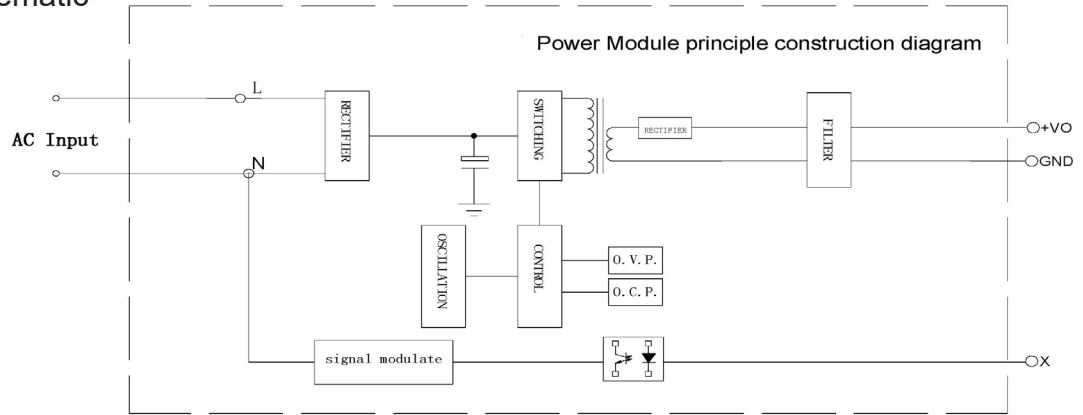
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The information contained in this document is subject to change without notice.

Model: 1 Watt		Specification
<b>INPUT</b>  <b>Pin 1: L</b> <b>Pin 2: N</b>	Voltage Range	90 ~ 305VAC / 47 ~ 63Hz
	Current	200mA Max (100VAC) / 100mA Max (240VAC)
	Inrush Current	5A Max (100VAC) / 10A Max (240VAC)
	No Load power	0.15W Max
	Leakage Current	0.2 mA Max
<b>OUTPUT</b>  <b>Pin 3: 0V</b> <b>Pin 4: DC+</b> <b>Pin 5: Zero Crossing</b>	Voltage Accuracy	3% (3.3VDC 5%)
	Ripple	3% Vout (Vp~p) (3.3VDC 5%)
	Noise	3% Vout (Vp~p) (3.3VDC 5%)
	Efficiency @ 230VAC	>72%
	Minimum Load	0
<b>Protection</b>	Over Power	Hiccup mode
	Over Voltage	Hiccup mode
	Short Circuit Protection	Hiccup mode
<b>Dielectric Isolation</b>	Input to Output	3600Vrms
<b>Environment</b>	Operating Temperature	-25°C ~ +85°C (See Derating Curve)
	Storage Temperature	-40°C ~ +105°C
	<b>MTBF</b>	>1,000,000Hrs @ 25°C (MIL-HDBK-217F)
	Weight	24g
<b>Safety</b>	Agency Standards	Compliance with IEC60950-1, EN60950-1, IEC61558-1 EN61558-1, EN61558-2-6, EN61558-2-17
<b>EMC</b>	EMI	Compliance with EN55022 Class B
	Surge	IEC/EN61000-4-5,L-N: +/- 3KV Criteria B
	EMS	Compliance with EN55024, EN55014-1, EN55014-2, EN61000-3-2 Class A, EN61000-3-3 (Need to add external EMC Component)

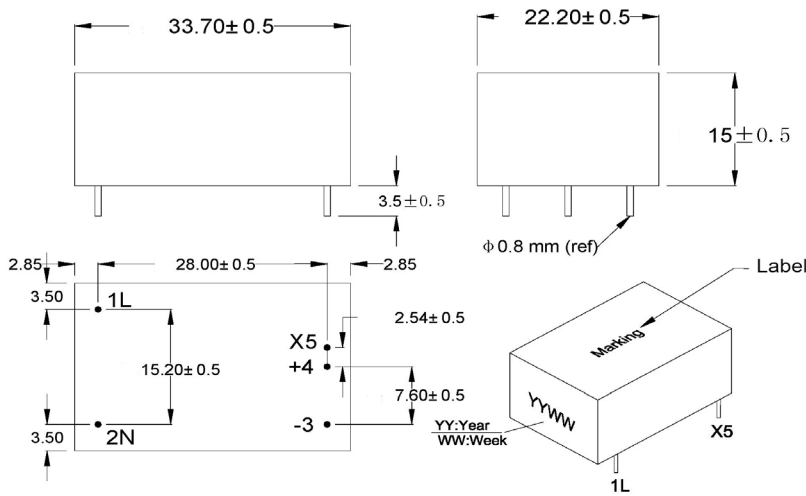
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# 1 Watt AC-DC Converters Zero Crossing Series

## Converter Schematic



## Dimensions:



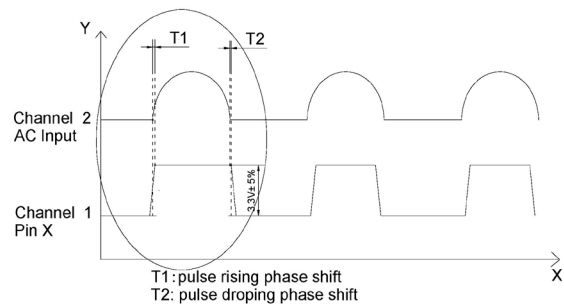
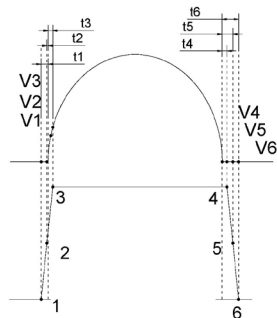
NO.	Pin connect	Function
1	AC_L	AC Input L
2	AC_N	AC Input N
3	DC-	Output Negative
4	DC+	Output Positive
5	X	Zero crossing detection Pin Terminal

Unit weight: 24g

## Phase Shift

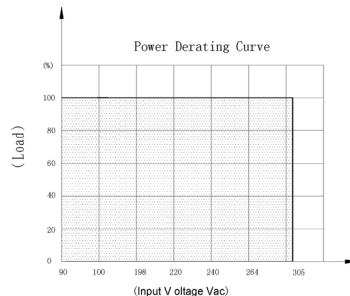
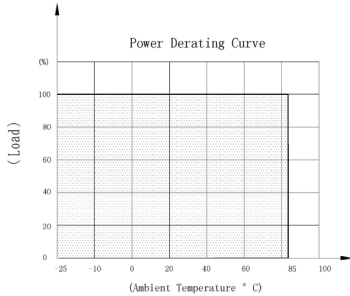
AC Input	RISE SHFT (typ.)	DROP SHFT (typ.)
90Vac	32us	244us
110Vac	60us	226us
230Vac	176us	128us
250Vac	184us	118us
277Vac	196us	114us
300Vac	216us	104us

NO.	Vac Value (typ.)	Phase Shift (typ.)
1	V1:0V	t1:-54us
2	V2:0V	t2:-18us
3	V3:16.6V	t3:160us
4	V4:0V	t4:126us
5	V5:0V	t5:131us
6	V6:0V	t6:233us



**Phase shift:** When input AC signal crossing X axis, the output zero crossing detection signal pulse reversal, the delta-T between the two signal. Where: a. Pulse rising edge shift @ VAc=0 : AC Signal from 0 voltage to max value. Here is T1. b. Pulse dropping edge shift @ VAc=0 Single from max value to 0 Voltage Here is T2

## Derating Graph:



Optional Universal PCB mounting kit.

Part Number:

VTX-214-PCB2



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