



Features:

- 10W Compact Size 55.0 x 45.0 x 22.0mm
- Wide AC & DC Input 85V to 305VAC (120 to 430VDC)
- Temperature Range -40°C to +85°C
- Dual Output
- I/O isolation test voltage 2500VAC 5mA 1min
- Internal Chip-on-Board (COB) Design
- High Flame-Retardant Housing
- Compliant with RoHS Directive
- Cooling Method: Natural Convection Cooling
- Excellent EMC shielding, output over-current protection, short-circuit protection.



Description

The Vigortronix 10W 4 Series is a compact 10W AC-DC dual converter module designed for reliable embedded power supply applications. It supports a wide 85–305VAC / 120–430VDC input range and provides a regulated ± 24 VDC output with high efficiency, 2500VAC isolation, natural convection cooling, and built-in protections against short circuit, over-current, over-temperature, surge, and electromagnetic interference.

Selection Guide

| Part Number | Power Rating Watts | Output 1 Voltage Current | Output 2 Voltage Current | Efficiency Typical |
|-------------------------|--------------------|--------------------------|--------------------------|--------------------|
| VTX-214-010-405 | 10 | +5V/1000mA | -5V/1000mA | >79% |
| VTX-214-010-409 | 10 | +9/555mA | -9/555mA | |
| VTX-214-010-412 | 10 | +12V/416mA | -12V/416mA | |
| VTX-214-010-415 | 10 | +15V/333mA | -15V/333mA | |
| VTX-214-010-424 | 10 | +24V/208mA | -24V/208mA | |
| VTX-214-010-4505 | 10 | 5V | 5V/ customised | |
| VTX-214-010-4512 | 10 | 5V | 12V/ customised | |
| VTX-214-010-4524 | 10 | 5V | 24V/ customised | |

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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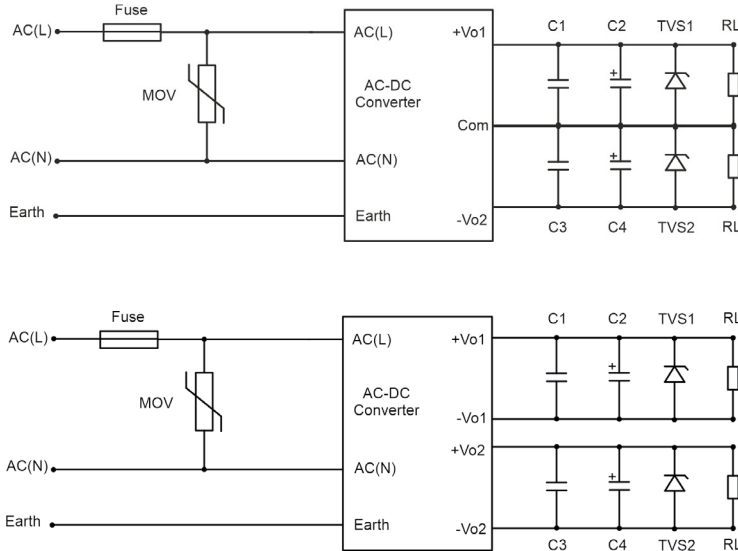
| Electrical Specifications | | | | | |
|------------------------------|-------------|---|-----------|--|------------|
| Item | Symbol | Condition $V_i, -40^{\circ}\text{C} \geq T_c \geq 85^{\circ}\text{C}$ (unless otherwise specified) | Min | Max | Unit |
| Input Voltage AC | V | - | 85 | 305 | VAC |
| Input Voltage DC | V | - | 120 | 430 | VDC |
| Output Voltage | V_o | Full Load | $V_o-2\%$ | $V_o+2\%$ | V |
| Output Current | $I_{o\max}$ | - | - | $\frac{P(\text{power})}{U(\text{Output Voltage})}$ | A |
| Output Ripple Voltage | V_{p-p} | Full Load, V_i , BW=20MHz, Normal Temp. | 80 | 250 | mV |
| Output Noise Voltage | V_{p-p} | Full Load, V_i , BW=20MHz, Normal Temp. | 100 | 300 | mV |
| Voltage Regulation | S_v | $V_{i\min}$ V_i $V_{i\max}$, Full Load | - | >0.5 | % |
| Load Regulation | S_i | V_i , $i_o=(10\% \sim 100\%) I_{o\max}$ | - | >0.5 | % |
| Efficiency | η | V_i , Full Load, Normal Temperature | 79 | - | % |
| Insulation Resistance | R_I | Input Output, Test Voltage: 500VDC | 100 | - | M Ω |

| General Specifications | | |
|--|---|-------------|
| Electromagnetic Compatibility (EMC) | Magnetic Field Susceptibility Test | GB6833.2-87 |
| | Electrostatic Discharge (ESD) Susceptibility Test | GB6833.3-87 |
| | Radiated Susceptibility Test | GB6833.5-87 |
| | Conducted Susceptibility Test | GB6833.6-87 |
| Temperature Drift | <0.03%/°C | |
| Storage Temperature | -40°C~105°C | |
| Input Frequency | 47Hz~63Hz | |
| Humidity | 20%~95%RH | |
| Leakage Current | 5mA(max) | |
| MTBF | >500000H | |
| Isolation | 2500 VAC | |
| Size | 55.00 x 45.00 x 22.00 mm | |

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Application Schematic for EMC

Typical Application EMC

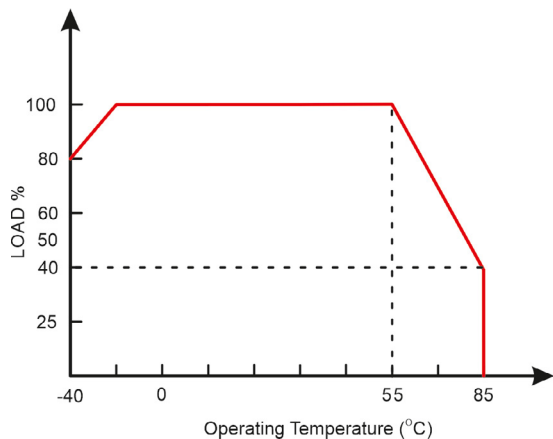


| Part Number | C1/C3 (uF) | C2 (uF) | C4 (uF) | TVS1 | TVS2 | Fuse | MOV |
|------------------|------------|---------|---------|----------|---------|------------------------|---------|
| VTX-214-010-4505 | 1.0 | 100 | 47 | SMBJ7.0A | SMBJ20A | 1Amp/250V Slow Blow | S14K350 |
| VTX-214-010-4512 | | 100 | 47 | SMBJ7.0A | SMBJ20A | | |
| VTX-214-010-4524 | | 100 | 47 | SMBJ7.0A | SMBJ20A | | |

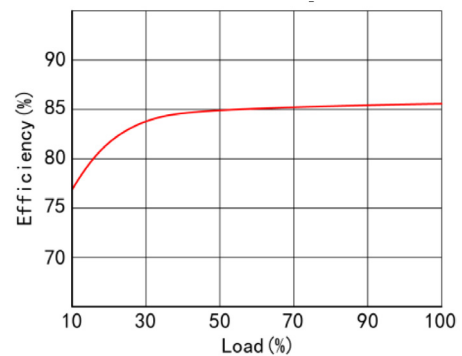
Note: For additional filtering requirements, contact technical support

Derating Graphs

Temperature Derating Graph

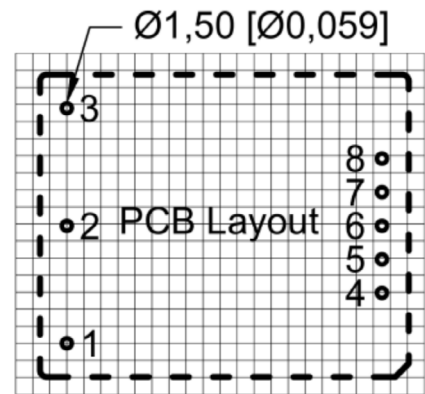
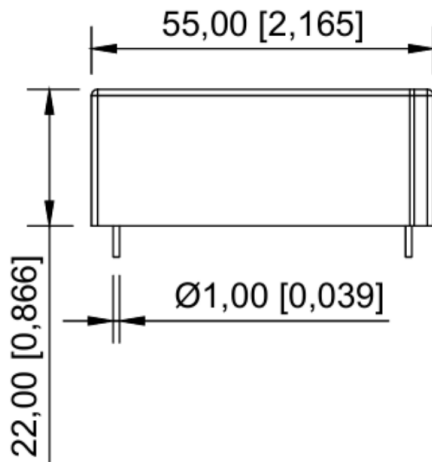


Efficiency/ Load Graph

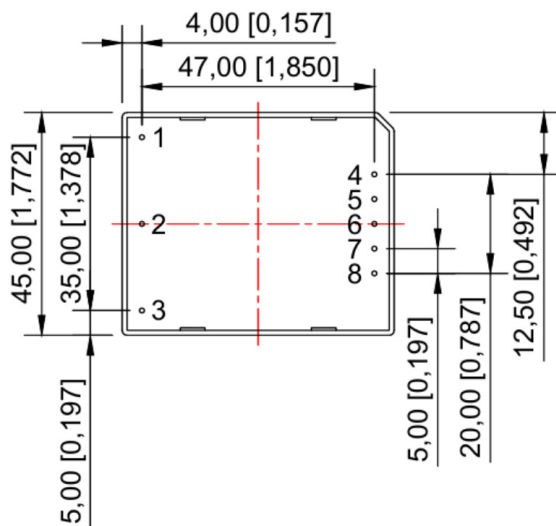


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Dimensions



Note: The pitch is 2.54 mm x 2.54 mm



| PIN Number | Dual | Dual non-common ground |
|------------|--------|------------------------|
| 1 | AC(L) | AC(L) |
| 2 | AC(N) | AC(N) |
| 3 | FG | FG |
| 4 | +XXVDC | +XXVDC |
| 5 | NO PIN | 0V2 |
| 6 | COM | NO PIN |
| 7 | NO PIN | +XXVDC |
| 8 | -XXVDC | 0V1 |

Note:
Tolerance for non-critical dimensions: + 0.25mm

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