



1500 LN series

Single Output DC/DC Converter



DESCRIPTIONS

The 1500LN, single output power modules are 8 to 15 watt DC/DC converters available in a single output configuration providing 2.0 VDC to 15 VDC outputs and are fully compatible to Tyco series LW010 and LW015 providing both positive and negative on/off logic. These 400kHz, switching converters are available 48 VDC inputs with efficiencies up to 88%. Offering pin for pin and full functionality to the Tyco LW series these converters are the only true second source available in the market.

OUTPUT CHARACTERISTICS

| | Min | Typ | Max | Unit/Comments |
|----------------------------|-----|-------|------|---|
| Output Voltage Set Point | | ±1 | | % Output voltage at nominal line & FL |
| Total Band Error | -2 | | +2 | % Output voltage including line/load regulation setting |
| Line Regulation | | | ±0.5 | % Output voltage measured from min. input line to max. |
| Load Regulation | | | ±0.5 | % Output voltage measured from FL to no load |
| Temperature Coefficient | | ±0.01 | | % per degree C |
| Ripple/Noise | | 60 | 100 | mV p-p measured at 20 MHz bandwidth with ext. 1 µf cap. |
| Output Voltage and Current | | | | Refer to model selection chart |
| Load Transient Response | | ±2 | | % Deviation of output voltage for a 25% load change for 200µS |
| Short Circuit Protection | | | | Indefinite, Automatic Recovery |
| Overvoltage Protection | | 135 | | %; Clamp type, (2.0 VDC output set at 3.3 VDC) |

FEATURES

- Pin Compatible to Tyco LW010 and LW015
- Positive and Negative Logic, On/Off Control
- Up to 88% Efficiency
- Industry Standard 1.0" X 2.0" X 0.375" Package
- Remote On/Off and Short Circuit Protection

INPUT CHARACTERISTICS

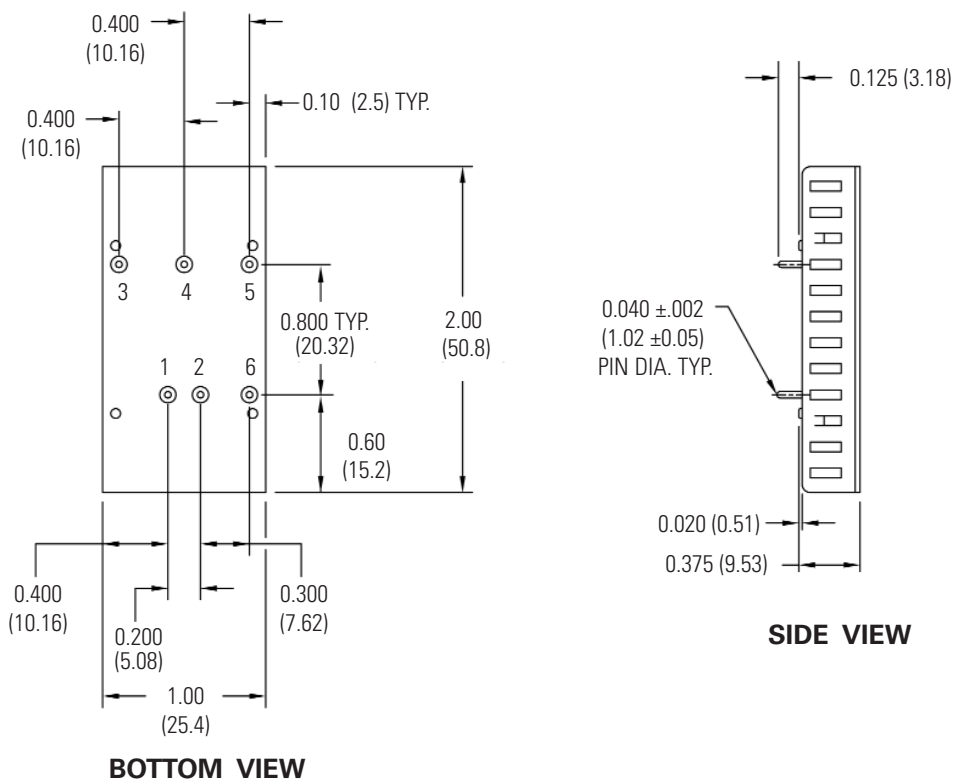
| | Min | Typ | Max | Units/Comments |
|-----------------------------|-----|------|------|---------------------------------|
| Input Voltage | 36 | 48 | 75 | VDC |
| Under Voltage Lock out | 33 | | | VDC |
| Input Fuse Requirements | | | 1 | Amps; Slow blow type |
| Efficiency by Model | | | | |
| 1502V0S48LN | | 72 | | %; FL Nominal Line |
| 1503V3S48LN | | 80 | | %; FL Nominal Line |
| 1505S48LN | | 84 | | %; FL Nominal Line |
| 1512S48LN | | 87 | | %; FL Nominal Line |
| 1515S48LN | | 88 | | %; FL Nominal Line |
| Switching Frequency | 360 | 400 | 440 | kHz; Factory set |
| Remote Shut Down (Optional) | | | | |
| Positive Logic Off | 0 | | 0.80 | VDC;Referenced to input |
| Positive Logic On | 3.5 | | | VDC or open;Referenced to input |
| Negative Logic On | 0 | | 0.80 | VDC;Referenced to input |
| Negative Logic Off | 3.5 | | | VDC or open;Referenced to input |
| Input - Output Capacitance | | 1200 | | pF |
| Input Filter | | | | LC type |
| Isolation Voltage | | 1500 | | VDC |
| Isolation Resistance | | 100 | | MOhms |



GENERAL CHARACTERISTICS

| | Min | Typ | Max | Unit/Comments |
|-----------------------|-----|-----|--------|----------------------------|
| Operating Temp. Range | -40 | | +105 | °C; measured at baseplate |
| Storage Temp. Range | -55 | | +125 | °C; measured at baseplate |
| Material Flammability | | | | UL94V-0 |
| Altitude: Operating | | | 10,000 | Feet |
| Non-Operating | | | 40,000 | Feet |
| Relative Humidity | 5 | | 95 | % Humidity, non-condensing |
| Weight | | | 16 | Grams |
| Size | | | | 1.0" X2.0" X0.375" |
| Case Material | | | | Black coated aluminum |
| Agency Approvals | | | | UL/CUL1950, TUV, EN60950 |

OUTLINE DRAWING



PIN OUT CHART

| PINS | FUNCTION |
|------|----------------|
| 1 | + VIN |
| 2 | - VIN |
| 3 | + VOUT |
| 4 | *TRIM |
| 5 | - VOUT |
| 6 | *REMOTE ON/OFF |

* = Optional features

Notes:

- Unless otherwise specified dimensions are in inches (mm).
Tolerances Inches mm
 X.XX = ±0.02 X.X = ±0.5
 X.XXX = ±0.010 X.XX = ±0.25
- Controlling dimension in inch.
- Case is vented on 2" long sides only.

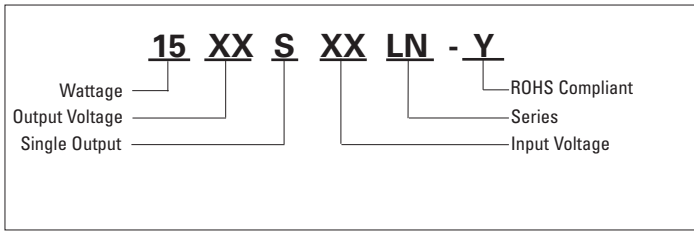
All specifications are typical at nominal input, nominal load and 25° C unless otherwise specified.
External, low ESR, 10 microfarad (minimum) capacitor across output is recommended for operation.



HOW TO ORDER

OPTIONAL FEATURES

HOW TO ORDER



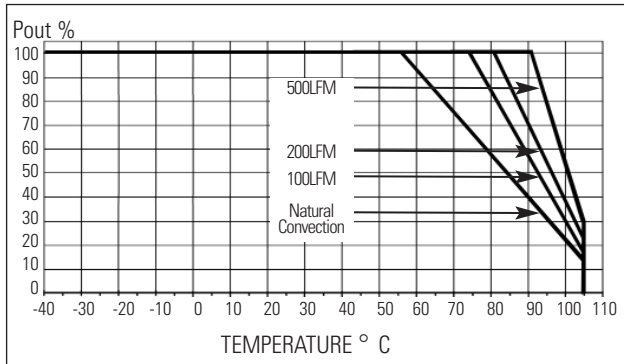
-4 Option, Positive Logic: To add the remote on/off feature to the converter please add a "-4" at the end of the part number. An additional pin (pin #6) will be added to the converter. Consult mechanical drawing for location.

-1 Option, Negative Logic: To add the remote on/off feature to the converter please add a "-1" at the end of the part number. An additional pin (pin #6) will be added to the converter. Consult mechanical drawing for location.

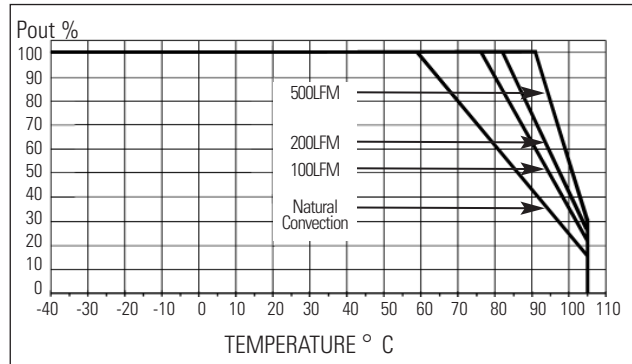
-9 Option, Output Voltage Trim: To add the output voltage trim feature to the converter please add a "-9" at the end of the part number. An additional pin (pin #4) will be added to the converter. Consult mechanical drawing for location.

DERATING CURVES

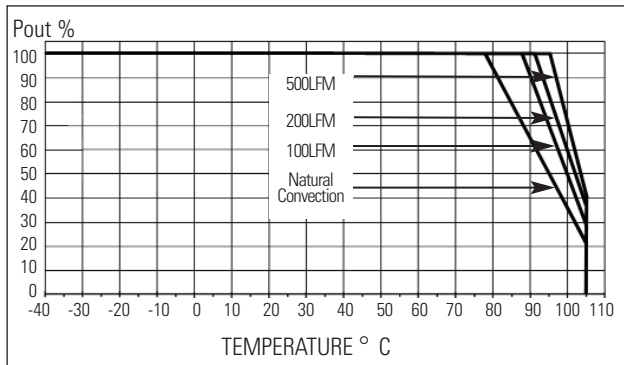
MODEL 1500LN Single 2V



MODEL 1500LN Single 3.3V & 5V



MODEL 1500LN Single 12 & 15V





MODEL SELECTION CHART

| | Input Voltage (VDC) | Input Voltage Range (VDC) | Max. Input Current (A) | Output Voltage (VDC) | Output Current (A) | OVP (VDC) | Efficiency @ FL (%) |
|-------------|----------------------------|----------------------------------|-------------------------------|-----------------------------|---------------------------|------------------|----------------------------|
| 1503V3S48LN | 48 | 36 - 75 | 0.317 | 3.3 | 3.5 | 4.3 | 80 |
| 1505S48LN | 48 | 36 - 75 | 0.390 | 5.0 | 3.0 | 6.8 | 84 |
| 1512S48LN | 48 | 36 - 75 | 0.372 | 12.0 | 1.25 | 15.0 | 87 |
| 1515S48LN | 48 | 36 - 75 | 0.367 | 15.0 | 1.0 | 18.0 | 88 |
| 1502VOS48LN | 48 | 36 - 75 | 0.242 | 2.0 | 4.0 | 3.3 | 72 |