



High Density DC/DC Converter Specifications

- ◆ 10W in a 1"x 2" industry standard package
- ◆ Output turn-on time within <10ms
- ◆ Low voltage outputs from 1.8V
- ◆ Meets conducted EMI Level B performance with external filtering

Key Market Segments & Applications

| | |
|---------------------|---|
| Central Office: | ATM, Sonet, DSL, ISDN, Frame relay |
| Broadband: | Switching Equipment, Routers |
| Wireless/Cellular: | Micro Cells (larger in size/10 sq. mi.) Pico Cells (smaller in size/1 to 2 sq. mi.) |
| Remote Electronics: | Fixed Local Loop, Fiber Optic Transmission, Microwave Transmission, Wireless Local Loop |
| Customer Premise: | PBX, PABX, Datacomm, Voice Systems, Video Conferencing |

X Features and Benefits

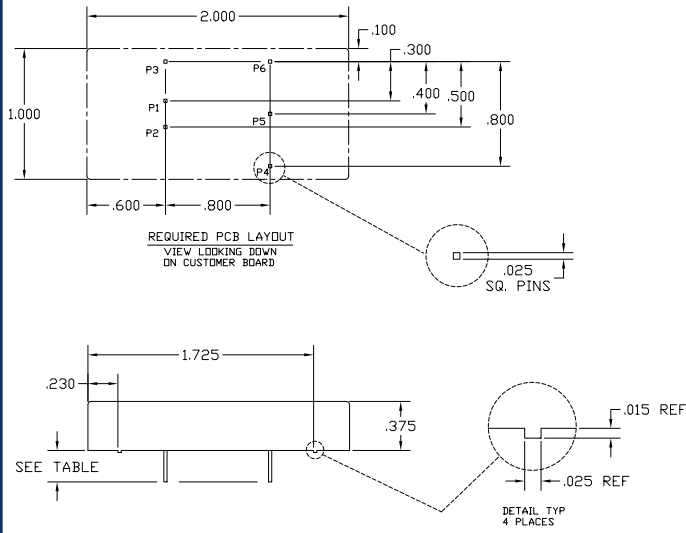
| Feature | Benefit |
|--|--|
| ◆ 10 Watts in 1"x 2" industry standard | ◆ Higher power density (less board space) |
| ◆ 10ms turn on time (Enable) | ◆ Support live insertion requirements |
| ◆ Both 24V and 48V inputs available | ◆ One source for wireless & central office application |
| ◆ Global safety agency approval UL, CSA, CE, VDE | ◆ Supports worldwide use, lowers risk to end user |

Specifications

| ITEMS | MODEL | | X10-24S03 | X10-24S05 | X10-24S12 | X10-24D12 |
|------------------------------|--------|--|--|------------|------------|------------|
| | | | X10-48S03 | X10-48S05 | X10-48S12 | X10-48D12 |
| Nominal Output Voltage | V | | 3.3 | 5 | 12 | ±12 |
| Max Output Current | A | | 2.42 | 2 | .83 | .42 |
| Max Output Power | W | | 7.98 | 10 | 10 | 10 |
| Efficiency (Typ.) | (*1) % | | 78 / 78 | 80 / 81 | 80 / 81 | 81 / 82 |
| Input Voltage Range | - | | 18V-36V (24V models) ; 36V-75V (48V models) | | | |
| Input Current (Typ.) | (*1) A | | 0.43, 0.21 | 0.52, 0.26 | 0.52, 0.26 | 0.51, 0.25 |
| Switching Frequency | - | | 265 KHz, all models | | | |
| Output Voltage Adjustment | V | | Adjustable ±10% | | | Fixed |
| No Load Input Power | W | | 0.4 Watts | | | |
| Max Ripple & Noise | mVpp | | 100 | | | |
| Max Line Regulation | mV | | 5 | 5 | 5 | 12 |
| Max Load Regulation | mV | | 10 | 10 | 24 | 24 |
| Over Voltage Protection | - | | 5.7V max | 7V max | 16V max | ±18V max |
| Overload/Short Circuit | - | | Continuous, Self Recovering | | | |
| Remote ON/OFF Control | - | | Both logic high/low options available, TTL compatible 1mA sink current | | | |
| Isolation (input to output) | - | | 1500VDC | | | |
| Conducted EMI | - | | EN55022 Level B, FCC Level B, ANSI63.12-1987 w/ external filter | | | |
| Operating Temperature | - | | -40°C to 105°C (case). Derate linearly above +70°C to 0W at 105°C | | | |
| Cooling | - | | Convection cooling allows full output ratings | | | |
| Dynamic Load Response | - | | 100mV deviation (3.3-5V), 240mV (12V), 0.8ms settling for a 25% step load change | | | |
| Undervoltage Lockout | - | | 24V input, 11V min, 14V typical; 48V input, 20V min, 27V typical | | | |
| Regulatory Agency Compliance | - | | VDE 0805, UL1950, CSA 22.2 No. 950-95, EN60950, CE mark | | | |
| Vibration | - | | 2.5G RMS, 10Hz-500Hz sweep vibration, 1 Hr. per axis | | | |
| Shock | - | | 70G/6msec. half sine, 3 shocks x 6 sides =18 total | | | |
| Weight (Typ.) | g | | 28.3 | | | |
| Size (W×H×D) | in | | 2" x 1" x 0.4" | | | |

*1 CVin (nom). First value applies to 24V input (Nom), second value to 48V input. (Nom)

X Series Outline Drawings



1. PIN CONFIGURATION WILL VARY DEPENDING ON MODEL & OPTIONS,
(6 PIN CONFIGURATION IS SHOWN ABOVE).
NOTES: UNLESS OTHERWISE SPECIFIED

SINGLE OUTPUT

| PIN | PIN DESIGNATION |
|-----|-------------------|
| 1 | -VIN |
| 2 | +VIN |
| 3 | DN/OFF (OPTIONAL) |
| 4 | +VOUT |
| 5 | TRIM (OPTIONAL) |
| 6 | -VOUT |

DUAL OUTPUT

| PIN | PIN DESIGNATION |
|-----|-------------------|
| 1 | -VIN |
| 2 | +VIN |
| 3 | DN/OFF (OPTIONAL) |
| 4 | +VOUT |
| 5 | COMMON |
| 6 | -VOUT |

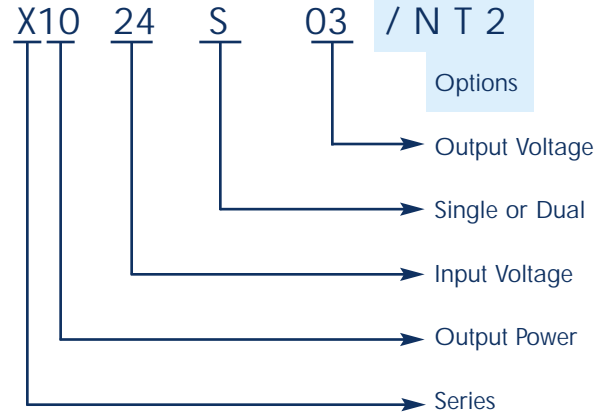
PIN LENGTH

| MODEL | LENGTH |
|-------|------------|
| STD. | .230 ±.010 |
| /2 | .110 ±.010 |

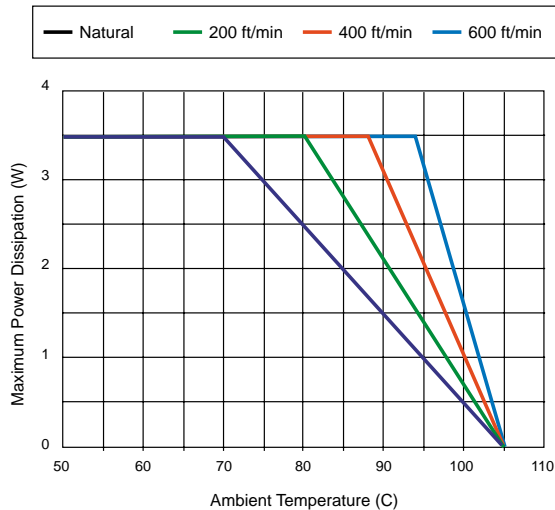
Options

| Suffix | Description |
|--------|---|
| /T | Output voltage adjustment. |
| /N | Negative logic remote on/off. |
| /P | Positive logic remote on/off. |
| /2 | Short pin: 2.8mm (0.11 inch). |
| /T2 | Output voltage adjustment and short pin. |
| /N2 | Negative logic remote on/off and short pin. |
| /P2 | Positive logic remote on/off and short pin. |
| /NT | Negative logic remote on/off and output voltage adjustment. |
| /PT | Positive logic remote on/off and output voltage adjustment. |
| /NT2 | Negative logic remote on/off, output voltage adjustment, and short pin. |
| /PT2 | Positive logic remote on/off, output voltage adjustment, and short pin. |

X Series Model Number Example



X10 Derating Curve



Note: X10-24S unit used as a standard curve.

For Additional Information, please visit
www.lambdapower.com/products/x-series.htm