



## High Density DC/DC Converter Specifications

- ◆ 15W in a 1"x 2" industry standard package
- ◆ 20W coming soon
- ◆ 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

- ◆ 15 Watts in 1"x 2" industry standard
- ◆ 10ms turn on time (Enable)
- ◆ Both 24V and 48V inputs available
- ◆ Global safety agency approval UL, CSA, CE, VDE

### Benefit

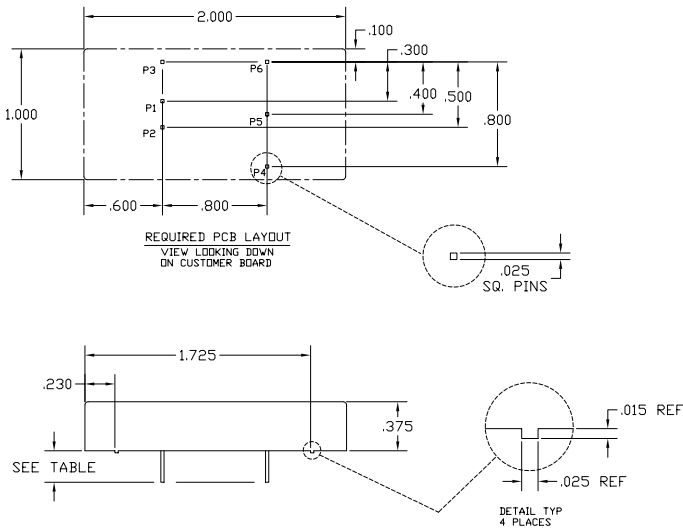
- ◆ Higher power density (less board space)
- ◆ Support live insertion requirements
- ◆ One source for wireless & central office applications
- ◆ Supports worldwide use, lowers risk to end user

## Specifications

MODEL		X15-24S1.8	X15-24S02	X15-24S2.5	X15-24S03	X15-24S05	X15-24S12
ITEMS		X15-48S1.8	X15-48S02	X15-48S2.5	X15-48S03	X15-48S05	X15-48S12
Nominal Output Voltage	V	1.8	2.0	2.5	3.3	5.0	12.0
Max Output Current	A	3.0	3.0	3.0	3.0	3.0	1.25
Max Output Power	W	5.4	6.0	7.5	10.0	15.0	15.0
Efficiency (Typ.)	(*1) %	67 / 69	67 / 69	67 / 69	77 / 79	80 / 82	76 / 78
Input Voltage Range	-	18-36VDC (24V models); 36-75VDC (48V models)					
Input Current (Typ.)	(*1) A	.34 / .17	.38 / .19	.47 / .23	.54 / .27	.78 / .38	.82 / .40
Switching Frequency	-	265 KHz, all models					
Output Voltage Adjustment	V	Adjustable ±10%					
No Load Input Power	W	0.4					
Max Ripple & Noise	mVpp	100					
Max Line Regulation	mV	5					
Max Load Regulation	mV	15	15	15	10	10	24
Over Voltage Protection	-	3.5Vmax	4.0Vmax	4.0Vmax	5.7Vmax	7Vmax	16Vmax
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	ON/OFF (OPTIONAL)
4	+VOUT
5	TRIM (OPTIONAL)
6	-VOUT

### DUAL OUTPUT

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

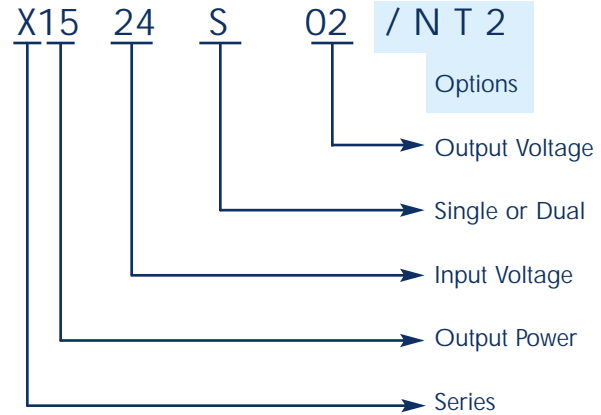
### PIN LENGTH

MODEL	LENGTH
STD.	.230 +.010
/2	.110 +.010

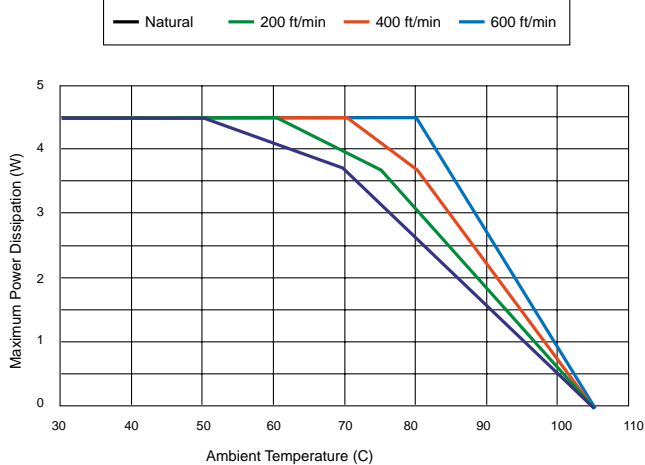
## Options

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



## X15 Derating Curve



Note: X15-24S unit used as a standard curve.

For Additional Information, please visit  
[www.lambdapower.com/products/x-series.htm](http://www.lambdapower.com/products/x-series.htm)