

High Density DC/DC Converter Specifications

Features

- ◆ 20W 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
- ◆ High current low voltage models
- ◆ Both 24V and 48V inputs available
- ◆ Global safety agency approval UL, CSA, CE, TUV



Specifications					
Model		X20-24S1.8 X20-48S1.8	X20-24S2.5 X20-48S2.5	X20-24S03 X20-48S03	X20-24S05 X20-48S05
Nominal Output Voltage	V	1.8	2.5	3.3	5.0
Rated Output Current	A	7.0	6.0	5.5	4.0
Rated Output Power	W	12.6	15.0	18.0	20.0
Efficiency (Typ.)	%	74	74	84	86
Input Voltage Range	-	18-36VDC (24V models); 36-75VDC (48V models)			
Input Current (Typ.) (*1)	A	0.71 / 0.36	0.85 / 0.42	0.90 / 0.45	0.97 / 0.49
Switching Frequency	-	200 kHz, all models			
Output Voltage Adjustment	%	Adjustable ±10%			
Over Temperature Protection	-	Self Recovering			
Max Ripple & Noise	mVpp	100			
Max Line Regulation	mV	5			
Max Load Regulation	mV	15	15	15	15
Over Voltage Protection	V	3.5Vmax	4.0Vmax	5.7Vmax	7.0Vmax
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)	VDC	1500VDC			
Conducted EMI	-	EN55022 Level B, FCC Level B, ANSI63.12-1987 w/ external filter			
Operating Temperature	°C	-40°C to 105°C (case)			
Cooling	-	Convection cooling allows full output ratings			
Dynamic Load Response	-	100mV deviation (1.8V-5V), 0.4ms settling for a 25% step load change			
Undervoltage Lockout	-	24V input, 11V min, 14V typical; 48V input, 20V min, 27V typical			
Regulatory Agency Compliance	-	UL1950, Third Edition 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 Vin (nom). First value applies to 24V input (Nom), second value to 48V input. (Nom)

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X Series Outline Drawings

REQUIRED PCB LAYOUT
VIEW LOOKING DOWN
ON CUSTOMER BOARD

1. PIN CONFIGURATION WILL VARY DEPENDING ON MODEL & OPTIONS.
(6 PIN CONFIGURATION IS SHOWN ABOVE).

NOTES: UNLESS OTHERWISE SPECIFIED

Pin Configuration			
Pin	Function	Pin	Function
1	Vi(-)	4	Vo(+)
2	Vi(+)	5	TRIM (optional)*
3	ON/OFF (optional)*	6	Vo(-)

* Pin is not present unless option is specified.

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

X2024S2.5/NT2

Options

Output Voltage

Single

Input Voltage

Output Power

Series

For Additional Information, please visit us.tdk-lambda.com/lp/products/x-series.htm



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