



# 900H series

## Single Output DC/DC Converter



### DESCRIPTIONS

The 900H series 9 watt, low noise/ripple high density DC/DC converters offers a wide variety of input voltages in 5, 12, 18, 24, 28 and 48 VDC with high performance output characteristics. The low profile modular case (2.0" X 2.0" X 0.4") makes the 900H series attractive for printed circuit board mounting applications for I/O computer subsystems, instruments, telecommunication equipment, medical and analog networks where low noise output and excellent line and load regulation is required.

### OUTPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Output Voltage Set Point	±0.5	±1.0		% Output voltage at nominal line & FL
Line Regulation			±0.03	% Output voltage measured from min. input line to maximum
Load Regulation			±0.03	% Output voltage measured from FL to 10% load
Ripple/Noise			10	mV p-p, Nom.Line @FL, 20MHz B.W., using 1 µf bypass capacitor
Short Circuit Protection				Limited, Automatic Recovery
Transient Recovery Time		20		µS for 25% load change, to within 1%
Temperature Coefficient			±0.01	% per °C

### FEATURES

- 6-Sided Continuous Shielding
- Low Output Ripple and Noise
- Compact 0.4 Inch Profile Package
- -30°C to +75°C Operating Temperature Range
- ±0.03% Line/Load Regulation
- Short Circuit Protection
- >1,000,000 Hours MTBF
- UL1950 and CSA 22.2 Approved

### INPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Input Voltage @ FL				
5 VDC Input Models	4.65	5	5.25	VDC
12 VDC Input Models	10.9	12	13.2	VDC
18 VDC Input Models	16.4	18	19.8	VDC
24 VDC Input Models	21.6	24	26.4	VDC
28 VDC Input Models	25.2	28	30.8	VDC
48 VDC Input Models	43.2	48	52.8	VDC
Input Fuse Requirements				
5 VDC Input Models		4000		mA; Slow blow type
12 VDC Input Models		2000		mA; Slow blow type
18 VDC Input Models		1500		mA; Slow blow type
24 VDC Input Models		1000		mA; Slow blow type
28 VDC Input Models		1000		mA; Slow blow type
48 VDC Input Models		500		mA; Slow blow type
Reverse Polarity Input Current			5	Amp
Input Filter				Pi Filter

### GENERAL CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Switching Frequency		125		kHz
Isolation Voltage	500			VDC, 1 minute
Isolation Resistance	1000			Mohm, 500VDC
Isolation Capacitance		100		pF, 100kHz, 1Volt
MTBF (MIL-HBK-217F)	1			Million Hours, +25°C, Ground Benign



**ENVIRONMENTAL SPECIFICATIONS**

	Min	Typ	Max	Unit/Comments
Operating Temp. Range	-30		+75	°C; Ambient
Storage Temp. Range	-40		+125	°C
Relative Humidity			+95	% Humidity; non-condensing
Cooling				Free-Air Convection

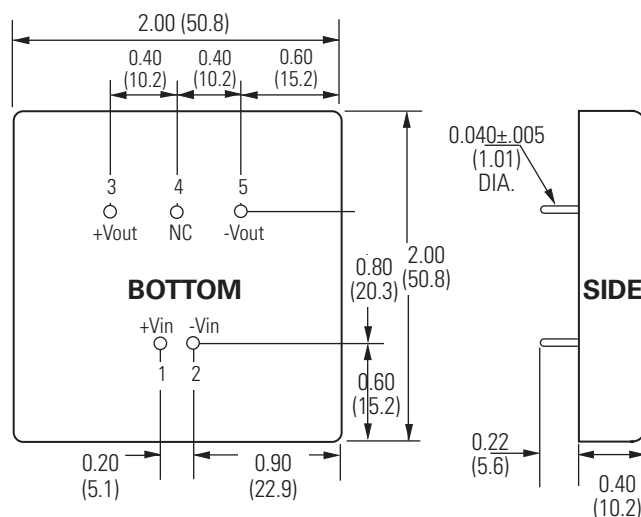
**PHYSICAL CHARACTERISTICS**

	Unit/Comments
Case Size	2.0 X 2.0 X 0.4 inches (51.0 X 51.0 X 10.2 mm)
Case Material	Painted Metal with Non-Conductive Base
Shield Connection	Output Return (Pin 5)
Flammability	UL94V-0
Weight	74 Grams

**TABLE 1 - INPUT VOLTAGE RANGE VS OUTPUT LOAD**

Nominal Input (VDC)	Input Voltage Range (VDC) at:			
	20% Load	40% Load	60% Load	100% Load
5	4.30 - 6.00	4.40 - 5.70	4.55 - 5.60	4.65 - 5.25
12	10.3 - 15.0	10.4 - 14.6	10.6 - 13.6	10.9 - 13.2
18	15.5 - 22.5	15.7 - 21.8	15.8 - 20.4	16.4 - 19.8
24	20.4 - 30.0	20.6 - 29.0	21.0 - 27.0	21.6 - 26.4
28	24.2 - 36.0	24.5 - 34.0	24.9 - 31.8	25.2 - 30.8
48	41.3 - 60.0	42.0 - 58.0	42.3 - 54.4	43.2 - 52.8

**OUTLINE DRAWING**



**PIN OUT CHART**

Pins	Single
1	+ Vin
2	- Vin
3	+ Vout
4	N/C
5	- Vout

NC = No Connection

**Notes:**

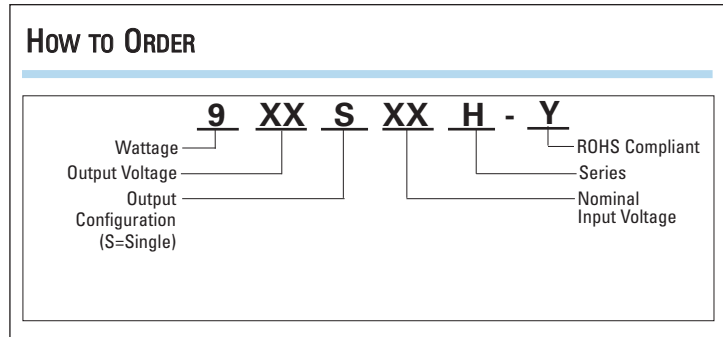
1. Unless otherwise specified dimensions are in inches (mm).

Tolerances	Inches	mm
	X.XX = ±0.02	X.X = ±0.5
	X.XXX = ±0.010	X.XX = ±0.25

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



MODEL SELECTION CHART

Model	Nominal Input Voltage (VDC)	Output Voltage (VDC)	Full Load Output Current (mA)	No Load Input Current (mA)	Full Load Input Current (mA)	Reflected Ripple Current (mA)	Efficiency @ FL (%)
905S5H	5	5	1800	140	2700	20	65
912S5H	5	12	750	140	2680	20	67
915S5H	5	15	600	140	2680	20	67
905S12H	12	5	1800	40	1160	10	65
912S12H	12	12	750	40	1000	10	75
915S12H	12	15	600	40	1000	10	75
905S18H	18	5	1800	40	760	10	66
912S18H	18	12	750	40	660	10	75
915S18H	18	15	600	40	660	10	75
905S24H	24	5	1800	30	570	5	66
912S24H	24	12	750	30	500	5	75
915S24H	24	15	600	30	490	5	75
905S28H	28	5	1800	30	490	5	66
912S28H	28	12	750	30	425	5	75
915S28H	28	15	600	30	425	5	75
905S48H	48	5	1800	20	285	5	66
912S48H	48	12	750	20	250	5	75
915S48H	48	15	600	20	250	5	75