



# 600H series

## Dual Output DC/DC Converter



### DESCRIPTIONS

The 600H series 6 watts high density DC/DC converters offer 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 600H 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
Output Voltage Balance			±50	mV; Equal Output Loads
Line Regulation	±0.01	±0.03		% Output voltage measured from min. input line to maximum
Load Regulation	±0.01	±0.03		% Output voltage measured from FL to 10% load
Ripple/Noise			20	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

- Low Output Ripple and Noise
- -30°C to +75°C Operating Temperature Range
- ±0.03% Line/Load Regulation
- Short Circuit Protection
- >1,000,000 Hours MTBF
- Six-Sided Continuous Shielding
- UL1950 Approved
- CSA22.2 Approved

### INPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Input Voltage				
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		2500		mA; Slow blow type
12 VDC Input Models		1500		mA; Slow blow type
18 VDC Input Models		1000		mA; Slow blow type
24 VDC Input Models		750		mA; Slow blow type
28 VDC Input Models		750		mA; Slow blow type
48 VDC Input Models		350		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

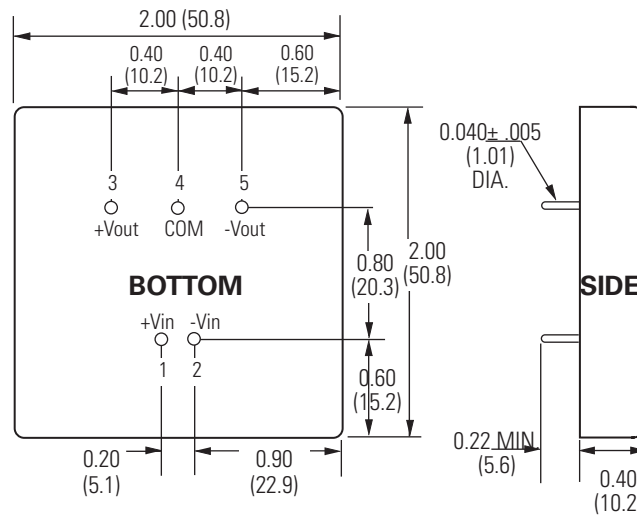
**PHYSICAL CHARACTERISTICS**

	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 Common Pin
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	Dual
1	+ Vin
2	- Vin
3	+ Vout
4	Common
5	- Vout

**Notes:**

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

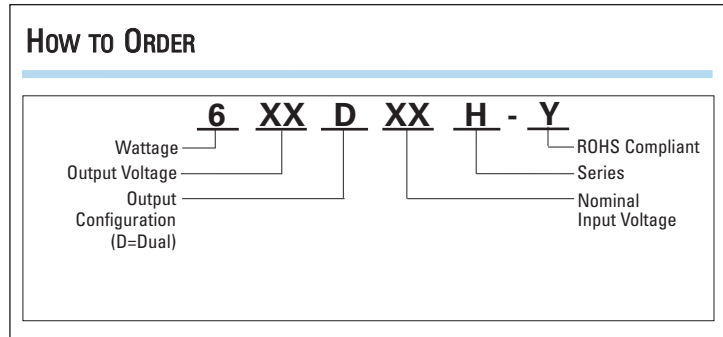
Tolerances	Inches	mm
	X.XX = ±0.02	X.X = ±0.5
	X.XXX = ±0.010	X.XX = ±0.25

NC = No Connection

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 (%)
605D5H	5	±5	±600	140	1850	20	65
612D5H	5	±12	±250	140	1790	20	67
615D5H	5	±15	±200	140	1790	20	67
605D12H	12	±5	±600	60	765	10	65
612D12H	12	±12	±250	60	750	10	67
615D12H	12	±15	±200	60	685	10	73
605D18H	18	±5	±600	40	510	10	65
612D18H	18	±12	±250	40	475	10	70
615D18H	18	±15	±200	40	455	10	73
605D24H	24	±5	±600	30	385	5	65
612D24H	24	±12	±250	30	370	5	68
615D24H	24	±15	±200	30	335	5	75
605D28H	28	±5	±600	30	330	5	65
612D28H	28	±12	±250	30	285	5	75
615D28H	28	±15	±200	30	285	5	75
605D48H	48	±5	±600	20	190	5	65
612D48H	48	±12	±250	20	190	5	66
615D48H	48	±15	±200	20	170	5	73