

2500 HN series



www.martekpower.com

Triple Output DC/DC Converter



The 2500HN (high-density, non-encapsulated), triple output power modules are 25 watt DC/DC converters available in a triple output configuration providing both digital and analog outputs in a compact, industry standard 2" X 2" X 0.4" package. These 400kHz, switching converters are available in 12, 24 and 48 VDC inputs making them one of the most versatile product lines in the market with efficiencies up to 85%. Advanced surface mount construction allows these converters to achieve outstanding thermal performance eliminating the need for thermal potting compounds and thereby enhancing manufacturing efficiency to reduce costs.

OUTPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Output Voltage Set Point:				
Main		±1		% Output voltage
Auxiliary		±3		
Total Band Error:				% measured at min.
Main	-2		+2	line and full load
Auxiliary	-5		+5	and, max. line and min. load
Line Regulation:		±0.5		% Output voltage measured from min. input line to max.
Load Regulation:				% Output voltage measured from FL to min load
V1		±1		
V2 and V3		±5		
Ripple/Noise				
Main		100		mV; p-p measured @ 20 MHz bandwidth
Auxiliary		1%		
Output Voltage and Current				Refer to model selection chart
Temperature Coefficient		±0.02		% Output Voltage
Short Circuit Protection				Continuous
Overvoltage Protection		130		% Output Voltage; Clamp Type

FEATURES

- Up to 85% Efficiency
- Triple Output, 25 watt converter
- Available in 12, 24 and 48 VDC Inputs
- Industry Standard 2" X 2" X 0.4" Package
- Over Voltage, Over Temperature and Short Circuit Protection

INPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Input Voltage				
12 VDC Input Models	9	12	18	VDC
24 VDC Input Models	18	24	36	VDC
48 VDC Input Models	36	48	75	VDC
Over Voltage Shutdown				
12 VDC Input Models			18.9	VDC
24 VDC Input Models			37.8	VDC
48 VDC Input Models			78.8	VDC
Full Load Input Current				
12 VDC Input Models			2660	mA
24 VDC Input Models			1310	mA
48 VDC Input Models			650	mA
Efficiency by Model				
2505/12T12HN		83		%; FL Nominal Line
2505/15T12HN		83		%; FL Nominal Line
2505/12T24HN		84		%; FL Nominal Line
2505/15T24HN		84		%; FL Nominal Line
2505/12T48HN		85		%; FL Nominal Line
2505/15T48HN		85		%; FL Nominal Line
Switching Frequency	360	400	440	kHz; Factory set
Remote Shut Down				
Off		0	0.80	VDC; Referenced to input
On		3.5		input (-)
Input - Output Capacitance			2000	pF
Isolation Voltage		1500		VDC
Isolation Resistance		100		MOhms

MODEL SELECTION CHART

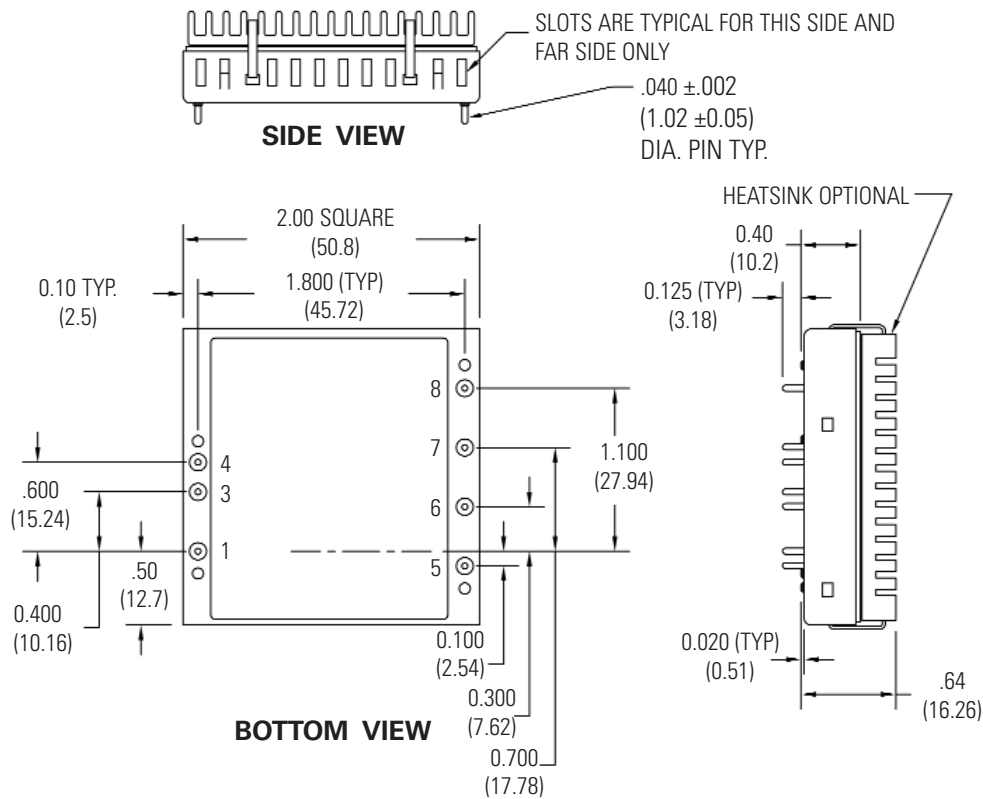
	Input Voltage (VDC)	Output Voltage (VDC)	Min. Output Current (mA)	Nominal Output Current (mA)	Max Output Current (mA)*
2505/12T12HN	12	5 ±12	300 ±41	3000 ±412	4000 ±500
2505/15T12HN	12	5 ±15	300 ±33	3000 ±333	4000 ±500
2505/12T24HN	24	5 ±12	300 ±41	3000 ±412	4000 ±500
2505/15T24HN	24	5 ±15	300 ±33	3000 ±333	4000 ±500
2505/12T48HN	48	5 ±12	300 ±41	3000 ±412	4000 ±500
2505/15T48HN	48	5 ±15	300 ±33	3000 ±333	4000 ±500

GENERAL CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Operating Temperature Range	-40		+105	°C measured at baseplate
Storage Temperature Range	-55		+125	°C
Over Temperature Shutdown	+110		+120	°C
Weight			30	Grams
Size				2" X 2" X 0.4"
Case Material				Black coated aluminum
Agency Approvals				UL/CUL1950 TUV, EN60950

* Total output power may not exceed 25 watts.

OUTLINE DRAWING



PIN OUT CHART

Pins	FUNCTION
1	REMOTE ON/OFF
3	- Vin
4	+ Vin
5	- V3out
6	COMMON
7	+ V1out
8	+V2out

Notes:

- Unless otherwise specified dimensions are in inches (mm).
- Controlling dimension in inch.
- 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

HOW TO ORDER

25 05/XX T XX HN- H - Y

Wattage ——— 25

Output Voltage ——— 05/XX

XX = ± 12 / ±15

Triple Output ——— T

ROHS (omit for standard) ——— Y

OPTION (omit for standard) ——— HN-

(H = Heatsink, external)

Hi-Density, Non-Encap ——— H

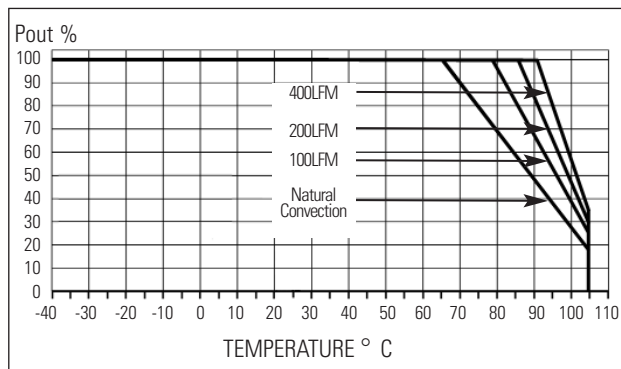
Input Voltage ——— XX

H Options: To add external heatsink mounted on the baseplate of the converter please add a “- H”. Heatsink is provided to improve thermal performance (see derating curves).

Y Options: To order a ROHS compliant converter (either with or without heatsink) add a “-Y”.

DERATING CURVES

MODEL 2500HN Triple (Without heatsink)



MODEL 2500HN Triple (With heatsink)

