



Unit measures 1.3"L x 0.53"W x 0.32"H

- Non-Isolated Converter
- 3.3-5.5VDC Input Range (4.5-5.5VDC, 3.3V O/P)
- 0.9VDC to 3.3VDC Outputs
- On/Off Control Function
- High Efficiency to 95% (3.3V O/P)
- Small SMT Package Style



Model Number	Input Range	Output Voltage	Output Current	Efficiency
HNA3R3100	4.5-5.5VDC	3.3VDC	10A	95%
HNA2R5100	3.0-5.5VDC	2.5VDC	10A	92%
HNA2R0100	3.0-5.5VDC	2.0VDC	10A	90%
HNA1R8100	3.0-5.5VDC	1.8VDC	10A	90%
HNA1R5100	3.0-5.5VDC	1.5VDC	10A	88%
HNA1R2100	3.0-5.5VDC	1.2VDC	10A	86%
HNA1R0100	3.0-5.5VDC	1.0VDC	10A	84%
HNA0R9100	3.0-5.4VDC	0.9VDC	10A	83%



## 10A Non-isolated DC/DC Converters

## HNA series

### INPUT SPECIFICATIONS

Input Voltage, Nominal	3.0 - 5.5VDC (4.5-5.5VDC, 3.3V O/P)	
Recommended I/P Fuse	20A	
Input Voltage Ranges	3.0 - 3.6VDC	4.5-5.5 VDC
Maximum Input Current	6A (Note 4)	
On/Off Control		
(Ref to -Input pin)	Open or $0V < V_R < 1V = ON$	
3.3Vin	$2.4V < V_R < 6V = OFF$	
5Vin	$3.2V < V_R < 6V$	
Input Reflected Ripple	625mA rms	

### OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart	
Preset Accuracy	+/- 2.7% max.	
Rise Time	Please see page 3	
Min Load	None	
Load Regulation	(0% - FL)	+/- 0.5%
Line Regulation		+/- 0.5%
Temperature Coefficient	+/- 0.02%/DegC	
Ripple/Noise (Pk-Pk, typ),	20Mhz BW	100mV
Overvoltage Protection	Clamp, 130-150% *	
Short Circuit Protection	Continuous, self-recovering	
Transient Response Recovery		
Time (See Fig 1)		
Load step change	100%-0% or 0%-100% 1A/10uS Nominal Input	
Peak Deviation	80mV	
Settling Time	200uSec	
Max External Load Capacitance	10,000uF	
O/P Current Limit (Note 1)	Latching	
Voltage Adjust (See Fig 2)	+/-10%	

### GENERAL SPECIFICATIONS

Input-Output Isolation	None	
In/Out Capacitance	1000 pF	
Efficiency (Note 5)	See Selection Chart	
Switching Frequency	500Khz, typ.	
Dimensions (See Fig 3.)	2.5" x 0.55" x 0.26" (63.5 x 14.0 x 6.6mm)	
Weight	0.3oz (8.5g)	
MTBF (Note 3)	2.064x10 <sup>6</sup> Hrs	

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### ENVIRONMENTAL SPECIFICATIONS

Oper. Temp. Range (See Fig 4)	-40 to +85 DegC(FL)
Oper. Humidity Range	5~85%RH
	No Condensation
Cooling	Forced Air, See Derate
Storage Temperature Range	-55 to +125 DegC *
Recommended Storage	Hermetically Sealed in a 5 to 30°C, 40 to 60% RH Environment. (1 year warranty from date of seal)
Thermal Shock	Mil Std 810D
Over Temp Protection	+125DegC
MTBF	1,000,000 Hrs Mil Std 217, 25C
Shock/Vibration	To MIL-STD 810C
Material	UL: 94 V-0

### EMC SPECIFICATIONS

Conducted Emissions	EN55022, Level A
Radiated Emissions	EN55022, Level A
Conducted Immunity	EN61000-4-6, Criteria 2

### NOTES

- Starting the Product into a Short Circuit Mode will damage the device.
- In order to meet all specifications for the 3.3Vin models, an external capacitor is needed on the input. The capacitor is SANYO OS-CON,SA-Series, 68uF/10V.
- BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40DegC. (Ground fixed and controlled environment)
- Maximum value at nominal input voltage and full load.
- Minimum value at nominal input voltage and full load.

*All specifications are typical at nominal input, full load, and 25DegC unless otherwise noted*

\* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

**Astrodyne products are not authorized or warranted for use as critical components in life support systems, equipment used in hazardous environments, nuclear controls systems, or other mission-critical applications.**

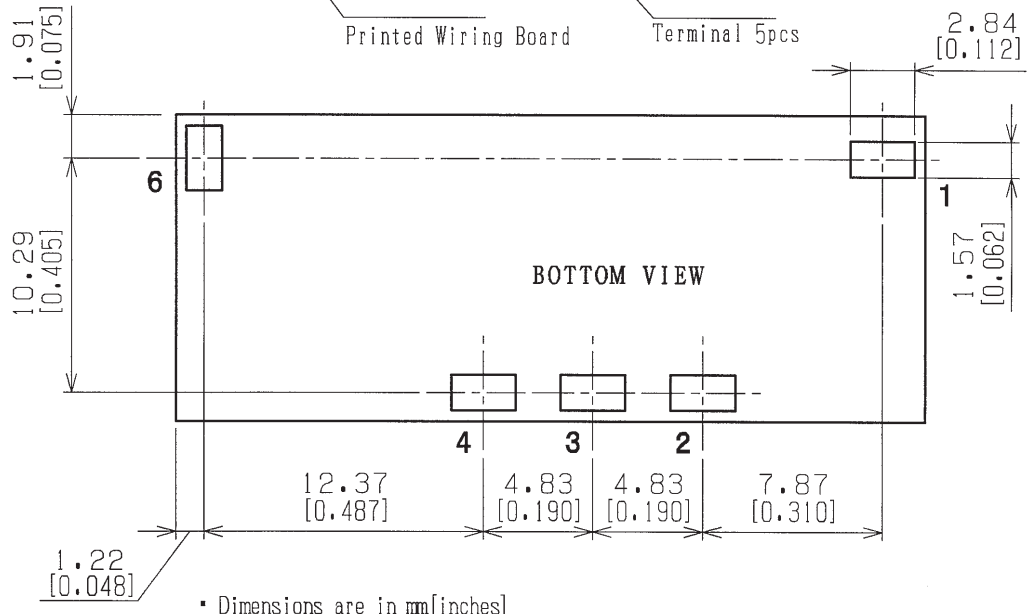
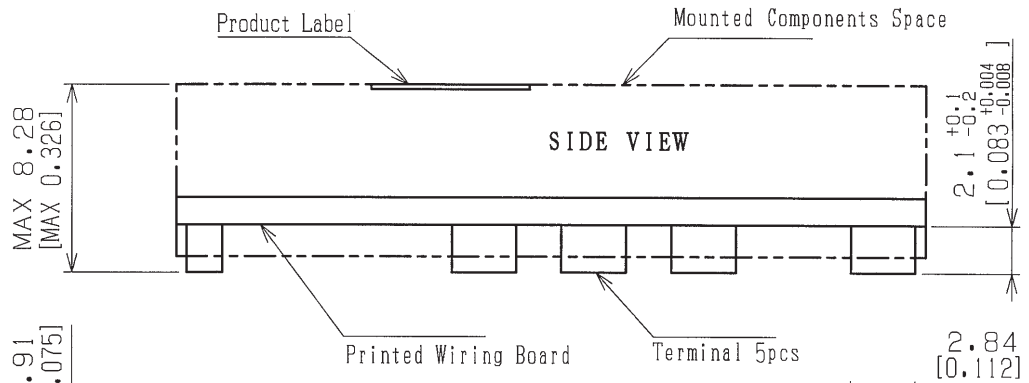
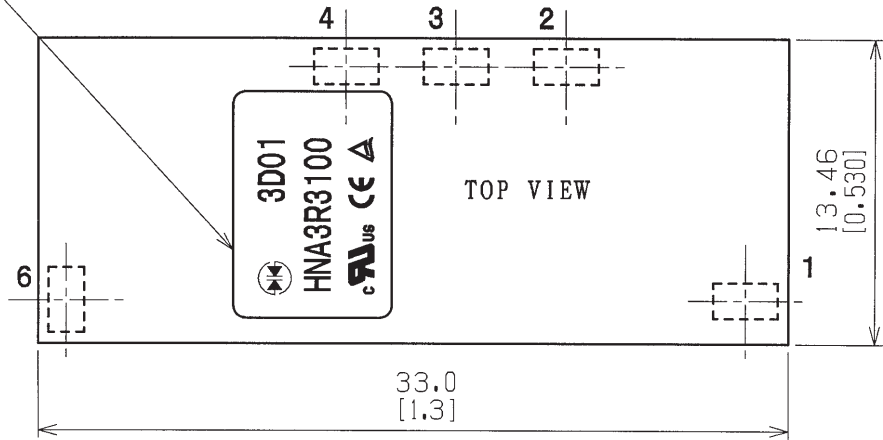
ASTRODYNE USA: 1-800-823-8082  
ASTRODYNE PACIFIC: 886-2-26983458



### MECHANICAL SPECIFICATIONS

Product Label  
The notation of this product label shows example.

Lot No.details  
**3D01**  
Assembly lot number  
(1~9, O, N, D)  
Month of manufacture  
(0~9)  
Last number of year



Pin No.	Symbol
1	V <sub>in</sub>
2	GND
3	V <sub>out</sub>
4	TRIM
5	
6	ON/OFF

Table: Terminal Assignment

- Dimensions are in mm[inches]
- Tolerances without indication are  $\pm 0.25$ mm[0.01] (except Max, Min figures)
- Weight: MAX 4.8g



**OUTPUT RISE TIME**

