



# ETA-USA

## HIGH QUALITY SWITCHING POWER SUPPLIES

AC/DC SWITCHING POWER SUPPLY  
AC INPUT 85-264V  
47-63 Hz  
SINGLE CHANNEL OUTPUT  
100 WATTS

## NHD Series



### General Description



### Application

Industrial

### Input

<b>Input Voltage:</b>	AC100-240V	
<b>Input Voltage Range:</b>	AC85-264V, DC120-350	
<b>Input Current [A]:</b>	NHD3.3SX	Other NHD
	0.98/0.36	1.44/.52
<b>Frequency:</b>	50/60Hz	
<b>Input Frequency</b>	47-63Hz	
<b>Range:</b>	Single	
<b>Phase:</b>	10A (typ.) at AC100V	
<b>Inrush Current: *1</b>	22A (typ.) at AC230V	
<b>Leakage Current:</b>	0.15/0.38 [mA] (maximum) at AC100/230V	

### Features

1. Small size
2. High efficiency & lightweight
3. RoHS Compliant

### Options

N/A



ETA USA

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Output Characteristic	Unit	Models				
		NHD3.3SX	NHD05SX	NHD12SX	NHD15SX	NHD24SX
Output Voltage	Vdc	3.3	5	12	15	24
Output Current	A	20	20	8.5	7	4.2
Voltage Adjust Range	V	±10% of Rated Output Voltage (at no load within the input range)				
Ripple&Noise(max)	mVpp	150	150	220	250	340
Rise time	mS	500mS(maximum) at 25°C and rated input/output				
Hold up time	mS	30 min at AC85[V]in				
<b>Regulation</b>						
a. Line Regulation	mV	26	40	96	120	190
b. Load Regulation	mV	35	45	108	135	216
c. Temperature Coefficient	°C	0.03 %/°C (from -10~71°)				
d. Drift(maximum)	mV	32	40	75	90	135
e. Dynamic Load Regulation (typ.) *2	mV	+/-150	+/-200	+/-360	+/-450	+/-720
f. Recovery Time *2	mS	5 mS(typ.)				
<b>Efficiency *1</b>	<b>%</b>	<b>83/87</b>	<b>86/89</b>	<b>87/90</b>	<b>87/90</b>	<b>88/90</b>
<b>Power Factor *1</b>		<b>0.99/0.93</b>	<b>0.99/.94 at AC100/230V</b>			





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Environmental Specification	
Operating Temperature	-10 to +50 °C
Derating Curve	-3.5%/°C (at 50°C up to 71°C)
Operating Humidity	20~90[%RH] (non-condensing)
Storage Temperature	-20 to +85 °C
Storage Humidity	20~90[%RH] (non-condensing)
Withstanding Voltage	Primary-Secondary AC3,000V for 1minute Primary-Frame Ground AC2,500V for 1minute Secondary-Frame Ground AC1000V for 1minute *Sensory current at (10[mA])
Isolation Resistance	Primary-Secondary-Frame Ground 100MΩ(minimum) by DC500V insulation tester
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s <sup>2</sup> ,20 minute cycle each along X,Y,Z axes(non-operating)
Shock	196 m/s <sup>2</sup>
Cooling	Convection
Leakage Current	0.15/0.38[mA] (maximum) at AC100/230V
Environmental Agencies	
Line Conducted Noise	Built to meet FCC Part15-B Class B Built to meet VCCI Class B Built to meet CISPR Class B Built to meet EN55022 Class B
Line Harmonic Distortion	Built to meet IEC61000-3-2
Safety	Applying for UL: UL60950-1 , C-UL: CSA60950-1 and EN60950-1
Function/Protection	
Over current Protection	Built in
Over voltage Protection	Built in (latch type)
Remote Sense	Not available
Remote On/Off	Not available
Power Fail Detection	Not available
Series Operation	Not available
Parallel Operation	Not available
Power Factor Correction	Built in
Mechanical	
Dimension [mm]	85 (W)x130.5 (D)x40 (H) (does not include output terminal)
Weight [g] (typical)	430g

Conditions:

\*1 Rated input and Rated output, cold start

\*2 at Output current quick change 25% to 75%



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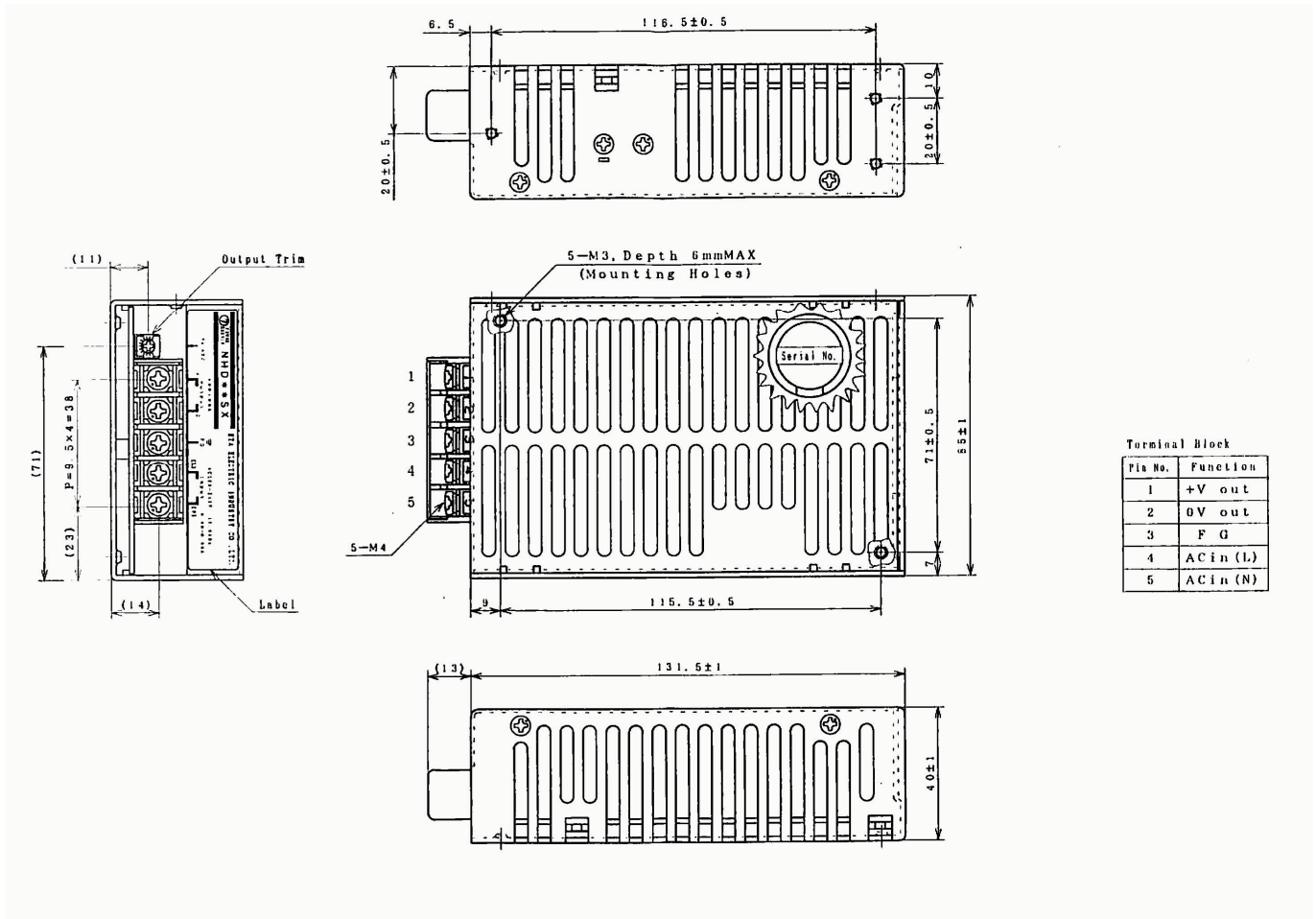


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### DIMENSION DIAGRAM (mm)





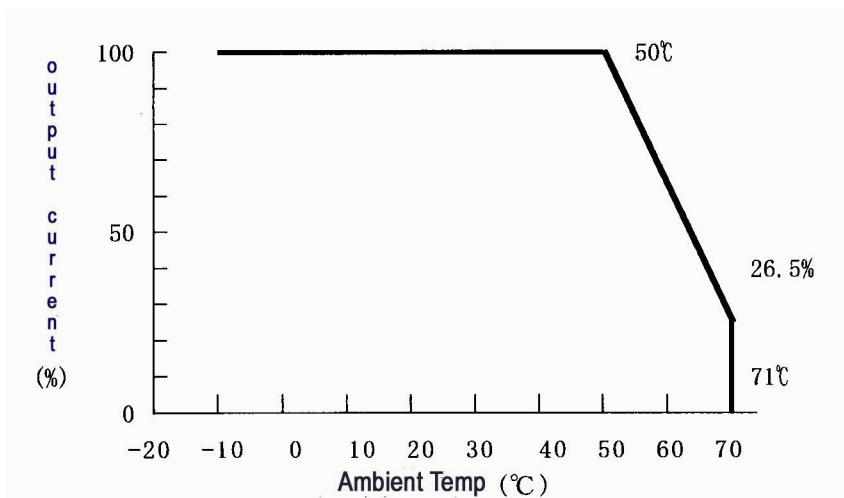
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## BLOCK DIAGRAM

## DERATING CURVE



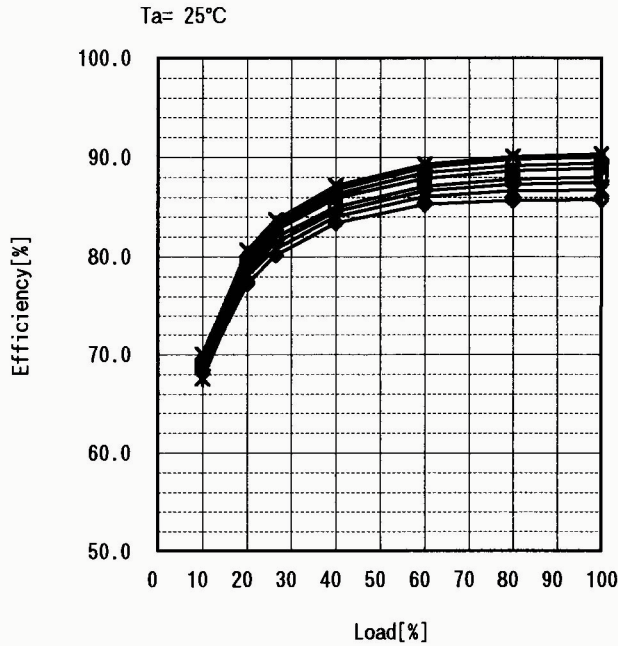


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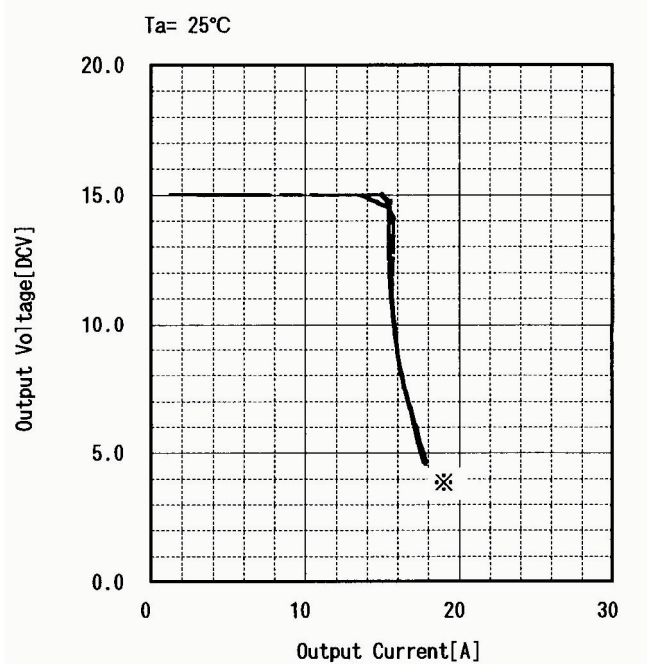
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## EFFICIENCY CURVE



## OCP CURVE



**NHD15SX-U at 25°C**

