



# ETA-USA

## HIGH QUALITY SWITCHING POWER SUPPLIES

AC/DC SWITCHING POWER SUPPLY  
SINGLE CHANNEL OUTPUT  
15 WATTS  
UNIVERSAL INPUT

### ESS15 SERIES



General Description

**ES Series**

ESS15 15W      ESS75 75W  
ESS30 30W      ESS100 100W  
ESS50 50W      ESS150 150W

**Closed Frame**

Features
1. Smaller than competitors by 15-20%
2. Operating temp shows full load at 50° C (122° F), can operate at temperatures up to 71°C
3. Five-year guarantee
4. Over-current protection
5. Over-voltage protection
6. Can meet medical and appliance standards
7. Low leakage < 500µA

Application	
Broad needs	
Input	
Input Voltage	AC100~240V
Input Voltage Range:	AC85~264V; (DC110~370V) with 70V derating possibility
Frequency:	50/60 Hz
Frequency Range:	47~440 Hz
Phase:	Single
Inrush Current:	*1, *4 14A (Typ.) at AC100VAC 28A (Typ.) 200VAC



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Output Characteristic	Unit	Models						
		ESS15-3.3	ESS15-05	ESS15-12	ESS15-15	ESS15-24	ESS15-36	ESS15-48
Output Voltage	Vdc	3.3	5.0	12	15	24	36	48
Output Current	A	3	3	1.3	1	0.7	0.4	0.33
Ripple & Noise(max)	mVpp	120	120	150	150	150	250	250
Voltage Adjust Range	V	2.97~3.63	4.50~5.50	10.8~13.2	13.5~16.5	21.6~26.4	32.4~39.6	43.2~52.8
Rise time	mS	20 mS max						
Hold up time	mS	20 mS max.						
<b>Regulation</b>								
a. Line Regulation [max]	mV	20	20	48	60	96	144	192
b. Load Regulation	mV	40	40	100	120	150	240	240
c. Temperature Coefficient	0 to 50°C	50	50	120	150	240	360	480
	-10 to 0°C	60	60	150	180	290	450	600
d. Drift(maximum)	mV	20	20	48	60	96	144	192
<b>Efficiency *1</b>	<b>%</b>	<b>At AC100V 75%-85.5%</b> <b>At AC 200V 75%-87.5%</b>						
<b>Power Factor *1</b>		<b>No power factor needed</b>						



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Environmental Specification	
Operating Temperature*3	-10 to +71 °C
Operating Humidity	20~90% RH non condensing
Storage Temperature	-30 to +85 °C
Storage Humidity	10~95% RH
Withstanding Voltage	Primary-Secondary AC3,000V for 1minute Primary-Frame Ground AC2,500V for 1minute Secondary-Frame Ground AC1,000V for 1minute *Sensory Current: Secondary Frame Ground (20[mA])/Others (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> ,30 minute cycle each along X,Y,Z axes(non-operating)
Shock	196 m/s <sup>2</sup> on x,y,z axis
Cooling	Convection
Leakage current	500μA
MTBF	>360,000 hours
Environmental Agencies	
Line Conducted Noise [EMI]	Built to meet FCC-B, VCCI-B, CISPR22-B, EN55022-B
Line Harmonic Distortion/Current	Not available
Safety	UL60950-1 1st ed. , CAN/CSA C22.2 No.60950-1-03 Approved UL508 17th ed. , CAN/CSA C22.2 No.107.1-01 Approved EN60950-1:2001+A11:2004 Approved CE Marking : EN60950-1:2001+A11:2004 (LVD) Declared
Function/Protection	
Over current Protection	Operate at 105% min of rated current, automatic return
Over voltage Protection	Input reentry at shutdown
Remote Sense	Not Available
Remote Control	Not Available
Series Operation	Available
Parallel Operation	Not available (N+1 application is possible by diode-OR)
Driving Indicator	Power Source on LED indication; Green
Mechanical	
Dimension [mm]	33.5W × 86.5L × 68H
Weight [g] (typical)	200g

Conditions:

- \*1 Rated input and Rated output
- \*2 at Output current quick change 25% to 75%
- \*3 At 100% load (convection cooling)
- \*4 Cold start at 25 °C Ambient temp.



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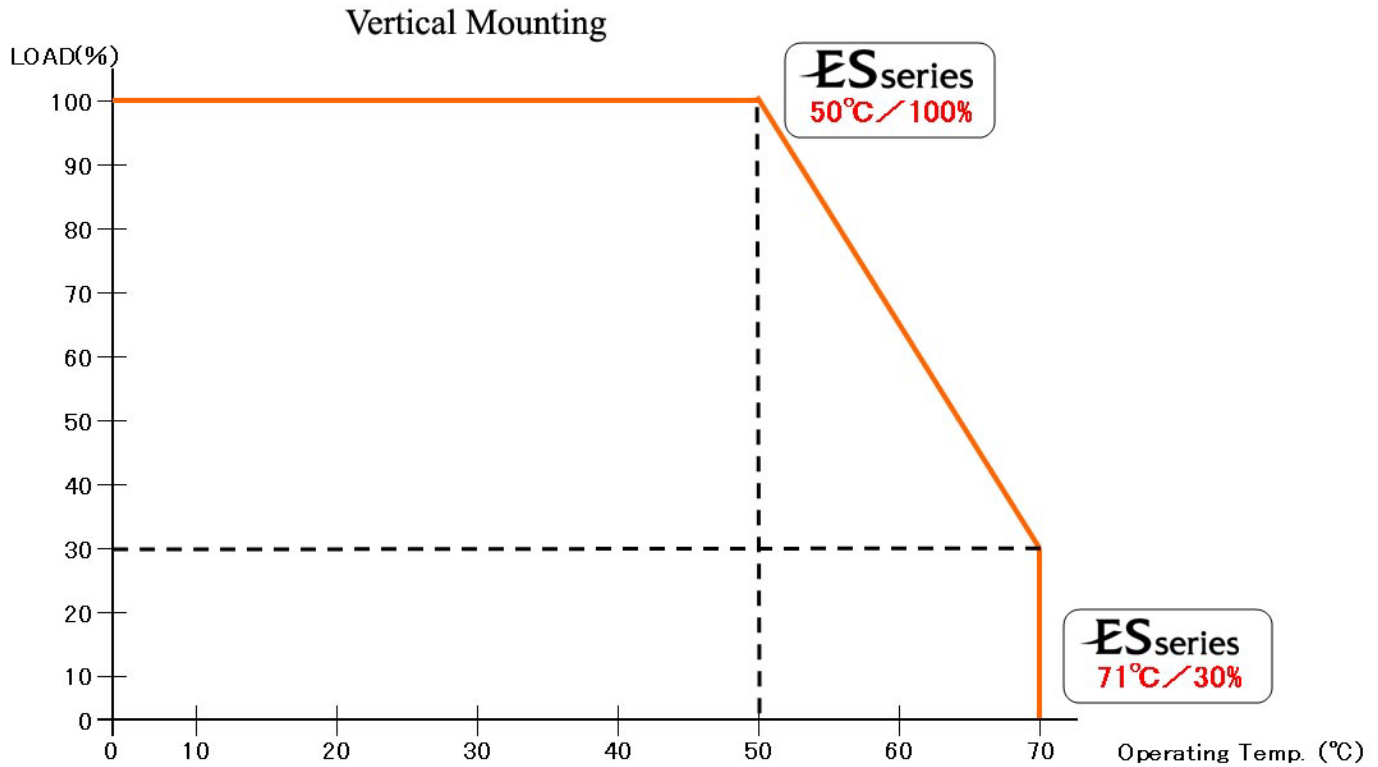
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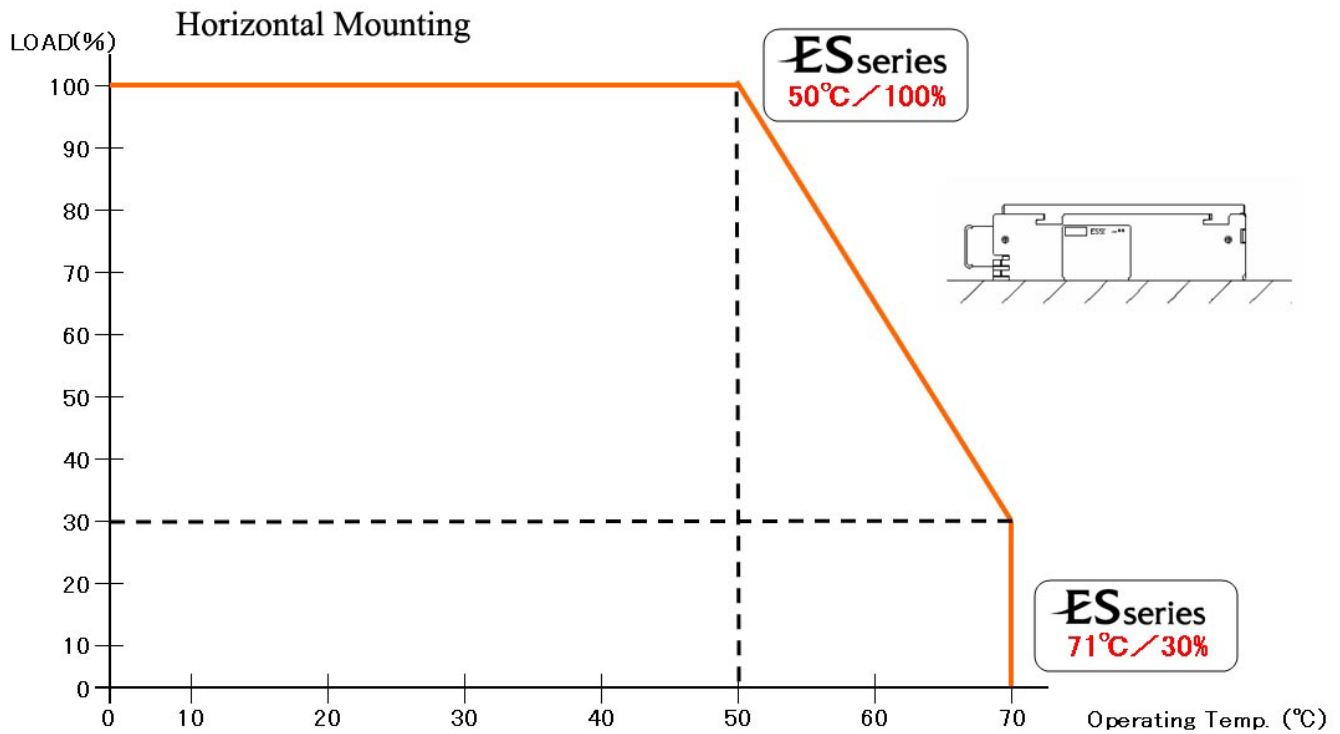
## Derating Curves



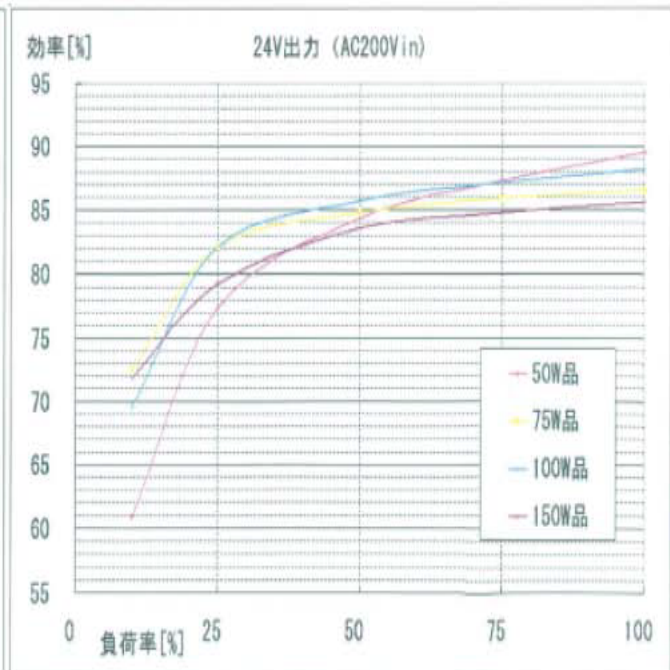
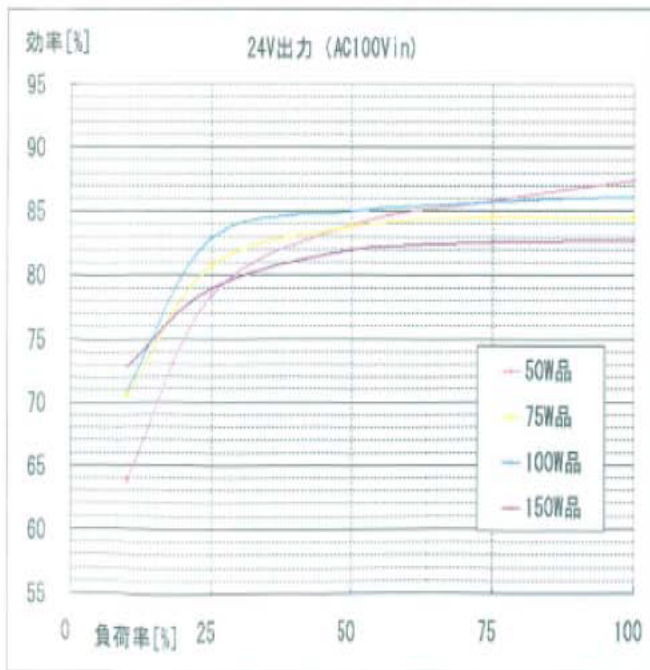


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### Efficiency Curves

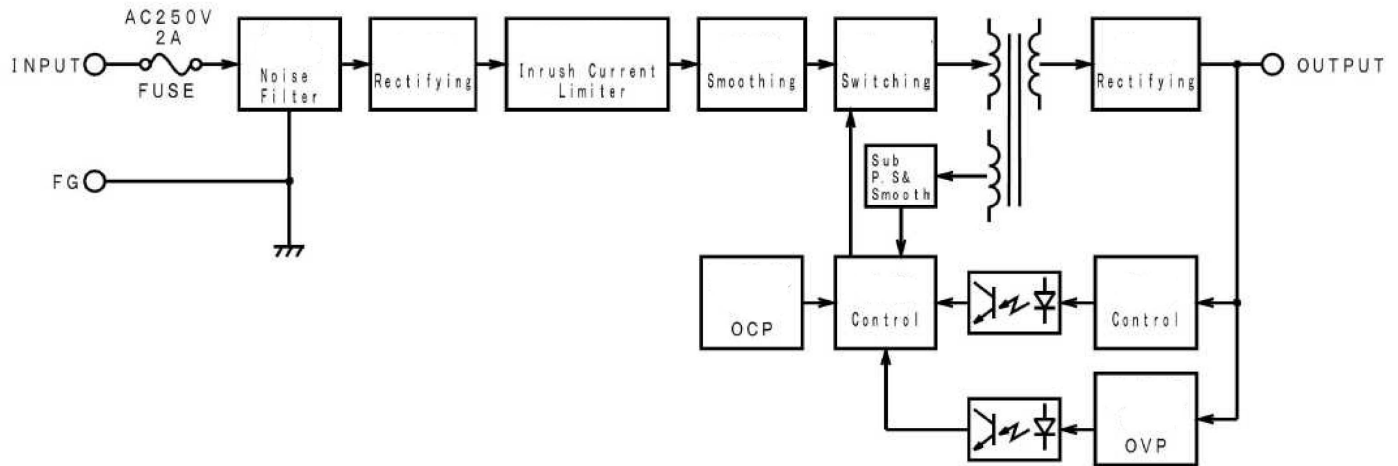




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## Block Diagram



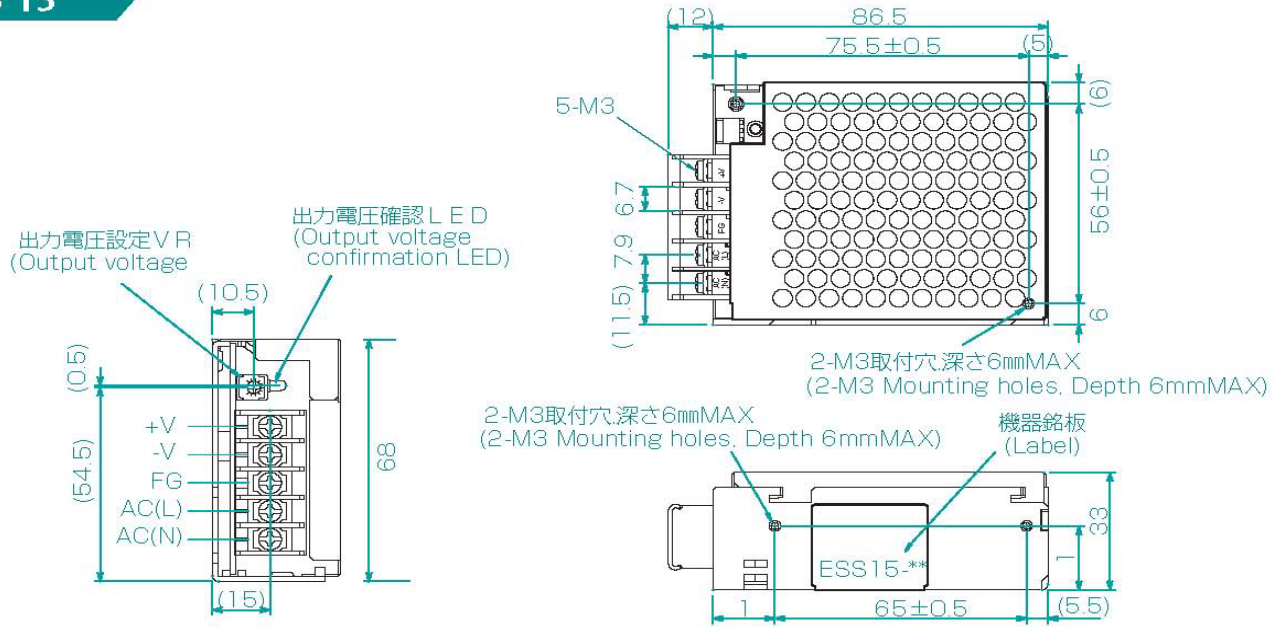


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## HIGH QUALITY SWITCHING POWER SUPPLIES

### Mechanical Drawings

#### ESS 15



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