

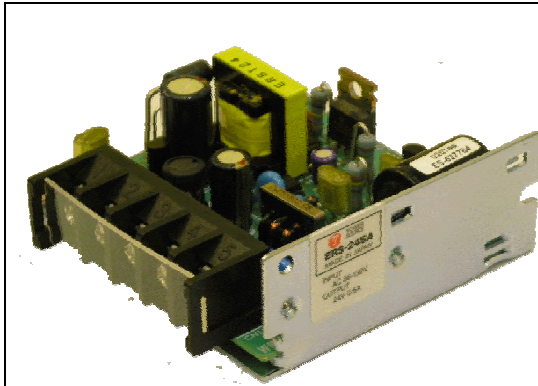


# ETA-USA

## HIGH QUALITY SWITCHING POWER SUPPLIES

AC/DC SWITCHING POWER SUPPLY  
 INPUT: 170-264VAC  
 SINGLE OUTPUT  
 10 WATTS

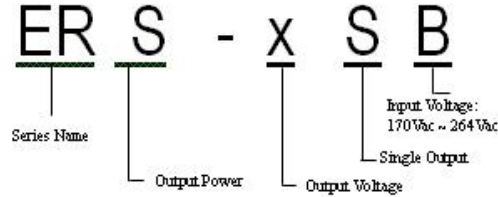
# ERS-SB SERIES



Dimension: 74Wx68Lx27H [mm]

### General Description

ER-Series are open frame, low cost switcher, with high efficiency. 65 different models are available from low to medium power. Low power modules use a simple RCC circuit while higher power supplies employ a forward converter.



### Options:

\* Case Cover:(add suffix:'-P') Example:  
 ERS05SA-P 74x68x27(mm)  
 -P model dimension is same as without cover model

### Features

1. Open Frame
2. Input: 100/200Vac
3. High Efficiency
4. Cost effective
5. No derating without cover and horizontal mounting
6. Over Voltage Protection
7. EMI: complies to FCC/A, FCC/B for ERD & ERE

Input Characteristics		Models				
	Unit	ERS05SB	ERS12SB	ERS15SB	ERS24SB	ERS48SB
Input Voltage	Vac	AC200V (DC260V)				
Input Voltage Range	Vdc	AC170-264V (DC220-350V)				
Input Frequency	Hz	50/60Hz				
Input Frequency Range	Hz	47-440Hz				
Inrush Current *1	A	25A (maximum) at AC100V				
Phase		Single				
Efficiency (typical) *2	%	74	76	78	79	81

Output Characteristics		Models				
	Unit	ERS05SB	ERS12SB	ERS15SB	ERS24SB	ERS48SB
Output Voltage	Vdc	5	12	15	24	48
Output Current	A	2.0	0.9	0.7	0.5	0.25
Voltage Tolerance	V	±5% of Rated Output Voltage (at no load within the input range)				
Ripple and Noise(max.) *3	mV	100	170	200	290	530
<b>Regulation</b>						
a. Static Line Regulation max.	mV	25	60	75	120	240
b. Static Load Regulation max.	mV	50	120	150	240	480
c. Temperature Coefficient *4	%/°C	0.03%/°C				
d. Drift max. *5	mV	40	75	90	135	255
e. Dynamic Load Reg. typ.*6	mV	Not Specified				
f. Recovery Time *6	mS	Not Specified				
g. Rise Time	mS	300mS (maximum) at rated input/output				
h. Hold Up Time	mS	20mS (typical) at rated input/output				



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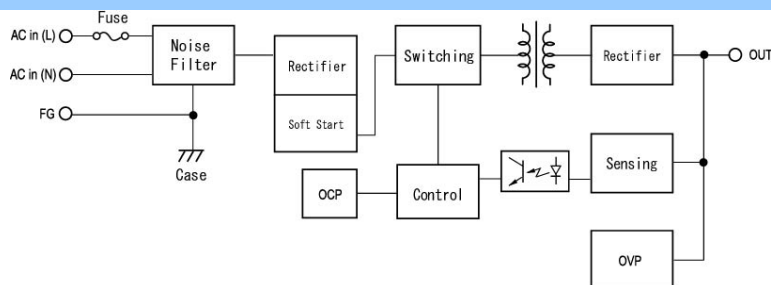
## HIGH QUALITY SWITCHING POWER SUPPLIES

Environmental Specification					
Operating Temperature	-5~+50°C				
Operating Humidity	85%RH (non-condensing)				
Storage Temperature	-20 to +85°C				
Storage Humidity	85%RH (non-condensing)				
Withstanding Voltage	Primary-Secondary AC2500V for 1minute Primary-Frame Ground AC2500V for 1minute Secondary-Frame Ground AC500V for 1minute				
Vibration	5-10Hz:10mm double amplitude, 10-55Hz:19.6m/s <sup>2</sup> , 20minutes' period for 60minutes each along X,Y,Z axes (non-operating)				
Shock	294m/s <sup>2</sup>				
Cooling	Convection				
Isolation Resistance	Primary-Secondary-Frame Ground 50MΩ (minimum) by DC500V insulation tester				
Function/Protection					
Over current Protection ≥105% of Rated Output Current [A]	Current Limiting with automatic recovery				
	2.1	0.95	0.74	0.53	0.26
Over voltage Protection ≥115% of Rated Output Voltage [V]	Zener diode clamping				
	5.75	13.8	17.25	27.6	55.2
Remote Sense	not available				
Remote On/Off	not available				
Other Specifications					
Leakage Current (typ.)	1mA (maximum) at 25°C, rated input/output and rated input frequency				
Line Conducted Noise	Built to meet FCC Part15-B Class B				
MTBF [H]	1000000				
Switching Frequency [kHz] (typical) *7	40	40	40	40	40
Mechanical Specification					
Dimension [mm]	43Wx47.5Lx18.5H [mm]				
Weight (typical)	140g/enclosed type:160g				

### Conditions:

- \*1 cold start
- \*2 at DC260V input, rated output
- \*3 measured by a bayonet probe at the output connector at a 0 to 100MHz bandwidth
- \*4 at -5 to +50°C
- \*5 only for 7hours from 1hour after switch-on at 25°C and rated input/output
- \*6 when output current changed from 25% to 75% of rated output current rapidly at AC100V input
- \*7 variable on input voltage and load conditions

## BLOCK DIAGRAM

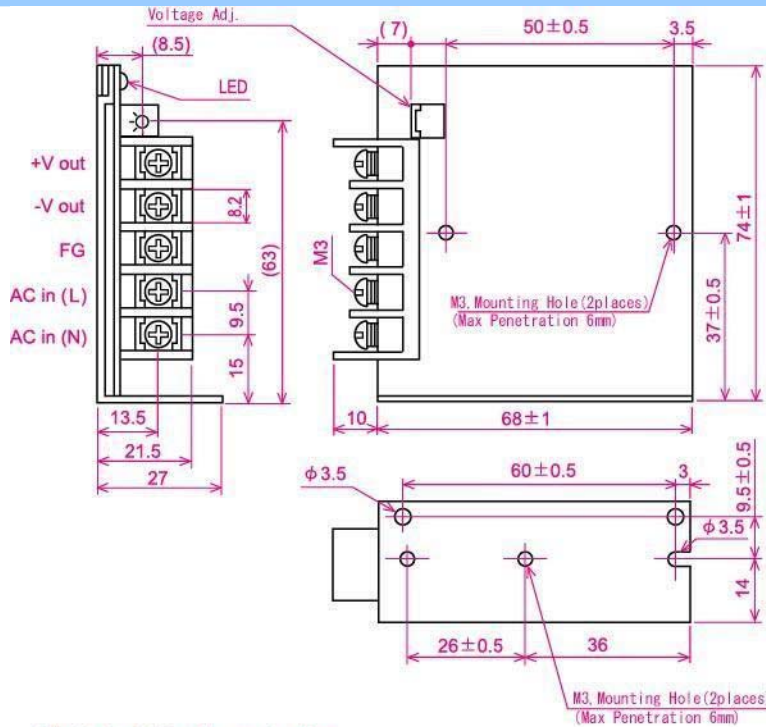




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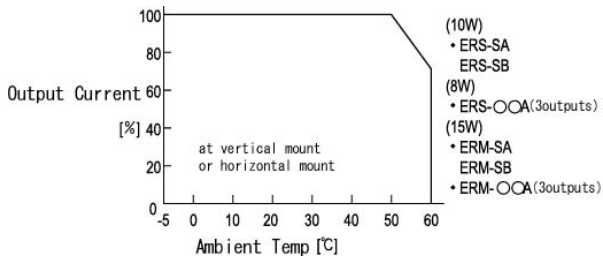
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### DIMENSION DIAGRAM

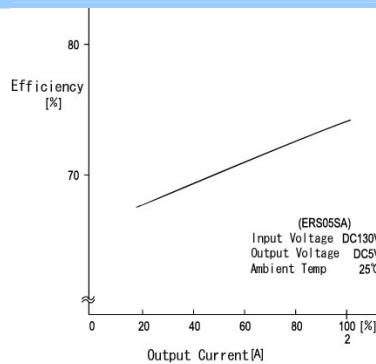


\*The height of ERS with cover is 30mm  
(3mm higher than ERS without cover)

### DERATING CURVE



### EFFICIENCY CURVE



### OCP CURVE

