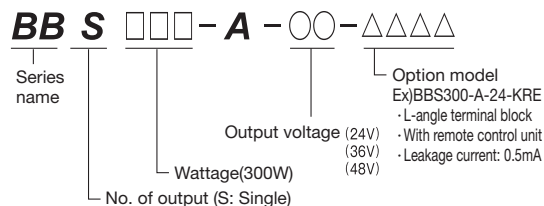


Switching power supplies



### Ordering Information



Item	Type	Description
Terminal block (horizontal)	Y	L-angle terminal block
PIN (vertical)	J	Straight type
PIN (horizontal)	K	L-angle type
Remote control	R	Turned ON by external voltage
Leakage current protection A	E	At AC240V, 0.5mA, Line Conducted Noise Class A, Ripple and Noise within 150%
Leakage current protection B	F	At AC240V, 0.15mA, Ripple and Noise within 200%

\*Standard model is provided with a straight terminal block (unless Type Y, J, or K is specified)

### Features

- Smallest among 300W-class convection cooling products in the industry
- Provides high efficiency (typically 89.0%) through adoption of synchronous rectification system
- High reliability without fan (convection cooling)
- Replaceable with existing 300W class power supply
- Harmonic current complies to IEC61000-3-2
- Approved to safety standards: UL60950-1, CSA60950-1, and EN60950-1 certified CE (LV directive) compliant
- RoHS
- Ambient temperature: 50°C, 100% load (with derating when temperature is 40°C or above)



### General Description

1. Allowable Input Voltage Range	AC85 to 264V (AC90 to 264V in certified safety standard)
2. Output Voltage Range	±10% (maximum)
3. Operating Temperature	-10 to 71 [°C], derating is required at 50 [°C] or above (see derating table)
4. Operating Humidity	20 to 90 [%RH] (non-condensing)
5. Withstanding Voltage	Input-Output: AC3000V, Input-Frame Ground: AC2500V, Output-Frame Ground: AC1000V
6. Function	Overcurrent protection, overvoltage protection, LED to confirm output ON status
7. Efficiency	88.5% (typical) (at rated input/output)

### BB Series (input voltage: AC85-264V)

300W Class

Single output

### Product Lineup

[Single output]

Wattage	Type	Models	Input voltage(AC)	Output voltage(DC)	Output current	Efficiency	Price
300W	<b>NEW</b> BBS	BBS300-A-24	85 to 264V	24V	12.5A	88.5%	¥22,800
		BBS300-A-36		36V	8.4A	89.0%	
		BBS300-A-48		48V	6.25A	89.0%	

- ◎ Option : Harness for J(WH-BBS300-J)(40 cm length)
- Harness for K(WH-BBS300-K)(40 cm length)
- Option kit (chassis + 5 screws)(WK-BBS300-C)
- Option kit (chassis + cover + 5 screws)(WK-BBS300-K)

\* Please contact us for prices of the options.

#### Note for use of AC/DC-type synchronous rectification system

- C&K Type
- No parallel connection is allowed. However, connecting two units using a diode OR connection for the purpose of redundant operation is possible.
- No series connection is allowed. However, series operation will be available if entry of current into the power supply is prevented by way of inserting a diode in series-parallel to an output terminal of the power supply.
- Capacity of external connection is not limited unless otherwise specified in overcurrent protection function (OCP) specifications. Please contact us for details in individual case.

NEW

BB series

AC/DC



General Description/Product Lineup

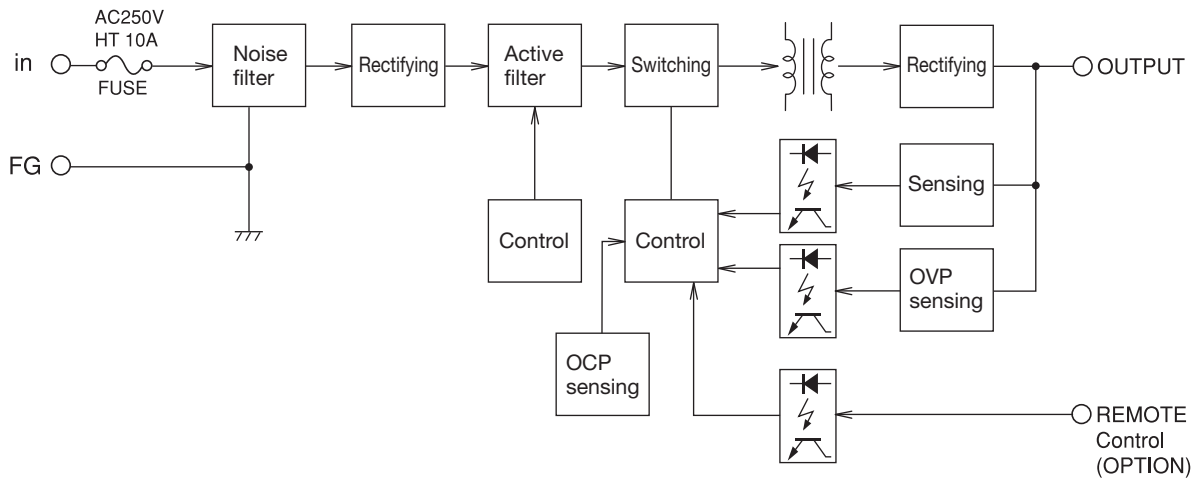
## ■ BBS300-24 Series (300W), Single Output

Specification	Model	BBS300-A-24	BBS300-A-36	BBS300-A-48
<b>Input Characteristics</b>				
Rated Input Voltage		AC100-240 [V]		
Allowable Input Voltage Range		AC85 to 264[V] (DC120 to 350) (AC90-264[V] in certified safety standard)		
Rated Input Frequency		50/60 [Hz]		
Input Frequency Range		47 to 63 [Hz]		
Phase		1[Φ]		
Inrush Current	*1	20[A] or less at AC100[V] input, 40[A] or less at AC240[V] input		
Efficiency (at AC100V/240V input)		88.5 [%] Typ./90 [%] Typ.	89.0 [%] Typ./90.5 [%] Typ.	89.0 [%] Typ./90.5 [%] Typ.
Power Factor (at AC100V/240V input)		0.98 Typ./0.92 Typ.	0.99 Typ./0.96 Typ.	0.98 Typ./0.92 Typ.
<b>Output Characteristics</b>				
Output Voltage [V]		+24	+36	+48
Output Current [A]		12.5	8.4	6.25
Voltage Adjust Range [%] (maximum)		+21.6 to 26.4	+32.4 to 39.6	+43.2 to 52.8
Ripple and Noise [mVp-p] (maximum)	*2	300(25 to 40°C)/340(-10 to 25°C)	460 (25 to 40°C)/460(-10 to 25°C)	580(25 to 40°C)/580(-10 to 25°C)
<b>Regulation</b>				
a. Static Line Regulation [mV] (maximum)		192	288	384
b. Static Load Regulation [mV] (maximum) *3		216	324	432
c. Ambient temperature [mV] (maximum) *4		360	540	720
d. Drift [mV] (maximum) *5		135	195	255
e. Dynamic Load Regulation [mV] (typical) *6		±1200	±1800	±2400
f. Recover Time of Dynamic Load *6		30	45	60
Rise Time [ms] (maximum)		1000		
Hold Up Time [ms] (minimum)		20 at rated output and 90[V] input		
<b>Optional Functions</b>				
Overcurrent Protection		Activated at 105% of the rated current, automatic recovery		
Overvoltage Protection		Output shutdown, recovery upon input reentry (after waiting at least 3 minutes)		
Input Fuse		Built-in (high breaking, AC250[V], 10[A])		
<b>Environmental Specification</b>				
Operating Temperature		-10 to +60[°C] (non-condensing)		
Load Derating [mA/°C]		437.5 (40[°C] or above)	294.0 (40[°C] or above)	218.75 (40[°C] or above)
Storage Temperature		-20 to +80[°C] without thermal shock		
Storage Humidity		10 to 90[%RH] (non-condensing)		
Operating Humidity		20 to 90[%RH] (non-condensing)		
Withstanding Voltage Primary - Secondary		AC3000[V] for 1 minute at room temperature/humidity, faradic current=20[mA]		
Primary - Frame Ground		AC2500[V] for 1 minute at room temperature/humidity, faradic current=20[mA]		
Secondary - Frame Ground		AC1000[V] for 1 minute at room temperature/humidity, faradic current=20[mA]		
Isolation Resistance Primary - Secondary - Frame Ground		DC500[V], 100[MΩ] or above for each, at room temperature/humidity		
Vibration		5-10Hz: 10[mm] double amplitude, 10-55Hz: acceleration 19.6[m/s <sup>2</sup> ], capable of withstanding vibration for 60minutes along X, Y, and Z axes		
Shock		Impact force:196 [m/S <sup>2</sup> ]		
Leakage Current		1.2[mA] (maximum) at 25[°C] *7		
Cooling		Convection cooling		
<input type="checkbox"/> Safety		UL60950-1, CSA60950-1, EN60950-1 certified CE (LV directive) compliant, complied with Section 2 of ordinance of Electrical Appliances and Material Safety Act		
<input type="checkbox"/> Appearance/Weight		Board type /650 [g]		
<input type="checkbox"/> Ref. MTBF [H]		130,000		

Conditions:

- \*1 : Since inrush current is suppressed by a thermistor, the above values will not be met when input is reentered during operation.
- \*2 : Measured by a bayonet probe with 100MHz bandwidth synchroscope at the end of a pair of 5[cm] long load wires from power supply terminated with a 100[μF] electrolytic capacitor and a 0.1[μF] film capacitor
- \*3 : When output current changed from 0 to rated current
- \*4 : At between -10 and +50[°C]
- \*5 : For 8 hour period after 1 hour warm-up at 25[°C] and rated input/output
- \*6 : When output current changed within allowable input voltage range, between 25% and 75% of rated output current rapidly
- \*7 : Low-leakage A: 0.5[mA] (maximum), low-leakage B: 0.15[mA] (maximum)

## ■ BBS300-A-○○Series, Single Output (300W)



NEW

BB series

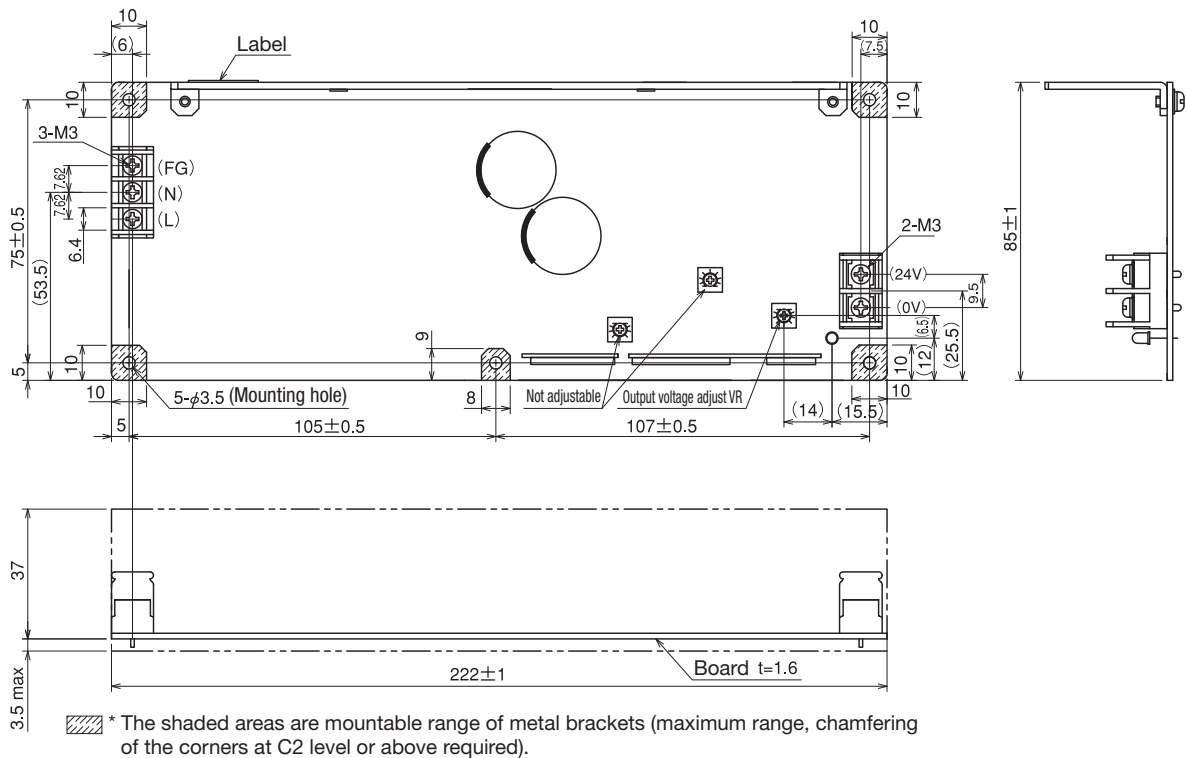
AC/DC



Specification list/Block Diagram/Dimension Diagram

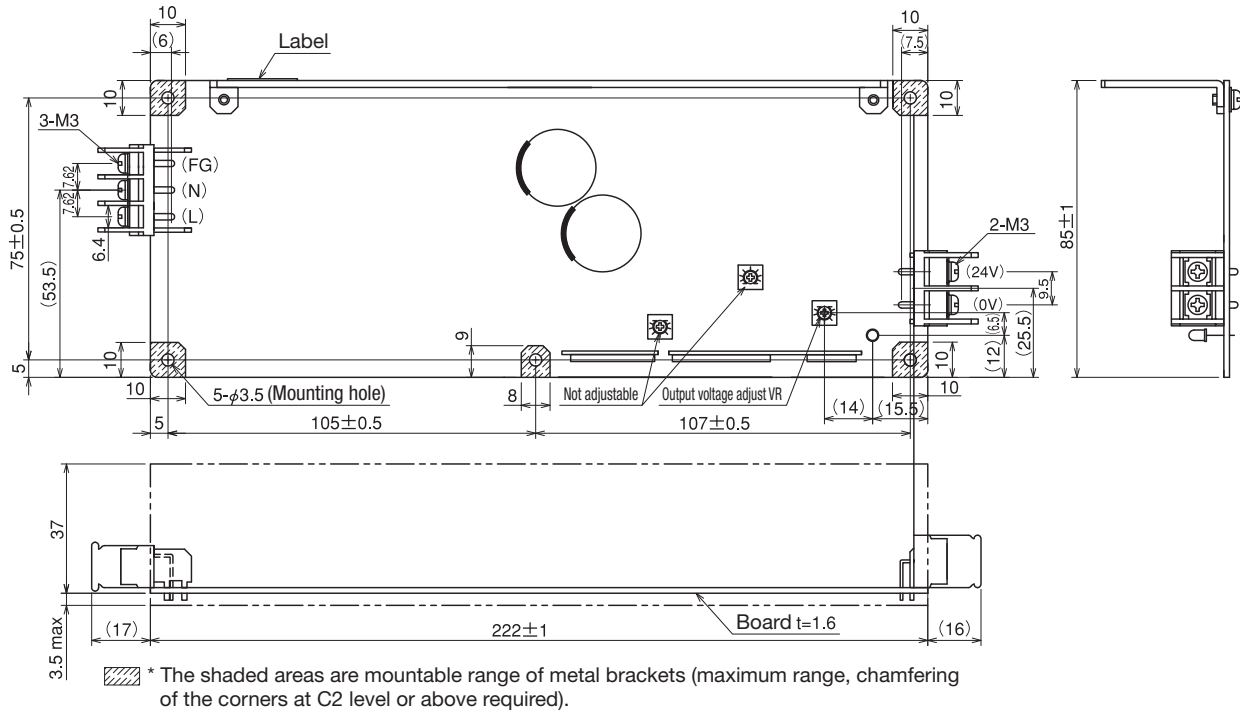
## ■ BBS300-A-○○Series, Single Output

BBS300-A-○○(straight terminal block type) **Standard**



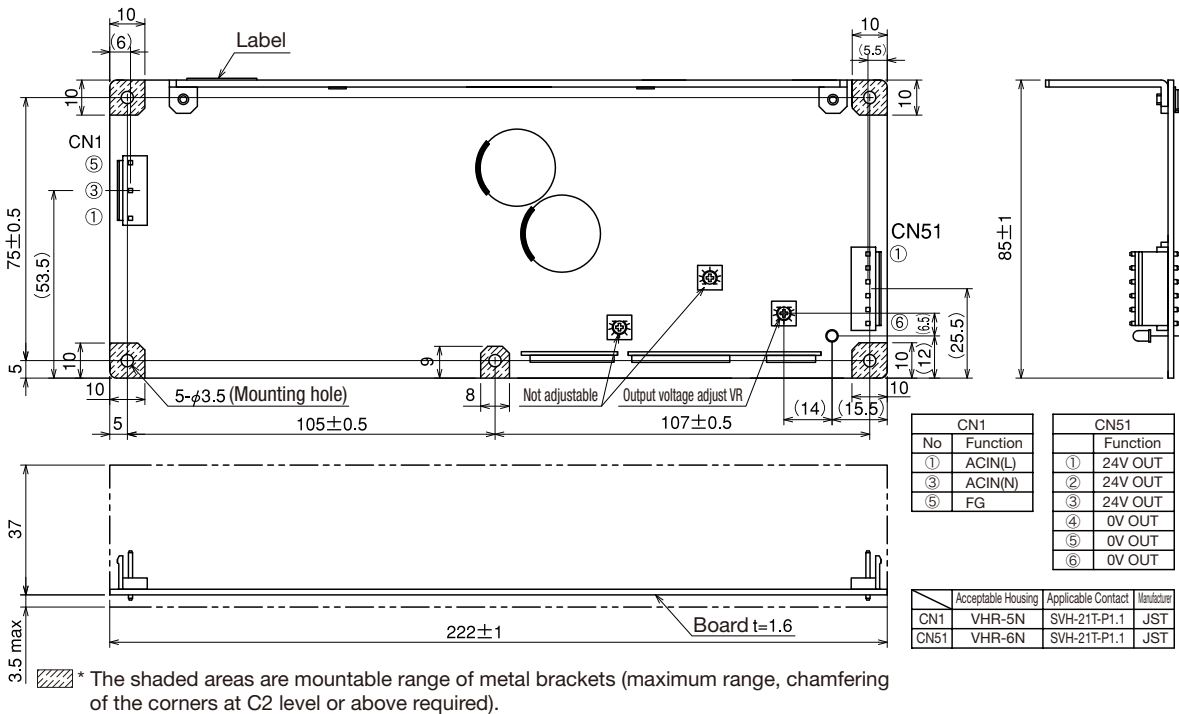
## ■ BBS300-A-○○Series, Single Output

BBS300-A-○○(L-angle terminal block type) Option Type : -Y



## ■ BBS300-A-○○ Series, Single Output

BBS300-A-○○ (straight connector type) Option Type : -J



CN1	
No	Function
①	ACIN(L)
③	ACIN(N)
⑤	FG

CN51	
No	Function
①	24V OUT
②	24V OUT
③	24V OUT
④	0V OUT
⑤	0V OUT
⑥	0V OUT

	Acceptable Housing	Applicable Contact	Manufacturer
CN1	VHR-5N	SVH-21T-P1.1	JST
CN51	VHR-6N	SVH-21T-P1.1	JST

\* Please handle the connectors with care not to give them excessive stress when they are inserted or removed.

