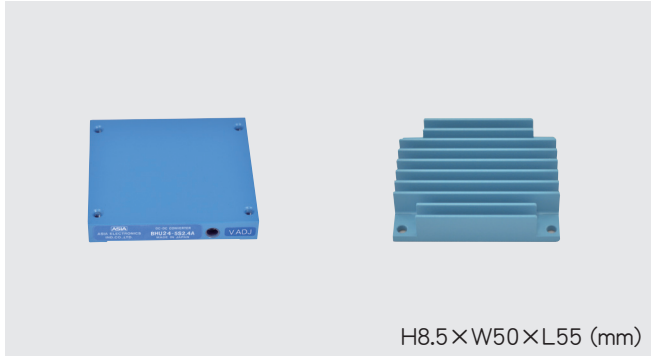


BHU SERIES

7~15W DC/DC CONVERTERS Single Output & Dual Outputs



H8.5×W50×L55 (mm)

Features

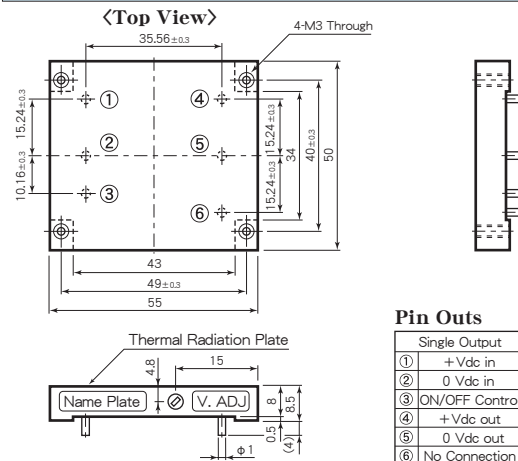
- Low Profile 8.5mm
 - Built-in Input Filter
 - Input-Output Isolation
 - High Efficiency 77~88%
 - Wide Input Voltage Range
 - High Reliability
 - 6 Sided Metal Shielding
 - Remote ON/OFF Control
 - Adjustable Output Volt. $\pm 5\%$
 - Output Over Voltage Protection 115~140% Operation
 - Operating Ambient Temperature $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
 - Max. Case Temperature $+105^{\circ}\text{C}$
 - Conformity to RoHS Directive
 - Not built-in aluminum and tantalum electrolytic capacitor
- 薄型 8.5mm
 - 入力フィルタ内蔵
 - 入出力間絶縁
 - 高効率 77~88%
 - 広範囲な入力電圧
 - 高信頼性
 - 6面メタルシールド
 - リモートON/OFFコントロール
 - 可変出力電圧 $\pm 5\%$
 - 出力過電圧保護回路内蔵 115~140% 動作
 - 動作周囲温度 $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
 - 最大ケース温度 $+105^{\circ}\text{C}$
 - RoHS指令対応
 - アルミ電解コンデンサ及びタンタルコンデンサ不使用

General Characteristics

(at $T_a : 25^{\circ}\text{C}$, Full Load, Nominal V_{in})

- Input Voltage, Range DC5, 12, 24, 48V (See Table 1)
- Output Voltage, Current See Table 1
- Output Voltage Range $\pm 5\%$ Adjustable
- Efficiency See Table 1
- Line Regulation $\pm 0.3\%$ max. (at V_{in} Range)
- Load Regulation Single : $\pm 0.5\%$ max. (0~100% Load)
Dual : $\pm 3\%$ max. (10~100% Load)
(3% V_{in}) V_{p-p} max.
40mV V_{p-p} max.
100mV V_{p-p} max. (48V V_{out} only)
100mV V_{p-p} max.
200mV V_{p-p} max. (48V V_{out} only)
- Reflected Input Ripple, Noise 100mV V_{p-p} max. (48V V_{out} only)
- Output Ripple 100mV V_{p-p} max. (48V V_{out} only)
- Short Circuit Protection Built-in, Auto-restart (See Fig. 2)
- Over Voltage Protection 115~140% Output Voltage
ON : Short or 0~0.8V
OFF : Open or 2~10V
(Between pin ② ~ ③)
- Temperature Coefficient 0.02%/ $^{\circ}\text{C}$ max.
- Operating Ambient Temp. $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ (See Fig. 1)
 $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$ (5V V_{in} only)
- Max. Case Temperature $+105^{\circ}\text{C}$
- Storage Temperature $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$
- Isolation Voltage AC1500V one minute
(Input-Output-Case)
100M Ω min. (at DC1000V)
(Input-Output-Case)
- Isolation Impedance 100M Ω min. (at DC1000V)
(Input-Output-Case)
- Weight Main Body : 60g max.
Heat Sink : 40g max.
- Humidity 20~95% RH
- Shock 490m/s² (11msec 3directions)
- Vibration 10~55Hz 98m/s²
(30minutes 3directions)
- Surface Structure 6 Sided Aluminum Case
- Soldering Conditions Soldering DIP
Soldering iron
260 $^{\circ}\text{C}$, for 15 seconds max.
360 $^{\circ}\text{C}$, for 5 seconds max.
- MTBF Single : 1,000,000H
Dual : 700,000H
($T_a : 25^{\circ}\text{C}$, 80% Load, Nominal V_{in})
- Warranty 5 years

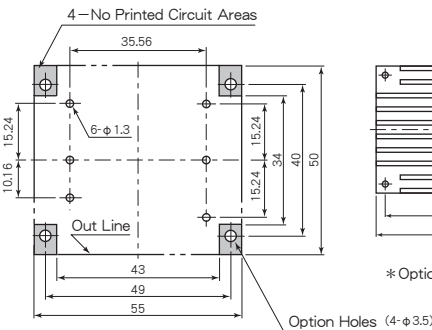
Pin Outs & Dimensions ($\pm 0.5\text{mm}$)



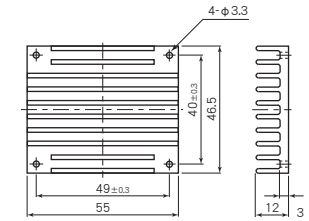
Pin Outs

Single Output		Dual Outputs	
①	+Vdc in	①	+Vdc in
②	0 Vdc in	②	0 Vdc in
③	ON/OFF Control	③	ON/OFF Control
④	+Vdc out	④	+Vdc out
⑤	0 Vdc out	⑤	Common
⑥	No Connection	⑥	-Vdc out

Holes on PCB (Top View)



Option Heat Sink



* Option Heat Sink Model : A4-3080

Selection Guide

Table 1

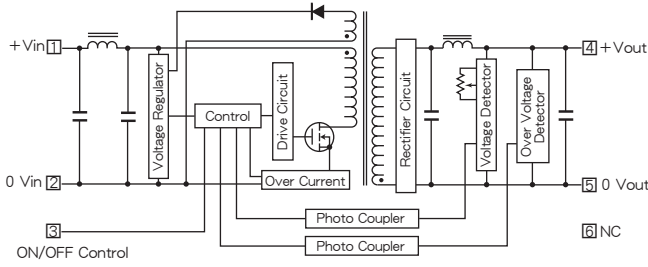
Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical) (%)
BHU 5-3.3 S 2 A	5 (4.5~9)	3.3	2	83
BHU 5-5 S 2 A		5	2	82
BHU 5-6 S 1.8 A		6	1.8	82
BHU 5-12 S 1 A		12	1	84
BHU 5-1.5 S 0.8 A		15	0.8	83
BHU 5-2.4 S 0.5 A		24	0.5	83
BHU 5-2.8 S 0.4 A		28	0.4	83
BHU 5-5 D 1 A		± 5	± 1	77
BHU 5-12 D 0.5 A		± 12	± 0.5	81
BHU 5-15 D 0.4 A		± 15	± 0.4	81
BHU 12-3.3 S 2.4 A	12 (8~18)	3.3	2.4	83
BHU 12-5 S 2.4 A		5	2.4	85
BHU 12-6 S 2.2 A		6	2.2	85
BHU 12-12 S 1.3 A		12	1.3	85
BHU 12-1.5 S 1 A		15	1	85
BHU 12-2.4 S 0.65 A		24	0.65	85
BHU 12-2.8 S 0.5 A		28	0.5	85
BHU 12-4.8 S 0.3 A		48	0.3	85
BHU 12-5 D 1.2 A		± 5	± 1.2	78
BHU 12-12 D 0.65 A		± 12	± 0.65	83
BHU 12-15 D 0.5 A	± 15	± 0.5	83	
BHU 24-3.3 S 2.4 A	24 (16~36)	3.3	2.4	84
BHU 24-5 S 2.4 A		5	2.4	86
BHU 24-6 S 2.2 A		6	2.2	86
BHU 24-12 S 1.3 A		12	1.3	86
BHU 24-1.5 S 1 A		15	1	86
BHU 24-2.4 S 0.65 A		24	0.65	86
BHU 24-2.8 S 0.5 A		28	0.5	86
BHU 24-4.8 S 0.3 A		48	0.3	85
BHU 24-5 D 1.2 A		± 5	± 1.2	78
BHU 24-12 D 0.65 A		± 12	± 0.65	83
BHU 24-15 D 0.5 A	± 15	± 0.5	83	
BHU 48-3.3 S 2.4 A	48 (32~76)	3.3	2.4	83
BHU 48-5 S 2.4 A		5	2.4	86
BHU 48-6 S 2.2 A		6	2.2	86
BHU 48-12 S 1.3 A		12	1.3	88
BHU 48-1.5 S 1 A		15	1	88
BHU 48-2.4 S 0.65 A		24	0.65	86
BHU 48-2.8 S 0.5 A		28	0.5	86
BHU 48-5 D 1.2 A		± 5	± 1.2	80
BHU 48-12 D 0.65 A		± 12	± 0.65	85
BHU 48-15 D 0.5 A		± 15	± 0.5	85

* 上記仕様以外にも対応可能ですのでお問い合わせ下さい。
Please consult with us about other specification.

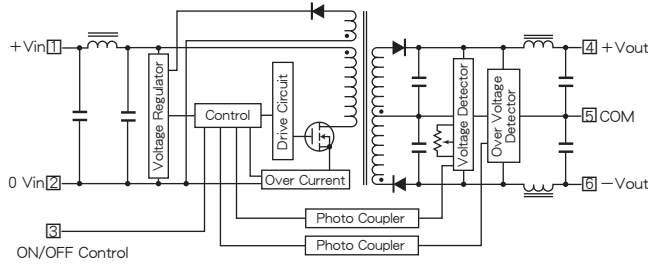
BHU SERIES DATA SHEET

Block Diagram

Single Output



Dual Outputs



Characteristic Curves

Fig. 1 Derating Curve

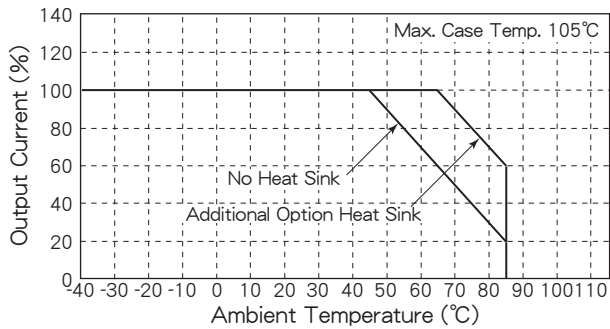


Fig. 2 Short Circuit Operating Area

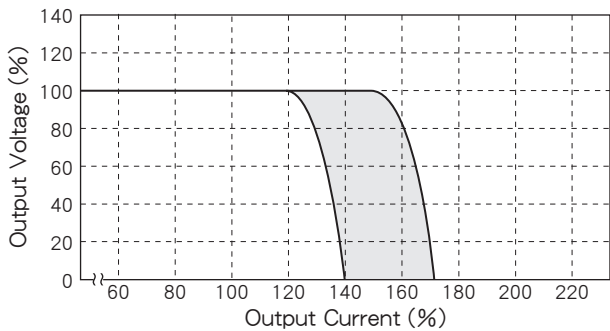


Fig. 3 Temperature Characteristic on Case Surface

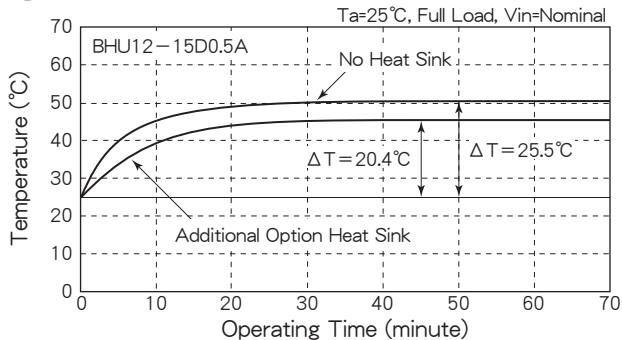


Fig. 4 Efficiency vs. Output Current

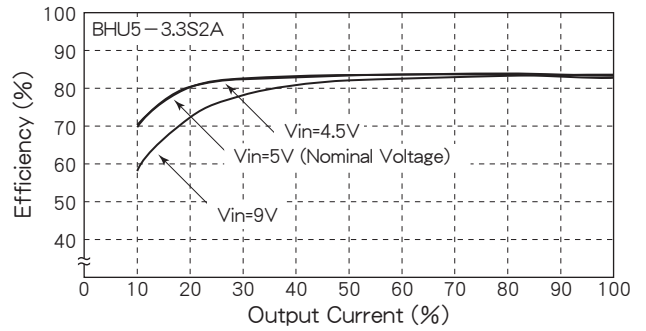


Fig. 5 Efficiency vs. Output Current

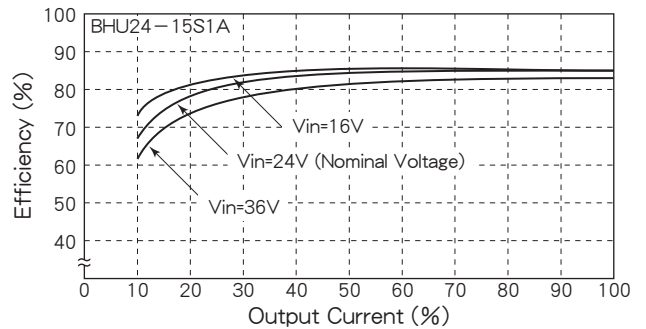


Fig. 6 Efficiency vs. Output Current

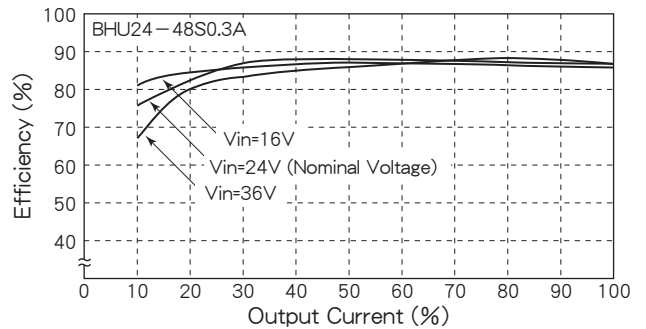


Fig. 7 Efficiency vs. Output Current

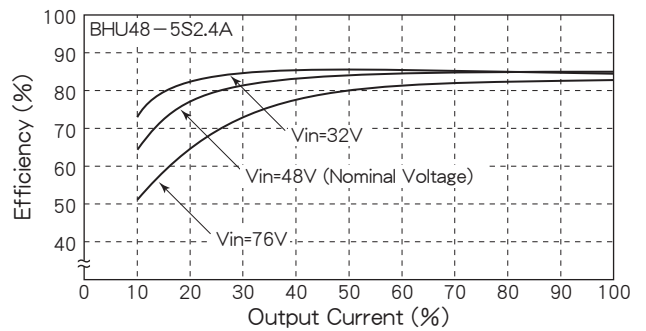


Fig. 8 Efficiency vs. Output Current

