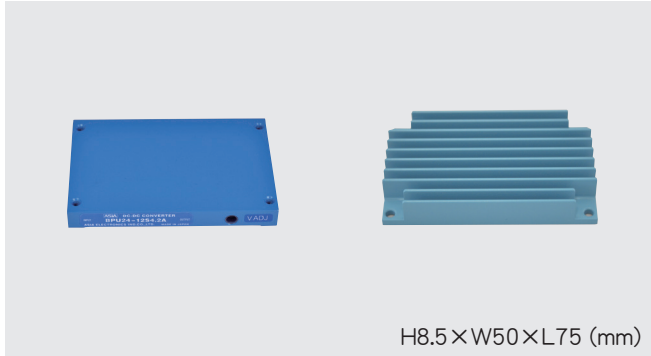


# BPU SERIES

## 20~50W DC/DC CONVERTERS Single Output & Dual Outputs



### Features

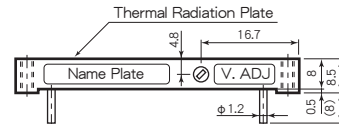
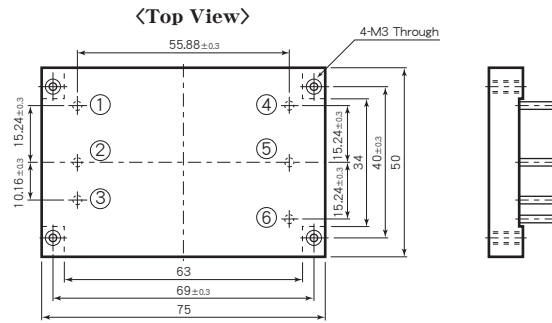
- Low Profile 8.5mm
  - 6 Sided Metal Shielding
  - Built-in Input Filter
  - Wide Input Voltage Range
  - Input-Output Isolation
  - Adjustable Output Volt.  $\pm 5\%$
  - High Efficiency 81~90%
  - Remote ON/OFF Control
  - Input Low Voltage Protection
  - Input Over Voltage Protection
  - Output Over Voltage Protection 115~140% Operation
  - Thermal Protection +110°C~+120°C
  - Operating Ambient Temperature -40°C~+85°C
  - Max. Case Temperature +105°C
  - High Reliability
  - Conformity to RoHS Directive
  - Not built-in aluminum and tantalum electrolytic capacitor
- 薄型 8.5mm
  - 6面メタルシールド
  - 入力フィルタ内蔵
  - 広範囲な入力電圧
  - 入出力間絶縁
  - 可変出力電圧  $\pm 5\%$
  - 高効率 81~90%
  - リモートON/OFFコントロール
  - 入力低電圧保護回路内蔵
  - 入力過電圧保護回路内蔵
  - 出力過電圧保護回路内蔵 115~140% 動作
  - 過熱保護回路内蔵 +110°C~+120°C
  - 動作周囲温度 -40°C~+85°C
  - 最大ケース温度 +105°C
  - 高信頼性
  - 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 Ta : 25°C, Full Load, Nominal Vin)

- Input Voltage, Range DC12, 24, 48, 100V (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 Vin Range)
- Load Regulation Single :  $\pm 0.5\%$  max. (0~100% Load)  
Dual :  $\pm 3\%$  max. (10~100% Load)  
(3% Vin)/Vp-p max.  
40mVp-p max.  
100mVp-p max.
- Reflected Input Ripple, Noise
- Output Ripple
- Output Noise
- Short Circuit Protection Built-in, Auto-restart (See Fig. 2)
- Over Voltage Protection 115~140% Output Voltage
- Remote ON/OFF Control ON : Short or 0~0.8V  
OFF : Open or 2~10V  
(Between pin ② ~ ③)
- Temperature Coefficient 0.02%/°C max.
- Operating Ambient Temp. -40°C~+85°C (See Fig. 1)
- Max. Case Temperature +105°C
- Storage Temperature -40°C~+115°C
- Isolation Voltage AC1500V 1 min.  
AC2000V 1 min. (100V Vin only)  
(Input-Output-Case)
- Isolation Impedance 100M $\Omega$  min. (at DC1000V)  
(Input-Output-Case)
- Weight Main Body : 100g max.  
Heat Sink : 55g max.
- Humidity 20~95% RH
- Shock 490m/s<sup>2</sup> (11msec 3directions)
- Vibration 10~55Hz 98m/s<sup>2</sup>  
(30minutes 3directions)
- Surface Structure 6 Sided Aluminum Case
- Soldering Conditions 260°C, for 15 seconds max.  
Soldering DIP 360°C, for 5 seconds max.  
Soldering iron
- MTBF Single : 500,000H  
Dual : 600,000H  
(Ta : 25°C, 80% Load, Nominal Vin)
- Warranty 5 years

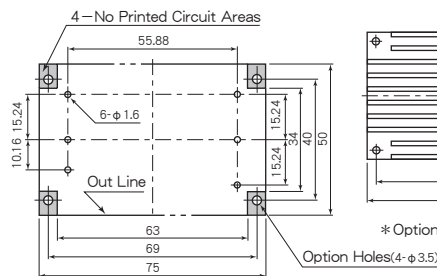
### Pin Outs & Dimensions ( $\pm 0.5$ mm)



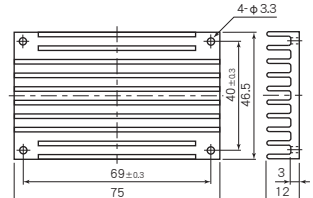
### Pin Outs

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 : A4-3079

### Selection Guide

Table 1

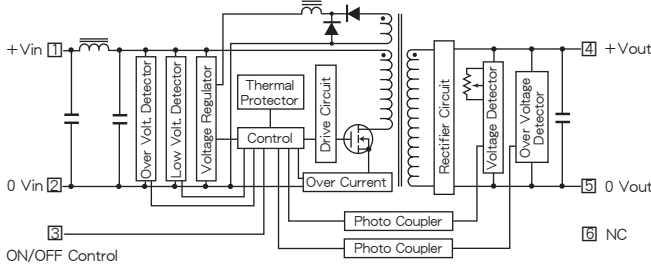
Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical)(%)		
				30% Load	80% Load	
B P U 1 2 - 3.3S 12A	12 (8~18)	3.3	12	87	85	
B P U 1 2 - 5S 10A		5	10	86	89	
B P U 1 2 - 6S 8.4A		6	8.4	87	87	
B P U 1 2 - 12S 4.2A		12	4.2	84	88	
B P U 1 2 - 15S 3.3A		15	3.3	83	88	
B P U 1 2 - 24S 2.1A		24	2.1	83	88	
B P U 1 2 - 3.3D 3A		$\pm 3.3$	$\pm 3$	80	81	
B P U 1 2 - 5D 3A		$\pm 5$	$\pm 3$	80	82	
B P U 1 2 - 12D 1.5A		$\pm 12$	$\pm 1.5$	81	83	
B P U 1 2 - 15D 1.2A		$\pm 15$	$\pm 1.2$	81	84	
B P U 2 4 - 3.3S 12A		24 (16~36)	3.3	12	84	85
B P U 2 4 - 5S 10A			5	10	85	88
B P U 2 4 - 6S 8.4A	6		8.4	87	89	
B P U 2 4 - 12S 4.2A	12		4.2	84	89	
B P U 2 4 - 15S 3.3A	15		3.3	85	89	
B P U 2 4 - 24S 2.1A	24		2.1	84	89	
B P U 2 4 - 3.3D 3A	$\pm 3.3$		$\pm 3$	80	81	
B P U 2 4 - 5D 3A	$\pm 5$		$\pm 3$	80	82	
B P U 2 4 - 12D 1.5A	$\pm 12$		$\pm 1.5$	81	84	
B P U 2 4 - 15D 1.2A	$\pm 15$		$\pm 1.2$	82	85	
B P U 4 8 - 3.3S 12A	48 (32~72)		3.3	12	85	86
B P U 4 8 - 5S 10A			5	10	85	88
B P U 4 8 - 6S 8.4A		6	8.4	85	88	
B P U 4 8 - 12S 4.2A		12	4.2	85	88	
B P U 4 8 - 15S 3.3A		15	3.3	85	90	
B P U 4 8 - 24S 2.1A		24	2.1	85	90	
B P U 4 8 - 3.3D 3A		$\pm 3.3$	$\pm 3$	80	81	
B P U 4 8 - 5D 3A		$\pm 5$	$\pm 3$	80	82	
B P U 4 8 - 12D 1.5A		$\pm 12$	$\pm 1.5$	81	84	
B P U 4 8 - 15D 1.2A		$\pm 15$	$\pm 1.2$	82	85	
B P U 100 - 3.3S 12A		100 (64~144)	3.3	12	84	87
B P U 100 - 5S 10A			5	10	86	89
B P U 100 - 6S 8.4A	6		8.4	84	89	
B P U 100 - 12S 4.2A	12		4.2	85	90	
B P U 100 - 15S 3.3A	15		3.3	85	90	
B P U 100 - 24S 2.1A	24		2.1	85	90	
B P U 100 - 3.3D 3A	$\pm 3.3$		$\pm 3$	80	81	
B P U 100 - 5D 3A	$\pm 5$		$\pm 3$	80	82	
B P U 100 - 12D 1.5A	$\pm 12$		$\pm 1.5$	81	84	
B P U 100 - 15D 1.2A	$\pm 15$		$\pm 1.2$	82	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.

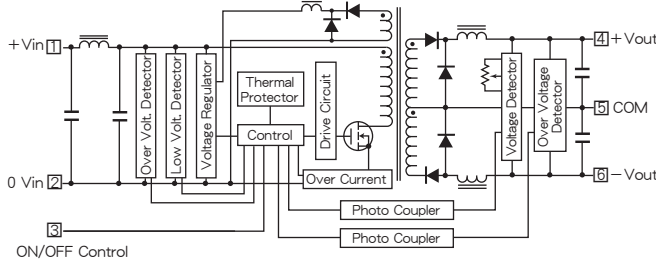
# BPU SERIES DATA SHEET

## Block Diagram

### Single Output



### Dual Outputs



## Characteristic Curves

Fig. 1 Derating Curve

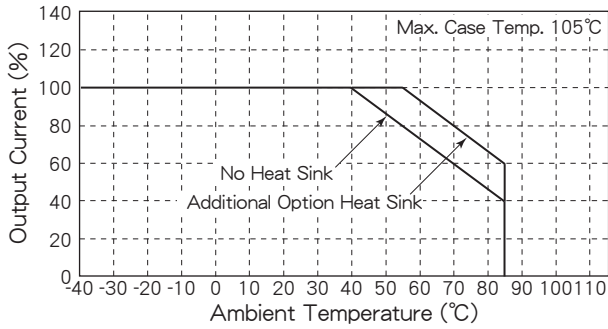


Fig. 2 Short Circuit Operating Area

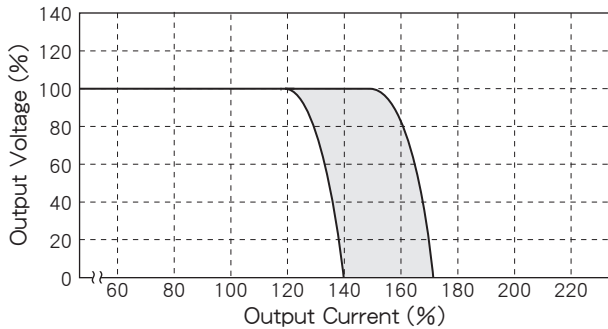


Fig. 3 Temperature Characteristic on Case Surface

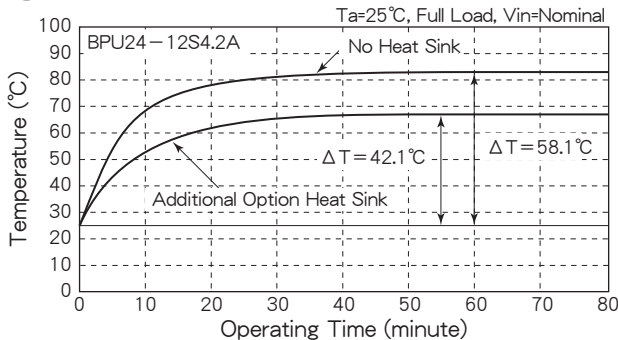


Fig. 4 Efficiency vs. Output Current (Vin=12V)

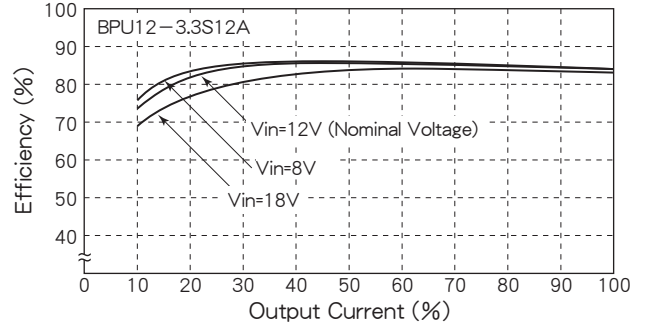


Fig. 5 Efficiency vs. Output Current (Vin=24V)

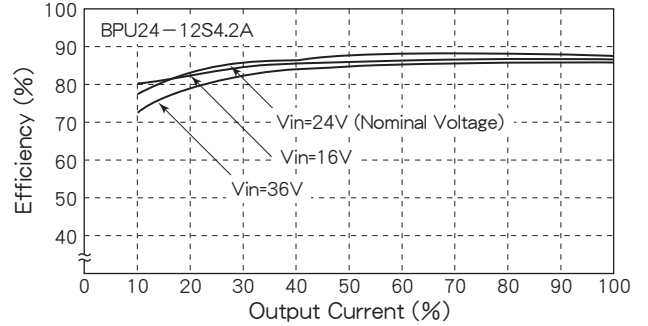


Fig. 6 Efficiency vs. Output Current (Vin=100V)

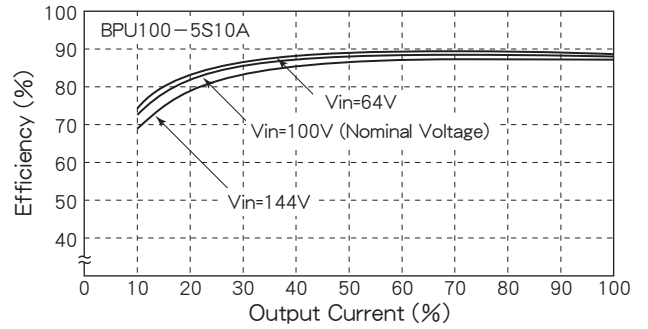


Fig. 7 Efficiency vs. Output Current (Vin=100V)

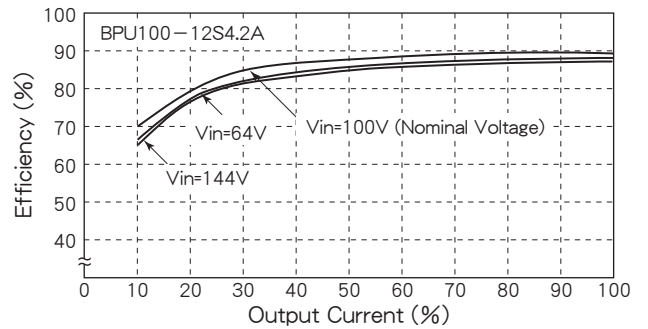


Fig. 8 Efficiency vs. Output Current (Vin=12V)

