

# PBBA Series

1.5 - 10 WATTS SINGLE & DUAL OUTPUT DC/DC INDUSTRIAL

## Features

- Small size
- Low profile
- 2:1 input ratio
- Regulated output
- Overcurrent protection
- Fully isolated output



## Specifications

### INPUT

Input voltage	5VDC (4.5–9.0), 12VDC (9–18), 24VDC (18–36), 48VDC (36–72)
Input protection	None, use external input fuse
Input filter	Yes

### OUTPUT

Output voltage	See table
Voltage accuracy	±5%
Output Power	1.5W–10W
Ripple & Noise	120–150mV max. 20MHz bandwidth
Line regulation	±0.5% max. over input range
Load regulation	"Model dependent". ±1% single output, ±5% dual outputs
Temperature drift	1% max. 0°C to 50°C
Overload protection	Overcurrent protection works at approx. 105% of rating and recovers automatically

### OPERATING

Efficiency	1.5W: 65%, 3W: 70%, 6W: 70%, 10W: 80%
Isolation	Input – Output: 500VDC Isolation resistance typically 50M $\Omega$
Parallel operation	No
Series operation	Yes

## ENVIRONMENTAL

Operating temperature	-20°C to 71°C
Derating	Derate from 55°C to 71°C
Cooling	Free air convection
Storage temperature	-40°C to 85°C
Humidity	20%–90% non condensing
Vibration	10Hz–55Hz at 2G, 3 min periods along x, y, and z axis
Impact	50G for 11ms once on each axis

## MECHANICAL SPECIFICATIONS

Case	Metal case with plastic base
Dimensions & weight	PBBA-A: 27.5x18x7mm 10g PBBA-B: 35x23x7mm 16g PBBA-C: 44.4x28x7mm 25g PBBA-D: 45x35x7mm 40g

## STANDARDS AND APPROVALS

C-Tick	AS/NZS CISPR11 Group 1 Class A
Safety	EN60950-1, UL60950-1

### Selection Table - Single Output

MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-0505A	4.5-9	5	0.3	1.5W
PBBA-0512A	4.5-9	12	0.13	1.5W
PBBA-0515A	4.5-9	15	0.1	1.5W
PBBA-1205A	9-18	5	0.3	1.5W
PBBA-1212A	9-18	12	0.13	1.5W
PBBA-1215A	9-18	15	0.1	1.5W
PBBA-2405A	18-36	5	0.3	1.5W
PBBA-2412A	18-36	12	0.13	1.5W
PBBA-2415A	18-36	15	0.1	1.5W
PBBA-4805A	36-76	5	0.3	1.5W
PBBA-4812A	36-76	12	0.13	1.5W
PBBA-4815A	36-76	15	0.1	1.5W
PBBA-0505B	4.5-9	5	0.6	3W
PBBA-0512B	4.5-9	12	0.25	3W
PBBA-0515B	4.5-9	15	0.2	3W
PBBA-1205B	9-18	5	0.6	3W
PBBA-1212B	9-18	12	0.25	3W
PBBA-1215B	9-18	15	0.2	3W
PBBA-2405B	18-36	5	0.6	3W
PBBA-2412B	18-36	12	0.25	3W
PBBA-2415B	18-36	15	0.2	3W
PBBA-4805B	36-76	5	0.6	3W
PBBA-4812B	36-76	12	0.25	3W
PBBA-4815B	36-76	15	0.2	3W
PBBA-053R3C	4.5-9	3.3	1	6W
PBBA-0505C	4.5-9	5	1	6W
PBBA-0512C	4.5-9	12	0.5	6W
PBBA-0515C	4.5-9	15	0.4	6W
PBBA-1205C	9-18	5	1.2	6W
PBBA-1212C	9-18	12	0.5	6W
PBBA-1215C	9-18	15	0.4	6W
PBBA-2405C	18-36	5	1.2	6W
PBBA-2412C	18-36	12	0.5	6W
PBBA-2415C	18-36	15	0.4	6W

MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-483R3C	36-76	3.3	1	6W
PBBA-4805C	36-76	5	1.2	6W
PBBA-4812C	36-76	12	0.5	6W
PBBA-4815C	36-76	15	0.4	6W
PBBA-053R3D	4.5-9	3.3	1.6	10W
PBBA-0505D	4.5-9	5	1.6	10W
PBBA-0512D	4.5-9	12	0.7	10W
PBBA-0515D	4.5-9	15	0.6	10W
PBBA-1205D	9-18	5	2	10W
PBBA-1212D	9-18	12	0.9	10W
PBBA-1215D	9-18	15	0.7	10W
PBBA-2405D	18-36	5	2	10W
PBBA-2412D	18-36	12	0.9	10W
PBBA-2415D	18-36	15	0.7	10W
PBBA-483R3D	36-76	3.3	2	10W
PBBA-4805D	36-76	5	2	10W
PBBA-4812D	36-76	12	0.9	10W
PBBA-4815D	36-76	15	0.7	10W

### Selection Table - Dual Output

MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-05D12A	4.5-9	±12 or +24	0.065	1.5W
PBBA-05D15A	4.5-9	±15 or +30	0.05	1.5W
PBBA-12D12A	9-18	±12 or +24	0.065	1.5W
PBBA-12D15A	9-18	±15 or +30	0.05	1.5W
PBBA-24D12A	18-36	±12 or +24	0.065	1.5W
PBBA-24D15A	18-36	±15 or +30	0.05	1.5W
PBBA-48D12A	36-76	±12 or +24	0.065	1.5W
PBBA-48D15A	36-76	±15 or +30	0.05	1.5W
PBBA-05D12B	4.5-9	±12 or +24	0.13	3W
PBBA-05D15B	4.5-9	±15 or +30	0.1	3W
PBBA-12D12B	9-18	±12 or +24	0.13	3W
PBBA-12D15B	9-18	±15 or +30	0.1	3W
PBBA-24D12B	18-36	±12 or +24	0.13	3W
PBBA-24D15B	18-36	±15 or +30	0.1	3W
PBBA-48D12B	36-76	±12 or +24	0.13	3W
PBBA-48D15B	36-76	±15 or +30	0.1	3W
PBBA-05D12C	4.5-9	±12 or +24	0.25	6W
PBBA-05D15C	4.5-9	±15 or +30	0.2	6W
PBBA-12D12C	9-18	±12 or +24	0.25	6W
PBBA-12D15C	9-18	±15 or +30	0.2	6W

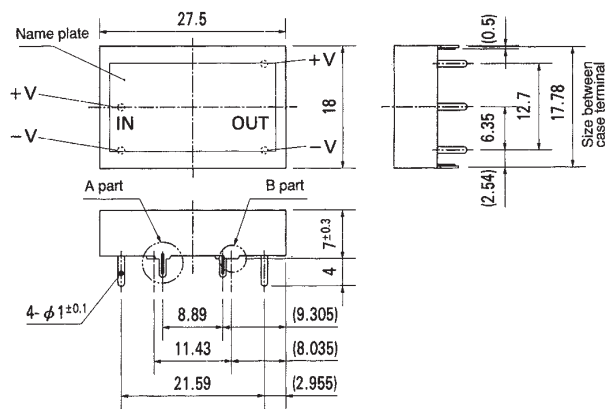
# PBBA Series

1.5 - 10 WATTS SINGLE & DUAL OUTPUT DC/DC INDUSTRIAL

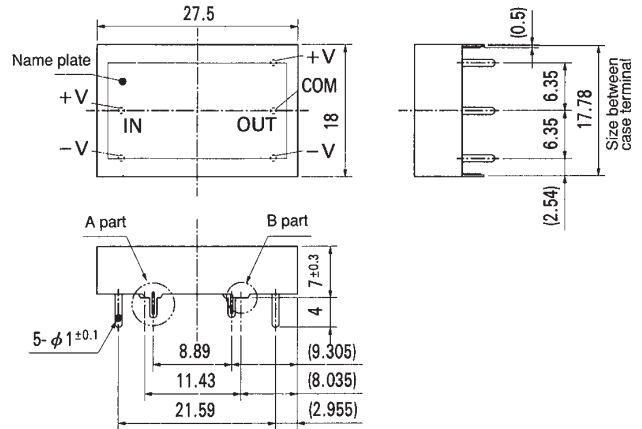
MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-24D12C	18-36	±12 or +24	0.25	6W
PBBA-24D15C	18-36	±15 or +30	0.2	6W
PBBA-48D12C	36-76	±12 or +24	0.25	6W
PBBA-48D15C	36-76	±15 or +30	0.2	6W
PBBA-05D12D	4.5-9	±12 or +24	0.45	10W
PBBA-05D15D	4.5-9	±15 or +30	0.35	10W
PBBA-12D12D	9-18	±12 or +24	0.45	10W
PBBA-12D15D	9-18	±15 or +30	0.35	10W
PBBA-24D12D	18-36	±12 or +24	0.45	10W
PBBA-24D15D	18-36	±15 or +30	0.35	10W
PBBA-48D12D	36-76	±12 or +24	0.45	10W
PBBA-48D15D	36-76	±15 or +30	0.35	10W

## Technical Illustrations

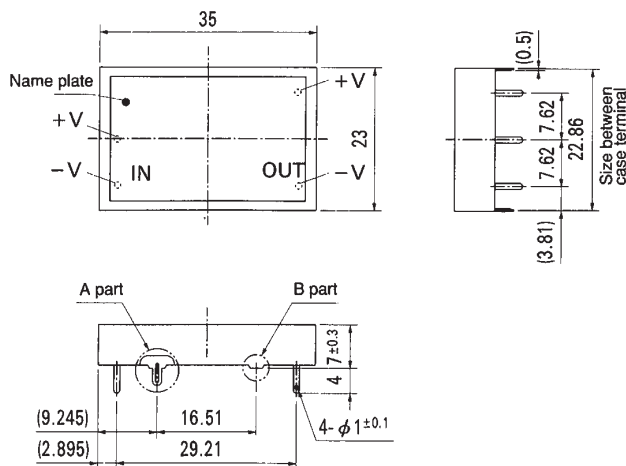
### PBBA-A



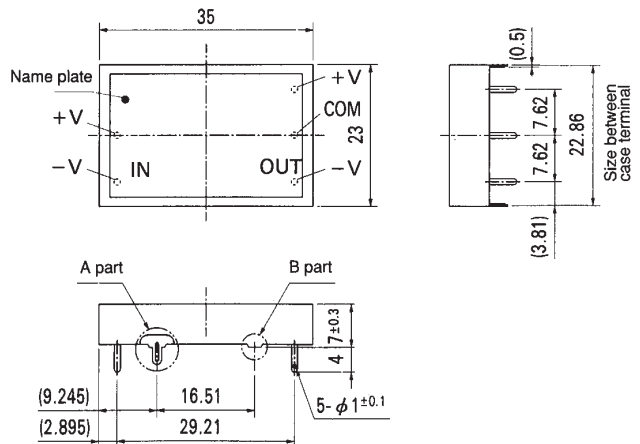
### PBBA-D-A



### PBBA-B

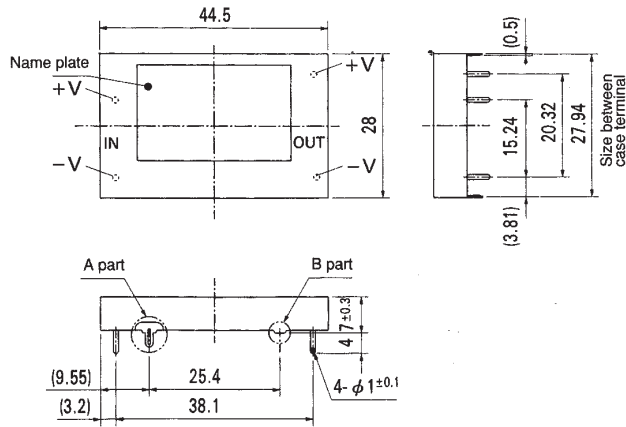


### PBBA-D-B

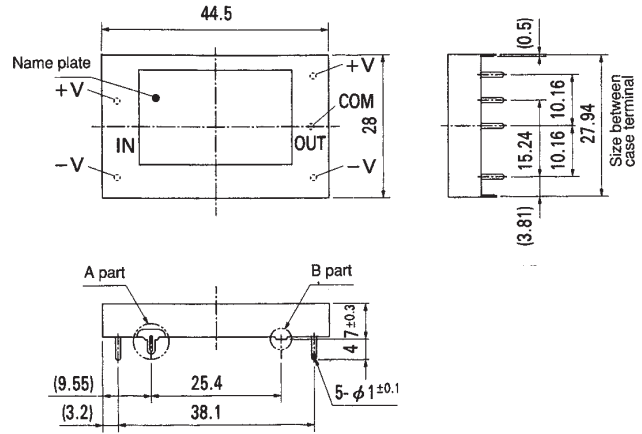


### Technical Illustrations (contd)

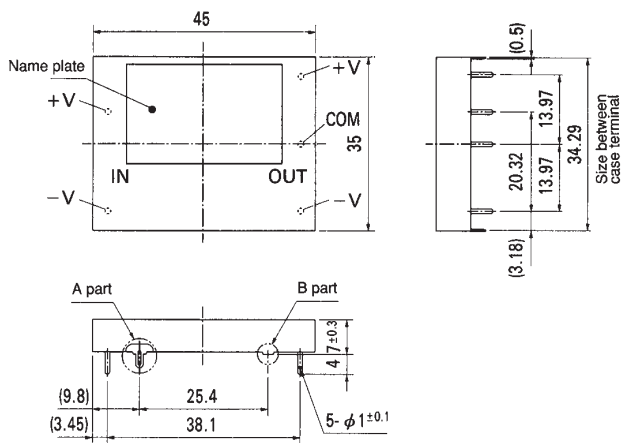
#### PBBA-C



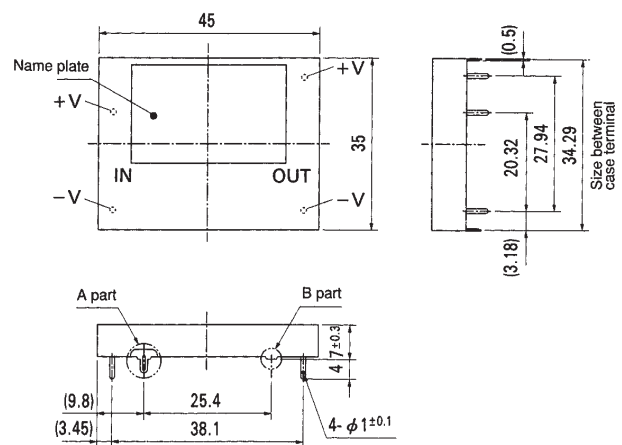
#### PBBA-D-C



#### PBBA-D



#### PBBA-D-D



# PBBA Series

15 - 25 WATTS SINGLE & DUAL OUTPUT DC/DC INDUSTRIAL

## Features

- High power density
- Low profile
- PCB mounting
- 2:1 input ratio
- Regulated output
- Overcurrent protection
- On/off remote control



## Specifications

### INPUT

Nominal voltage	12VDC, 24VDC, 48VDC
Voltage range	9–18V, 18–36V, 36–72V
Input filter	Yes
Input protection	Use external fuse

### OUTPUT

Output voltage	See table
Voltage adjustment	±5% by external resistors
Output current	See table
Output voltage setting	Within ±5% of nominal
Ripple & noise	All output 150mV pk-pk max.
Line regulation	Single Out: 5V rail – 20mV, 12V rail – 48mV • Dual Out: ±12V rail – 60mV, ±15V rail – 75mV
Load regulation	Single Out: 5V rail – 40mV, 12V rail – 100mV • Dual Out: ±12V rail – 600mV, ±15V rail – 750mV
Temperature drift	Over 0°C to 55°C – 1%
Rise time	100mS with full load
Overcurrent protection	Set at approx. 105% of rating and recovers automatically
Overvoltage protection	Set at 115–140% of V out (sum of ± output voltage)

### OPERATING

Efficiency	Typically 83%
Isolation	Input – Output: 500Vdc Input – Case: 500Vdc Output – Case: 500Vdc
Insulation resistance	50MΩ
Remote control	Shortcircuit (RC & -V pins) or 1.2V output OFF • Open or 2.4-5.5V output ON • Compatible with TTL

### STANDARDS AND APPROVALS

C-Tick	AS/NZS CISPR11 Group 1 Class A
--------	--------------------------------

### ENVIRONMENTAL

Operating temperature	-20°C to 55°C at FL
Humidity	20%–90% RH, non condensing
Vibration	10Hz–55Hz 10G 3 min period for 60 minutes each along x, y, and z axis
Shock/Impact	50G 11mS once each along x, y and z axis

### MECHANICAL

Dimensions	PBBA-F: 45x50x8.5mm PBBA-G: 65x50x8.5mm
Weight	PBBA-F: 55g PBBA-G: 65g

### Selection Table – Single Output

MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-053R3F	4.5-9	3.3	2	15W
PBBA-0505F	4.5-9	5	2	15W
PBBA-0512F	4.5-9	12	1	15W
PBBA-1205F	9-18	5	2.4	15W
PBBA-1212F	9-18	12	1.3	15W
PBBA-2405F	18-36	5	2.4	15W
PBBA-2412F	18-36	12	1.3	15W
PBBA-483R3F	36-76	3.3	2.4	15W
PBBA-4805F	36-76	5	2.4	15W
PBBA-4812F	36-76	12	1.3	15W
PBBA-053R3G	4.5-9	3.3	4	25W
PBBA-0505G	4.5-9	5	3.2	25W
PBBA-0512G	4.5-9	12	1.7	25W
PBBA-1205G	9-18	5	4	25W
PBBA-1212G	9-18	12	2.1	25W
PBBA-2405G	18-36	5	4	25W
PBBA-2412G	18-36	12	2.1	25W
PBBA-483R3G	36-76	3.3	4	25W
PBBA-4805G	36-76	5	2.1	25W
PBBA-4812G	36-76	12	2.1	25W

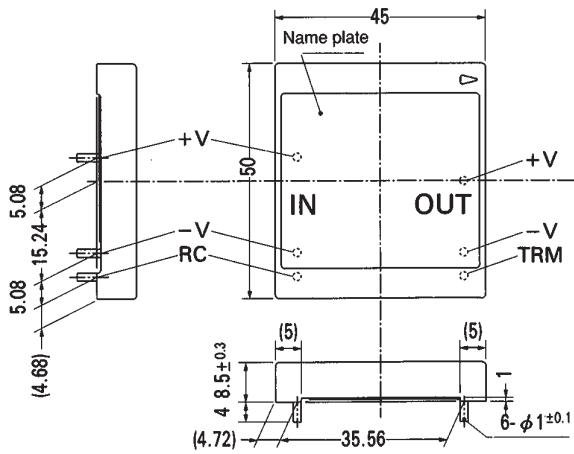
## Selection Table - Dual Output

MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-05D12F	4.5-9	±12 or +24	0.6	15W
PBBA-05D15F	4.5-9	±15 or +30	0.5	15W
PBBA-12D12F	9-18	±12 or +24	0.65	15W
PBBA-12D15F	9-18	±15 or +30	0.5	15W
PBBA-24D12F	18-36	±12 or +24	0.65	15W
PBBA-24D15F	18-36	±15 or +30	0.5	15W
PBBA-48D12F	36-76	±12 or +24	0.65	15W
PBBA-48D15F	36-76	±15 or +30	0.5	15W

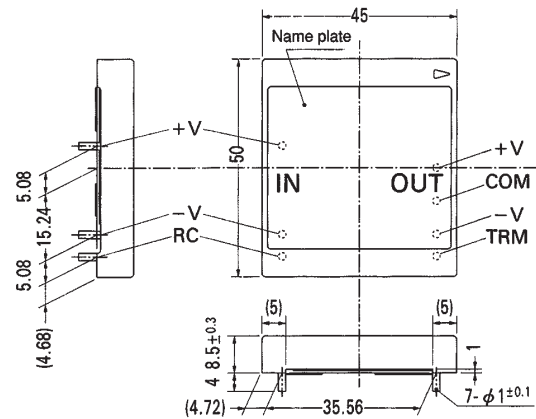
MODEL NUMBER	INPUT VOLTAGE Vdc	OUTPUT VOLTAGE Vdc	OUTPUT CURRENT A	OUTPUT POWER Watt
PBBA-05D12G	4.5-9	±12 or +24	0.84	25W
PBBA-05D15G	4.5-9	±15 or +30	0.67	25W
PBBA-12D12G	9-18	±12 or +24	1.05	25W
PBBA-12D15G	9-18	±15 or +30	0.85	25W
PBBA-24D12G	18-36	±12 or +24	1.05	25W
PBBA-24D15G	18-36	±15 or +30	0.85	25W
PBBA-48D12G	36-76	±12 or +24	1.05	25W
PBBA-48D15G	36-76	±15 or +30	0.85	25W

## Technical Illustrations

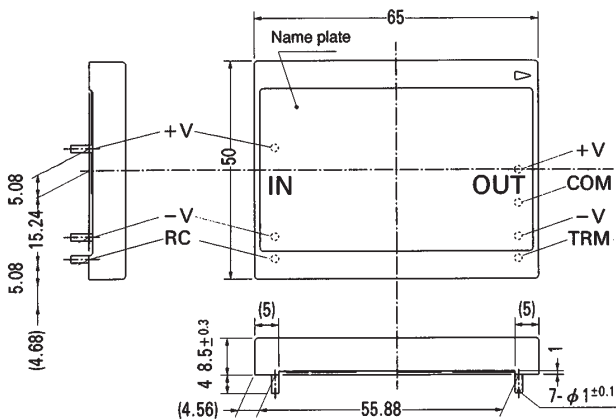
### PBBA-F



### PBBA-D-F



### PBBA-G



### PBBA-D-G

