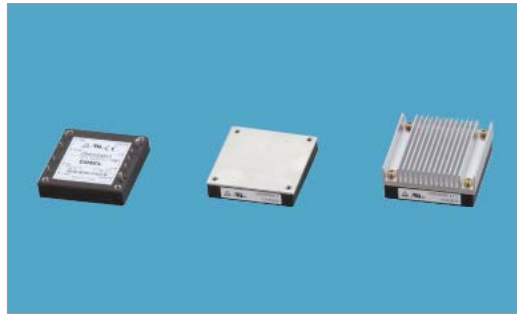


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CBS20024



Features

- Compact DC-DC Converter, "HALF BRICK" which has been standard size for Telecommunication Market
- High efficiency
- High density
- High reliability : not built-in aluminum and tantalum electrolytic capacitor
- Built-in Remote ON/OFF
- Mounting hole (M3 tapped)
- Built-in Over Current Protection
- Built-in Over Voltage Protection
- Built-in Thermal Protection
- RoHS Compliant

Safety Agency Approvals

UL60950, C-UL (CSA60950) recognized, TUV approved

CE Markings

Low Voltage Directive

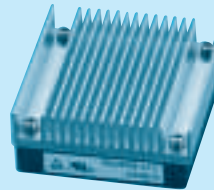
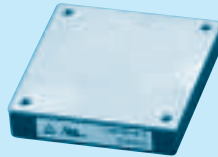
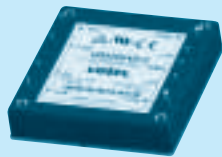
5 year warranty(refer to Instruction Manual)

| Model | Input Voltage [V] | Output Wattage [W] | DC Output [V/A] |
|-------------|-------------------|--------------------|-----------------|
| CBS200242R8 | DC 18 - 36 | 63 | 1.8V 35A |
| CBS200242R5 | DC 18 - 36 | 87.5 | 2.5V 35A |
| CBS2002403 | DC 18 - 36 | 115.5 | 3.3V 35A |
| CBS2002405 | DC 18 - 36 | 150 | 5V 30A |
| CBS2002412 | DC 18 - 36 | 200.4 | 12V 16.7A |
| CBS2002415 | DC 18 - 36 | 201 | 15V 13.4A |
| CBS2002424 | DC 18 - 36 | 201.6 | 24V 8.4A |
| CBS2002428 | DC 18 - 36 | 201.6 | 28V 7.2A |

CBS200

CB S 200 48 12 -

① ② ③ ④ ⑤ ⑥



- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
24:DC18 - 36V
48:DC36 - 76V
- ⑤ Output voltage
- ⑥ Optional
- R :with Remote ON/OFF
Positive logic control
- T :with Mounting hole
φ3.4 thru
- :with Addition of a
Heat sink

| MODEL | CBS200241R8 | CBS200242R5 | CBS2002403 | CBS2002405 | CBS2002412 | CBS2002415 | CBS2002424 | CBS2002428 |
|------------------------------|-----------------|-----------------|-----------------|---------------|------------------|------------------|-----------------|-----------------|
| MAX OUTPUT WATTAGE[W] | 63.00 | 87.50 | 115.5 | 150.0 | 200.4 | 201.0 | 201.6 | 201.6 |
| DC OUTPUT | 1.8V 35A | 2.5V 35A | 3.3V 35A | 5V 30A | 12V 16.7A | 15V 13.4A | 24V 8.4A | 28V 7.2A |

SPECIFICATIONS

| | MODEL | CBS200241R8 | CBS200242R5 | CBS2002403 | CBS2002405 | CBS2002412 | CBS2002415 | CBS2002424 | CBS2002428 | |
|--|---|------------------|-------------|-------------|---------------|---------------|---------------|---------------|------------|--------|
| INPUT | VOLTAGE[V] | DC18 - 36 | | | | | | | | |
| | CURRENT[A] *1 | 3.75typ | 4.80typ | 6.09typ | 7.62typ | 9.60typ | 9.63typ | 9.66typ | 9.66typ | |
| | EFFICIENCY[%] *1 | 70typ | 76typ | 79typ | 82typ | 87typ | 87typ | 87typ | 87typ | |
| OUTPUT | VOLTAGE[V] | 1.8 | 2.5 | 3.3 | 5 | 12 | 15 | 24 | 28 | |
| | CURRENT[A] | 35 | 35 | 35 | 30 | 16.7 | 13.4 | 8.4 | 7.2 | |
| | LINE REGULATION[mV] | 10max | 10max | 10max | 10max | 24max | 30max | 48max | 56max | |
| | LOAD REGULATION[mV] | 10max | 10max | 10max | 10max | 24max | 30max | 48max | 56max | |
| | RIPPLE[mVp-p] | -20 to +100°C *2 | 80max | 80max | 80max | 80max | 120max | 120max | 120max | 120max |
| | | -40 to -20°C *2 | 120max | 120max | 120max | 120max | 150max | 150max | 150max | 150max |
| | RIPPLE NOISE[mVp-p] | -20 to +100°C *2 | 120max | 120max | 120max | 120max | 150max | 150max | 150max | 150max |
| | | -40 to -20°C *2 | 200max | 200max | 200max | 200max | 200max | 200max | 250max | 250max |
| | TEMPERATURE REGULATION[mV] | 0 to +65°C | 35max | 35max | 35max | 50max | 120max | 150max | 240max | 280max |
| | | -40 to +100°C | 66max | 66max | 66max | 100max | 240max | 300max | 480max | 560max |
| DRIFT[mV] *3 | 16max | 16max | 16max | 20max | 40max | 60max | 90max | 90max | | |
| START-UP TIME[ms] | 200max (DCIN 24V, Io=100%) | | | | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4 | Fixed (TRM pin open), adjustable by external resistor | | | | | | | | | |
| OUTPUT VOLTAGE SETTING[V] | 1.70 - 1.98 | 1.98 - 2.75 | 1.98 - 3.63 | 3.0 - 5.5 | 7.2 - 13.2 | 9.0 - 16.5 | 14.4 - 26.4 | 16.8 - 30.8 | | |
| OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | | | |
| OVERVOLTAGE PROTECTION[V] | 2.16 - 2.88 | 3.00 - 4.00 | 4.00 - 5.50 | 5.75 - 7.00 | 13.80 - 16.80 | 17.25 - 21.00 | 27.60 - 33.60 | 32.20 - 39.20 | | |
| REMOTE SENSING | Provided | | | | | | | | | |
| REMOTE ON/OFF | Provided (Negative logic L : ON, H : OFF) | | | | | | | | | |

| MODEL | CBS200481R8 | CBS200482R5 | CBS2004803 | CBS2004805 | CBS2004812 | CBS2004815 | CBS2004824 | CBS2004828 | CBS2004848 |
|------------------------------|-----------------|-----------------|-----------------|---------------|------------------|------------------|-----------------|-----------------|-----------------|
| MAX OUTPUT WATTAGE[W] | 63.00 | 87.50 | 115.5 | 150.0 | 200.4 | 201.0 | 201.6 | 201.6 | 201.6 |
| DC OUTPUT | 1.8V 35A | 2.5V 35A | 3.3V 35A | 5V 30A | 12V 16.7A | 15V 13.4A | 24V 8.4A | 28V 7.2A | 48V 4.2A |

SPECIFICATIONS

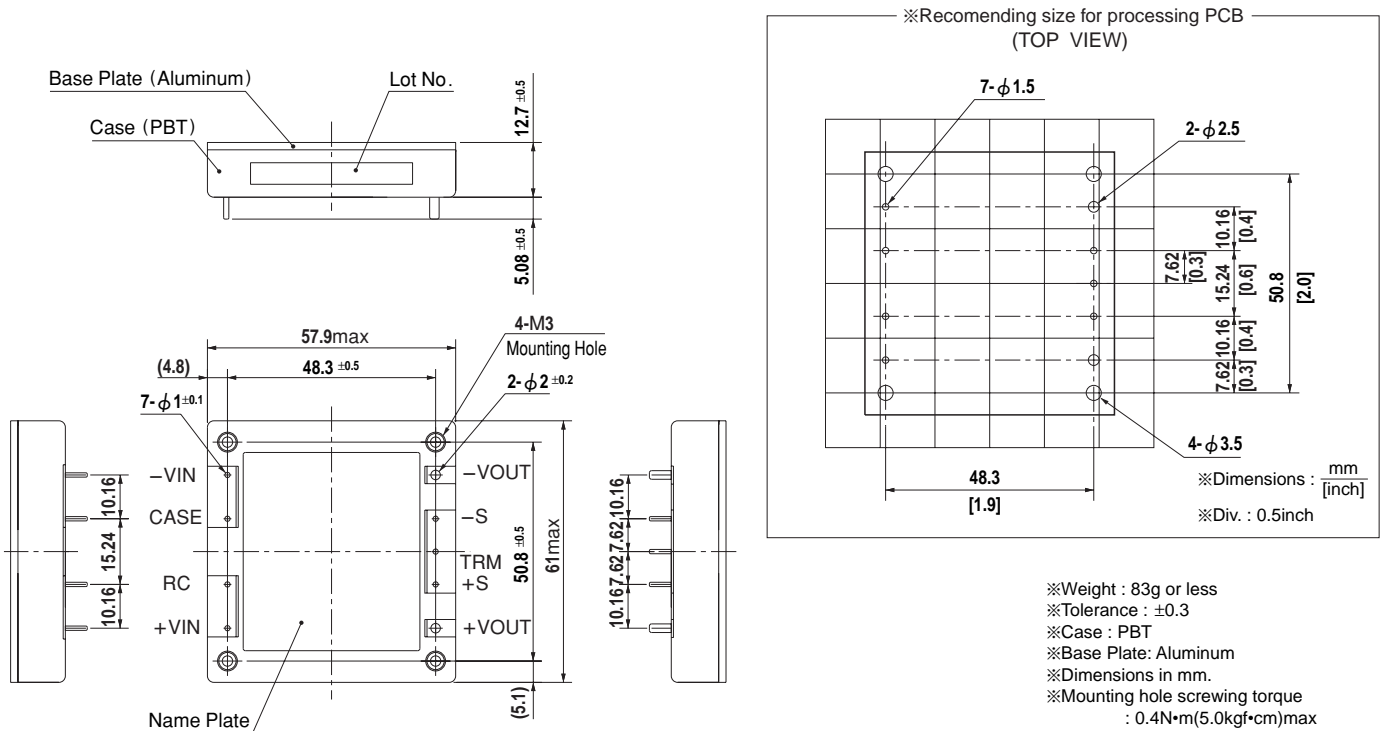
| | MODEL | CBS200481R8 | CBS200482R5 | CBS2004803 | CBS2004805 | CBS2004812 | CBS2004815 | CBS2004824 | CBS2004828 | CBS2004848 | |
|--|---|------------------|-------------|-------------|---------------|---------------|---------------|---------------|---------------|------------|--------|
| INPUT | VOLTAGE[V] | DC36 - 76 | | | | | | | | | |
| | CURRENT[A] *1 | 1.88typ | 2.40typ | 3.01typ | 3.77typ | 4.74typ | 4.76typ | 4.77typ | 4.77typ | 4.77typ | |
| | EFFICIENCY[%] *1 | 70typ | 76typ | 80typ | 83typ | 88typ | 88typ | 88typ | 88typ | 88typ | |
| OUTPUT | VOLTAGE[V] | 1.8 | 2.5 | 3.3 | 5 | 12 | 15 | 24 | 28 | 48 | |
| | CURRENT[A] | 35 | 35 | 35 | 30 | 16.7 | 13.4 | 8.4 | 7.2 | 4.2 | |
| | LINE REGULATION[mV] | 10max | 10max | 10max | 10max | 24max | 30max | 48max | 56max | 96max | |
| | LOAD REGULATION[mV] | 10max | 10max | 10max | 10max | 24max | 30max | 48max | 56max | 96max | |
| | RIPPLE[mVp-p] | -20 to +100°C *2 | 80max | 80max | 80max | 80max | 120max | 120max | 120max | 120max | 200max |
| | | -40 to -20°C *2 | 120max | 120max | 120max | 120max | 150max | 150max | 150max | 150max | 250max |
| | RIPPLE NOISE[mVp-p] | -20 to +100°C *2 | 120max | 120max | 120max | 120max | 150max | 150max | 150max | 150max | 250max |
| | | -40 to -20°C *2 | 200max | 200max | 200max | 200max | 200max | 200max | 250max | 250max | 400max |
| | TEMPERATURE REGULATION[mV] | 0 to +65°C | 35max | 35max | 35max | 50max | 120max | 150max | 240max | 280max | 480max |
| | | -40 to +100°C | 66max | 66max | 66max | 100max | 240max | 300max | 480max | 560max | 960max |
| DRIFT[mV] *3 | 16max | 16max | 16max | 20max | 40max | 60max | 90max | 90max | 180max | | |
| START-UP TIME[ms] | 200max (DCIN 48V, Io=100%) | | | | | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4 | Fixed (TRM pin open), adjustable by external resistor | | | | | | | | | | |
| OUTPUT VOLTAGE SETTING[V] | 1.70 - 1.98 | 1.98 - 2.75 | 1.98 - 3.63 | 3.0 - 5.5 | 7.2 - 13.2 | 9.0 - 16.5 | 14.4 - 26.4 | 16.8 - 30.8 | 43.2 - 52.8 | | |
| OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | | | | |
| OVERVOLTAGE PROTECTION[V] | 2.16 - 2.88 | 3.00 - 4.00 | 4.00 - 5.50 | 5.75 - 7.00 | 13.80 - 16.80 | 17.25 - 21.00 | 27.60 - 33.60 | 32.20 - 39.20 | 55.20 - 67.20 | | |
| REMOTE SENSING | Provided | | | | | | | | | | |
| REMOTE ON/OFF | Provided (Negative logic L : ON, H : OFF) | | | | | | | | | | |

GENERAL SPECIFICATIONS

| | | |
|-------------|------------------------------------|--|
| ISOLATION | INPUT-OUTPUT | DC1,500V or AC1,000V 1minute. Cutoff current = 10mA, DC500V 50MΩ min(20±15°C) |
| | INPUT-CASE PIN, BASE PLATE | DC1,500V or AC1,000V 1minute. Cutoff current = 10mA, DC500V 50MΩ min(20±15°C) |
| | OUTPUT-CASE PIN, BASE PLATE | AC500V 1minute. Cutoff current = 100mA, DC500V 50MΩ min (20±15°C) |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -40 to +100°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +100°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max |
| | VIBRATION | 10 - 55Hz, 49.0m/s ² (5G), 3minutes period, 60minutes each along X, Y and Z axis |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each along X, Y and Z axis |
| SAFETY | AGENCY APPROVALS | UL60950-1, C-UL, EN60950-1 |
| OTHERS | CASE SIZE/WEIGHT | 57.9×12.7×61.0mm (W×H×D) / 83g max |
| | COOLING METHOD | Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink) |

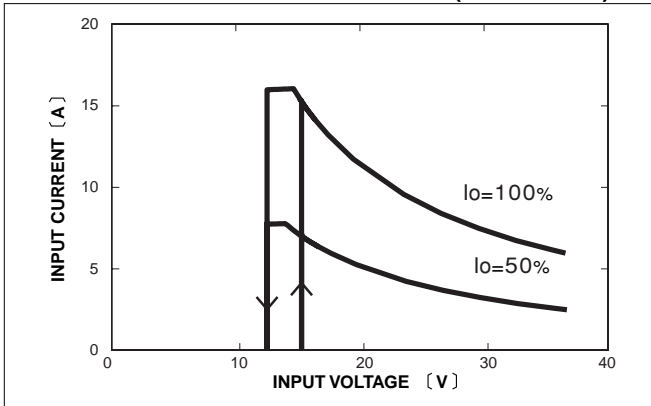
- *1 At rated input(DC24V,DC48V) and rated load.
- *2 Ripple and ripple noise is measured by using measuring board with recommended capacitor Co & the film capacitor 0.1 μF. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM101).
- *3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- *4 When the input voltage is in the range of DC18 - 20V, DC36 - 40V, output voltage adjustment range is 60 - 105% (except for 1R8/2R5/48).

External view



Performance data

INPUT CURRENT CHARACTERISTICS (CBS2002428)



INPUT CURRENT CHARACTERISTICS (CBS2004828)

