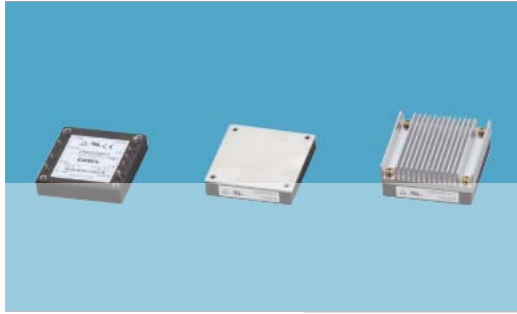


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## CBS20024



### 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

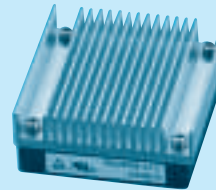
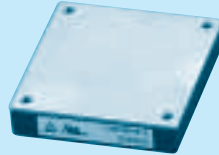
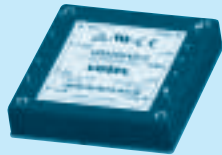
5 year warranty(refer to Instruction Manual)

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]	3.75typ	4.80typ	6.09typ	7.62typ	9.60typ	9.63typ	9.66typ	9.66typ
	EFFICIENCY[%]	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℃ *2 80max	80max	80max	80max	120max	120max	120max	120max
	RIPPLE NOISE[mVp-p]	-40 to -20℃ *2 120max	120max	120max	120max	150max	150max	150max	150max
		-20 to +100℃ *2 120max	120max	120max	120max	150max	150max	150max	150max
	TEMPERATURE REGULATION[mV]	-40 to -20℃ *2 200max	200max	200max	200max	200max	200max	250max	250max
		0 to +65℃ *2 35max	35max	35max	50max	120max	150max	240max	280max
	TEMPERATURE REGULATION[mV]	-40 to +100℃ *2 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, I <sub>o</sub> =100%)							
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	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

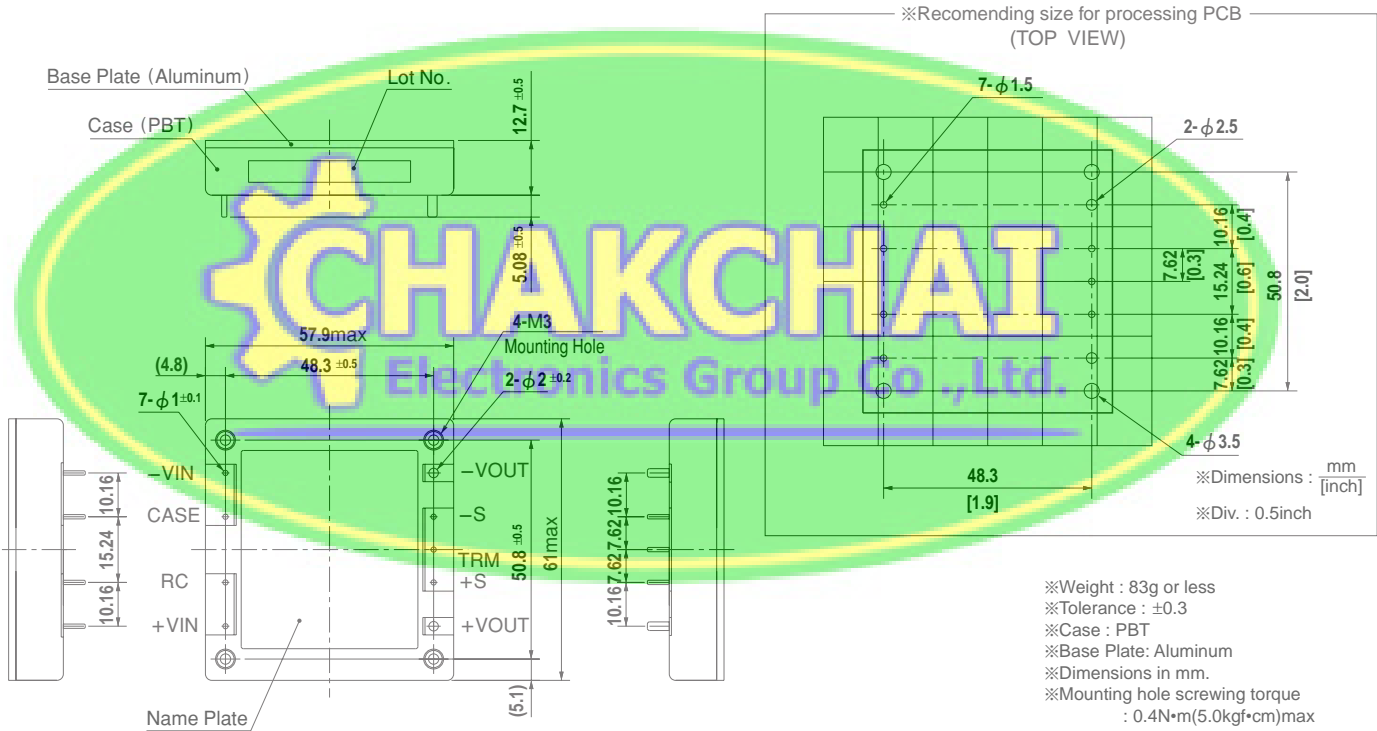
	MODEL	CBS200481R8	CBS200482R5	CBS2004803	CBS2004805	CBS2004812	CBS2004815	CBS2004824	CBS2004828	CBS2004848
INPUT	VOLTAGE[V]	DC36 - 76								
	CURRENT[A]	1.88typ	2.40typ	3.01typ	3.77typ	4.74typ	4.76typ	4.77typ	4.77typ	4.77typ
	EFFICIENCY[%]	70typ	76typ	80typ	83typ	88typ	88typ	88typ	88typ	88typ
OUTPUT	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℃ *2 80max	80max	80max	80max	120max	120max	120max	120max	200max
	RIPPLE NOISE[mVp-p]	-40 to -20℃ *2 120max	120max	120max	120max	150max	150max	150max	150max	250max
		-20 to +100℃ *2 120max	120max	120max	120max	150max	150max	150max	150max	250max
	TEMPERATURE REGULATION[mV]	-40 to -20℃ *2 200max	200max	200max	200max	200max	200max	250max	250max	400max
		0 to +65℃ *2 35max	35max	35max	50max	120max	150max	240max	280max	480max
	TEMPERATURE REGULATION[mV]	-40 to +100℃ *2 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, I <sub>o</sub> =100%)								
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	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**

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

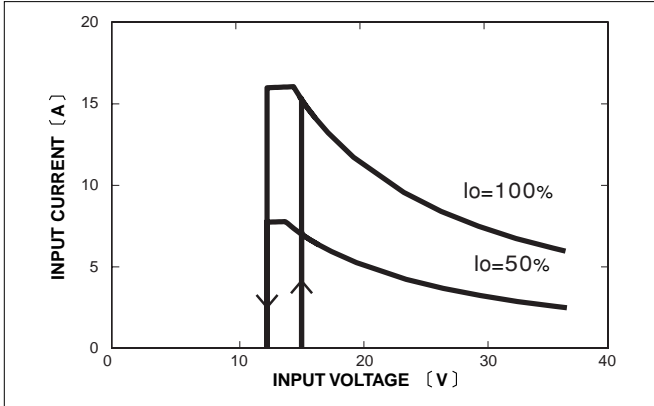
- \*1 At rated input(DC24V,DC48V) and rated load.
- \*2 Ripple and ripple noise is measured by using measuring board with recommended capacitor Co & the film capacitor 0.1μF. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM101).
- \*3 Drift is the change in DC output 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)**

