

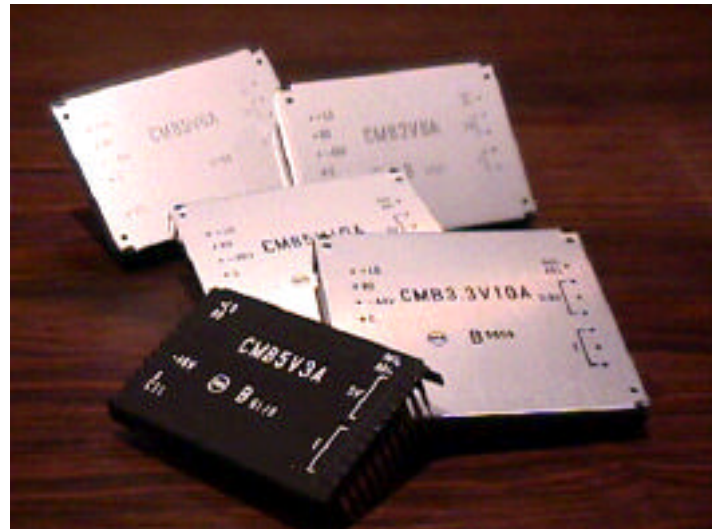
## Outline

Reduced size and high-density mounting of communications devices are two factors that are indispensable in the development of multimedia platforms. There is also a strong demand for reduced size of the power supplies that serve as the energy source of this communication equipment. Consequently, on-board power supplies are becoming the mainstream as a result of being able to supply power from conventional package-type supply forms for each electronic circuit package.

Although Shindengen has previously released its HTG series, HC series and HCF series of DC-DC converters for communications equipment, in order to respond to the growing needs of our customers for reduced size and greater efficiency, we have succeeded in creating a series of products that realize one of the most compact designs in the world, being roughly half the size of our previous products, as a result of taking advantage of circuit-type, high-density surface mounting technology based on semiconductor device technology.

The CMB series of DC-DC converters being introduced here convert an input voltage of 48V, such as in exchanges and transfer equipment, to voltages of 5V, 5.2V, 2V or 3.3V, and are manufactured on the basis of 24-hour continuous operation.

This product lineup is also compatible with hot-line insertion and removal, making them suitable for the new age of data communications by being able to be used in exchanges, transfer equipment and other next-generation devices.



## Features

1. High Reliability
2. High Efficiency
3. Low Profile
4. Miniature Size
5. Isolated Output
6. Heat Sink Not Required

## Functions

1. Over Current Protection
2. Over Voltage Protection
3. Output Low Voltage Protection
4. Remote Off, Local Off Control
5. Inrush Current Limiting
6. Hot-line Insertion
7. Parallele Operation
8. Built-in Noise Filter (VCCI Doing one kind of Based)

Type Name

CM

①

B

②

V

③

A

④

① Model Name

② Developed Products No.

③ Output Voltage

④ Output Current

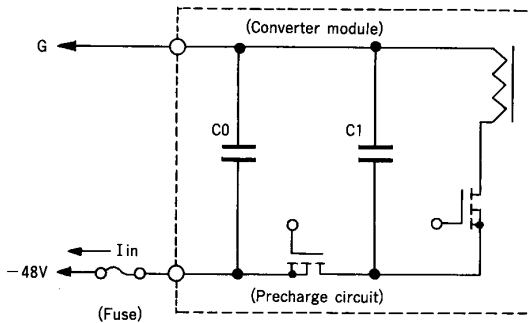
DC-DC Converters Selection Chart

	Input Voltage Range	Output Voltage	Output Current	Output Power
Model/Unit	V	V	A	W
CMB5V3A	-41 ~ -55	5	3	15
CMB5.2V3A		5.2	3	15.6
CMB2V6A		2	6	12
CMB5V6A		5	6	30
CMB3.3V10A		3.3	10	33
CMB5V10A		5	10	50

Precautions Concerning Input Fuse

This converter module does not contain a fuse. Install an external fuse for this converter module inside the electronic circuit package so that voltage fluctuations, such as the input falling below 48V due to overcurrent, do not continue for an extended period of time resulting in adverse effects on other adjacent packages.

Refer to the input current and input condenser capacity values for each model indicated in the table below when selecting the fuse capacity.



	CMB5V3A	CMB5V6A	CMB5V10A
C0 [ $\mu$ F]	0.022	0.1	0.47
C1 [ $\mu$ F]	4.8	6.0	13.6
Iin [A]	0.4	0.9	1.4

Iin -41V  
Iin refers to the input current at an input voltage of -41V and at the rated load.

## General Specification

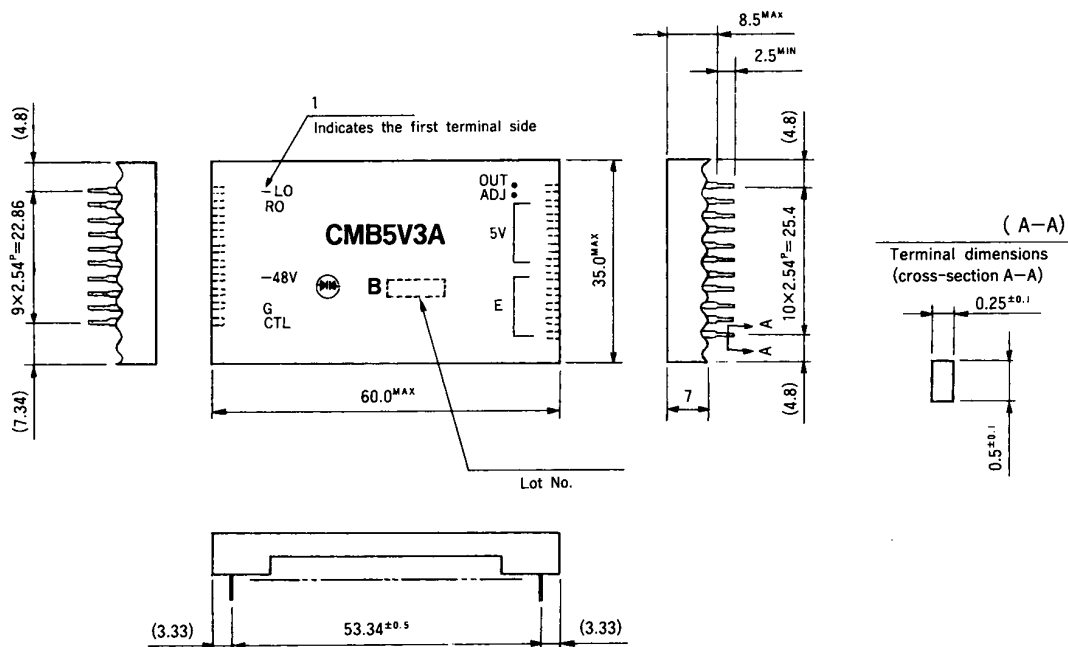
### CMB SERIES

Item	Model	CMB5V3A	CMB5.2V3A	CMB2V6A	CMB5V6A	CMB3.3V10A	CMB5V10A	Unit
Output Power		15	15.6	12	30	33	50	W
Input Characteristics								
	Nominal Input Voltage	-48						V <sub>DC</sub>
	Input Voltage Range	-41 ~ -55						V <sub>DC</sub>
	Conduction Noise (MAX)	-53						dBm
Output Characteristics								
	Output Voltage	5	5.2	2	5	3.3	5	V
	Nominal Output Current	3		6		10		A
	Output Current Range	0~3		0~6		0~10		A
	Output Voltage Tolerance	+5 -3.5						%
	Over Current Protection (MAX)	4.5		9		15		A
	Over Voltage Protection (MAX)	6.0	6.2	2.7	6.0	4.2	6.0	V
	Output Low Voltage Protection (MAX)	4.5	4.6	1.8	4.5	2.5	4.5	V
	Efficiency (TYP)	85	85	75	87	87	90	%
	Output Ripple Noise (MAX)	100		80	100			mV <sub>p-p</sub>
	Operating Temperature	Ta = 10~70 T (baseplat) = 100						℃
	Cooling Method	Forced air cooling (1.5m/s MIN)						
	Parallel Operation	Possible (50W MIN)						
	Change Frequency	250~500						kHz
	Isolation	500						V
	Mechanical Dimension (MAX)	35×60×8.5		46×58.5×8.5		56×58.5×8.5		mm

# Mechanical Specification

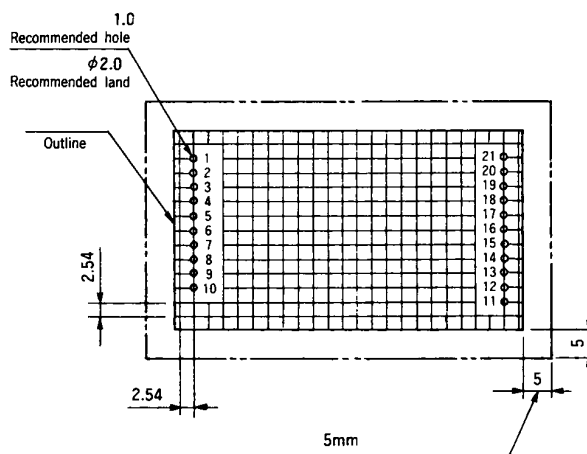
(Unit : mm)

## <CMB5V3A, 5.2V3A> External dimensions



### (TOP VIEW)

#### Printed board processing diagram

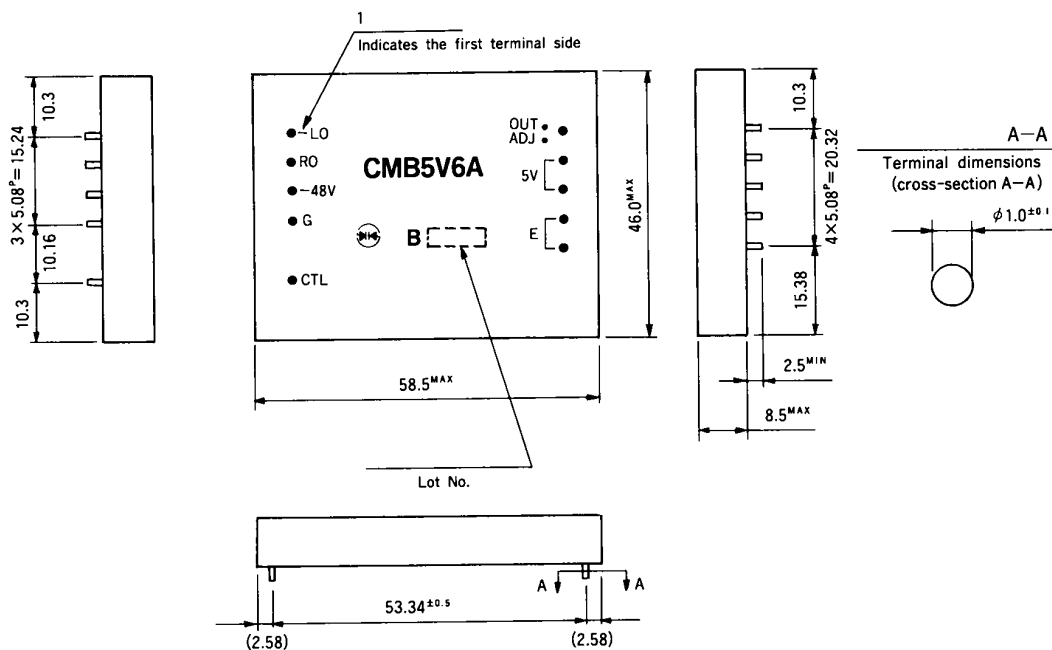


#### Pin assignment chart

Pin No.	Sign	Pin No.	Sign
1	LO	12	E
2	RO	13	E
3		14	E
4		15	E
5		16	5V
6		17	5V
7	-48V	18	5V
8		19	5V
9	G	20	5V
10	CTL	21	OUT.ADJ.
11	E		

# Mechanical Specification (Unit : mm)

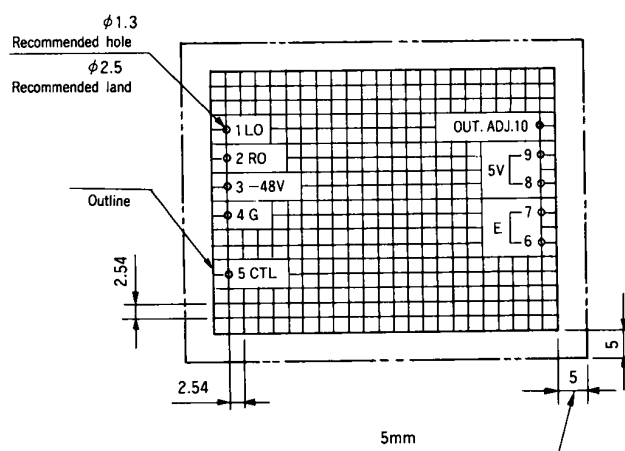
## <CMB2V6A, 5V6A> External dimensions



(TOP VIEW)

Printed board processing diagram

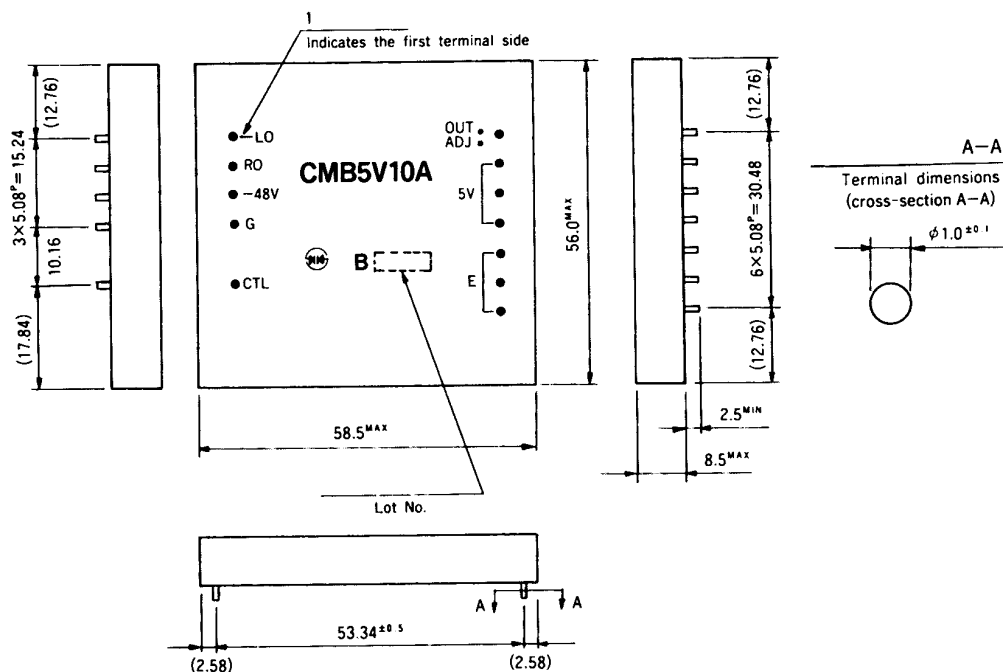
Pin assignment chart



Pin No.	Sign
1	LO
2	RO
3	-48V
4	G
5	CTL
6	E
7	E
8	5V
9	5V
10	OUT.ADJ.

# Mechanical Specification (Unit : mm)

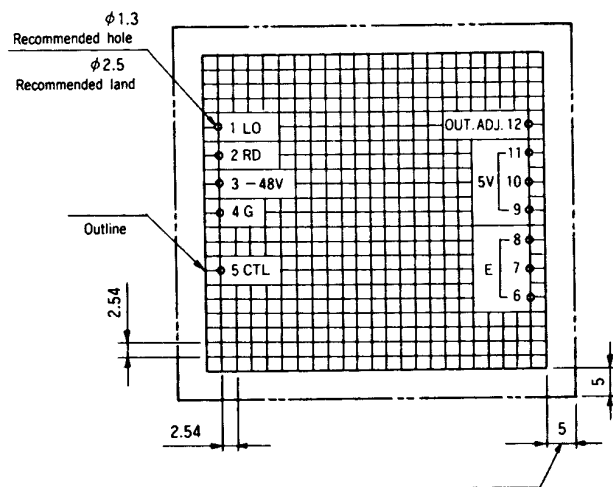
## <CMB3.3V10A, 5V10A> External dimensions



(TOP VIEW)

Printed board processing diagram

Pin assignment chart



Pin No	Sign
1	LO
2	RO
3	- 48V
4	G
5	CTL
6	E
7	E
8	E
9	5V
10	5V
11	5V
12	OUT ADJ