

DC to DC Converters

Distributed Power Supplies for Systems, Non-insulation Type

POL Converters iAA/iBA Series

Power supply systems for infrastructure devices used in communication networks primarily are expected to provide multi output, low output voltage, higher efficiencies, and lower noise levels.

To meet these demands, the lineup did non-insulation type POL (Point of Load) converter.



FEATURES

- Input voltage range (DC.3 to 5.5V)
- The output voltage is a fixed type of 3.3V and 2.5V, and changeable types of 0.75 to 3.63V.
- Heat sink is not required.
- High efficiency: 93 to 95%
- Remote ON-OFF function
- Output voltage external variable function
- Various protective functions

PRODUCT IDENTIFICATION

iAA	05	015A	033V	-○○○
(1)	(2)	(3)	(4)	(5)

(1) Type name

Point of Load-brick type

iAA: 33×13.5mm

iBA: 20×11mm

(2) Rated input voltage

(3) Output current

(4) Output voltage

(5) Option code

00: Standard (Positive on/off logic)

01: Negative on/off logic

PART NUMBERS AND RATINGS

Output voltage(V)	Current(A)	Part No.
3.3	15	iAA05015A033V
2.5	15	iAA05015A025V
0.75 to 3.63	15	iAA05015A008V
0.75 to 3.63	8	iBA05008A008V

SPECIFICATIONS AND STANDARDS

Part No.		iAA05015A033V	iAA05015A025V	iAA05015A008V	iBA05008A008V
Rated output voltage and current*1		3.3V • 15A	2.5V • 15A	0.75 to 3.63V • 15A	0.75 to 3.63V • 8A
Maximum output power	W	50	37.5	54.5	54.5
Input conditions					
Input voltage E _{dc}	V	3 to 5.5[Continuation]	3 to 5.5[Continuation]	3 to 5.5[Continuation]	3 to 5.5[Continuation]
Transient input voltage	V	6[100ms]	6[100ms]	6[100ms]	6[100ms]
Input current	A	16max.	16max.	16max.	8max.
Efficiency	%	89typ.	88typ.	86typ.	82typ.
Output characteristics					
Output voltage E _{dc}	V	3.3	2.5	0.75 to 3.63	0.75 to 3.63
Voltage adjustment range	%	±10	±10	—	—
Maximum output current	A	15	15	15	8
Minimum output current	A	0	0	0.02	0.02
Output voltage initial setting	%	±2max.	±2max.	±2max.	±2max.
Overcurrent protection	A	35typ.	35typ.	35typ.	17typ.
Voltage stability	Line regulation	mV	5max.(2typ.)	5max.(2typ.)	5max.(1typ.)
	Load regulation	mV	10max.(3typ.)	10max.(3typ.)	10max.(1typ.)
	Temperature regulation	mV	60max.(15typ.)	60max.(15typ.)	60max.(15typ.)
	Dynamic response*2	mV	±185typ.	±185typ.	±200typ.
Ripple noise E _{p-p}	mV	75max.	75max.	75max.	75max.
Start up time*3	ms	14	14	14	14
Rise time*4	ms	10	10	10	10
Auxiliary functions					
Overvoltage protection		No			
Overcurrent protection		Yes(Automatic recovery)			
Alarm output		No			
Over-temperature protection		Yes(Automatic recovery)			
Remote ON-OFF		Yes			
Remote sensing		Yes(Only +)			
Parallel operation		Impossible			
Output voltage adjustment		Yes			
Master slave operation		No			
Standards					
Safety standards		UL60950 and VDE0805 approved. EN60950 approved.			
Constructions					
External dimensions	mm	8.0×13.5×33.2 [H×W×L]			8.4×11.4×20.3 [H×W×L]
Weight	g	12	12	12	7
Mounting method		Surface mounting method			
Oscillating method		Fixed frequency			
Oscillating frequency	kHz	350	400	350	350

*1 Verify the rated current (maximum output current) because this involves derating.

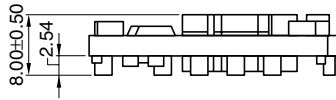
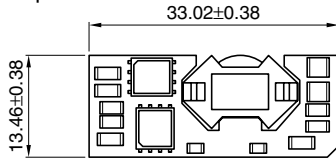
*2 Load step from 50 to 100% of I_o max. with at least one 0.1μF and 47μF ceramic capacitors across the output terminals.

*3 Time to reaching to 90% by output voltage after input applies (t: V_{in}=0 to V_{out}=0.9V_o, nom. T_c=25°C, I_o=I_o, max.)

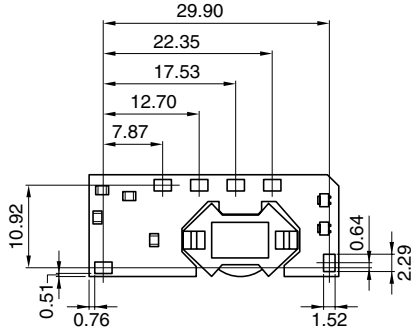
*4 Time to reaching to 10 to 90% by output voltage (t: Co=0.1 to 0.9 V_o, nom.)

iAA TYPE SHAPES AND DIMENSIONS

Top view

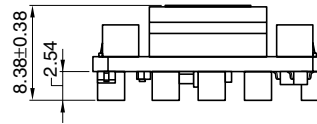
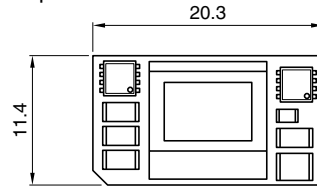


Bottom view

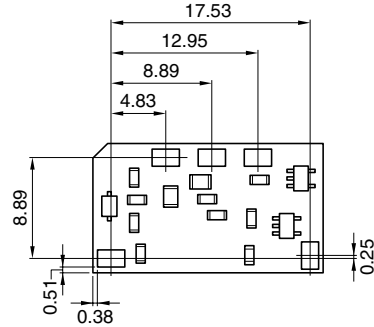


iBA TYPE SHAPES AND DIMENSIONS

Top view

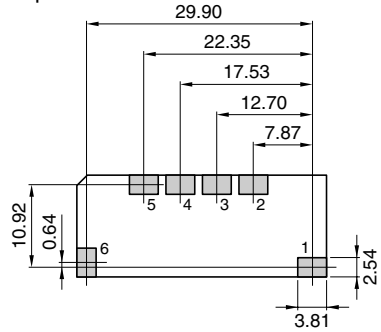


Bottom view



TERMINAL DESIGNATIONS AND FUNCTIONS

Top view

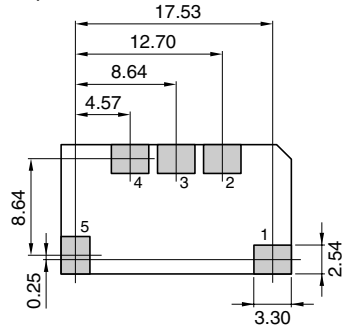


Dimensions in mm

1	Vin
2	GND
3	Vout
4	Trim
5	Sense
6	ON/OFF

TERMINAL DESIGNATIONS AND FUNCTIONS

Top view



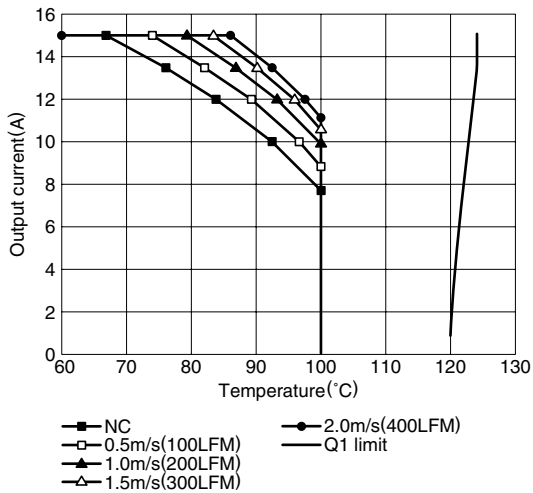
Dimensions in mm

1	Vin
2	GND
3	Vout
4	Trim
5	Sense
6	ON/OFF

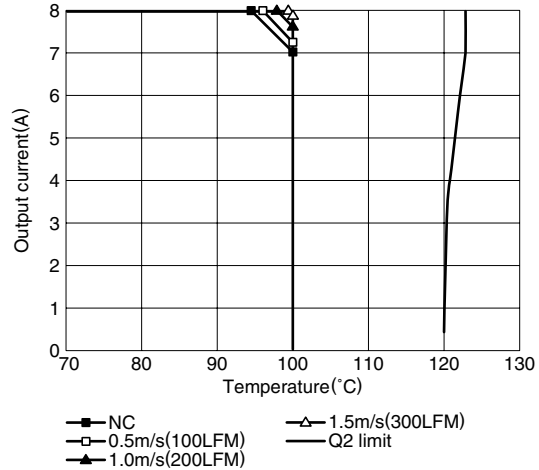
OUTPUT POWER-AMBIENT TEMPERATURE (DERATING)

MAXIMUM OUTPUT CURRENT vs. AMBIENT TEMPERATURE(Ta)

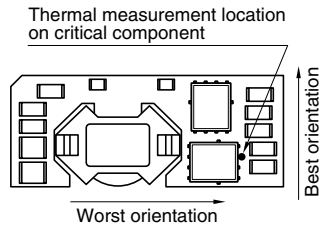
iAA05015A033V



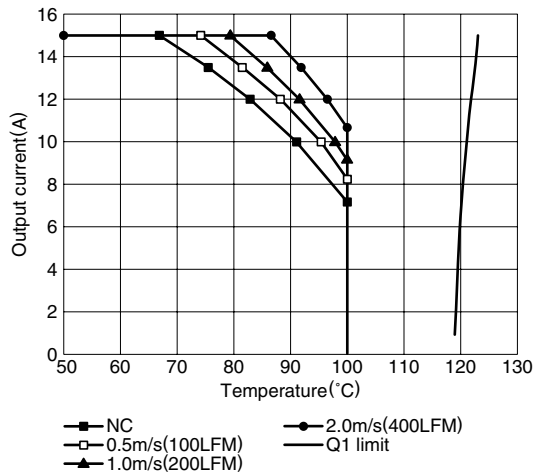
iAA05015A008V



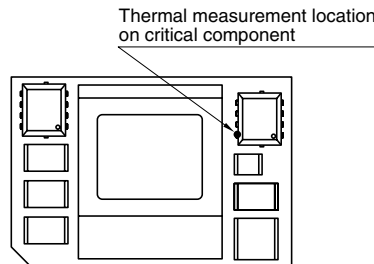
Tc TEMPERATURE MEASUREMENT POINT AND WIND DIRECTION



iBA05008A008V



Tc TEMPERATURE MEASUREMENT POINT



COMMON SPECIFICATIONS

Temperature and humidity		
Temperature range	Operating(°C)	-40 to +117 [Temperature at the measurement point in the above drawing]
	Storage(°C)	
Humidity range	Operating(%)RH	10 to 85[Without dewing]
	Storage(%)RH	
Vibration and shock		
Vibration	5 to 50Hz	Acceleration: 0.5G
	50 to 500Hz	Acceleration: 1.5G
Shock	Acceleration	50G[Half sine wave, 3 directions]
	Pulse duration	6ms