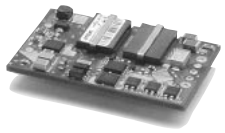
DC to DC Converters
Distributed Power Supplies for Systems, Insulation Type

Quarter Brick Type iQA Series

Power supply systems for infrastructure devices used in communication networks primarily use brick-type DC to DC converters.
As the voltage used for LSIs continues to drop, power supplies are expected to provide lower output, higher efficiencies, and lower noise levels.
To meet these demands, we have developed quarter brick types that are smaller in size, produce low output voltage, and provide two outputs.



FEATURES

- Wide input voltage range (DC.36 to 75V)
- Low output voltage products with two outputs are available.
- High efficiency: 87.5%(5.0 and 3.3V outputs)
- Heat sink is not required.
- Remote ON-OFF function
- Output voltage external variable function
- Various protective functions
- Each output can be controlled independently.
- Flexible current distribution between the two outputs

PRODUCT IDENTIFICATION

iQA	48	015A	050	M	-○○○
(1)	(2)	(3)	(4)	(5)	(6)

(1) Type name
iQA: Quarter brick type
(2) Rated input voltage
(3) Output current
(4) Output voltage(The higher of the voltages of the two outputs)
(5) Multi-output
(6) Option code
001: Standard(Negative on/off logic, Pin length: 3.68mm, Variable output: Variable independently)
000: Positive on/off logic, Pin length: 3.68mm, Variable output: Variable independently
002: Positive on/off logic, Pin length: 3.68mm, Variable output: Both outputs are variable simultaneously.
003: Negative on/off logic, Pin length: 3.68mm, Variable output: Both outputs are variable simultaneously.
004: Positive on/off logic, Pin length: 2.79mm, Variable output: Variable independently
005: Negative on/off logic, Pin length: 2.79mm, Variable output: Variable independently
006: Positive on/off logic, Pin length: 2.79mm, Variable output: Both outputs are variable simultaneously.
007: Negative on/off logic, Pin length: 2.79mm, Variable output: Both outputs are variable simultaneously.

- The first number in the three digit option code for iQA48024A033M-1 is “1”.

PART NUMBERS AND RATINGS

Output voltage(V)	Current(A)	Part No.
2.5/1.8	24	iQA48024A025M
3.3/1.8	24	iQA48024A033M–1
3.3/2.5	24	iQA48024A033M–0
2.5/1.8	15	iQA48015A025M
3.3/2.5	15	iQA48015A033M
5.0/3.3	15	iQA48015A050M

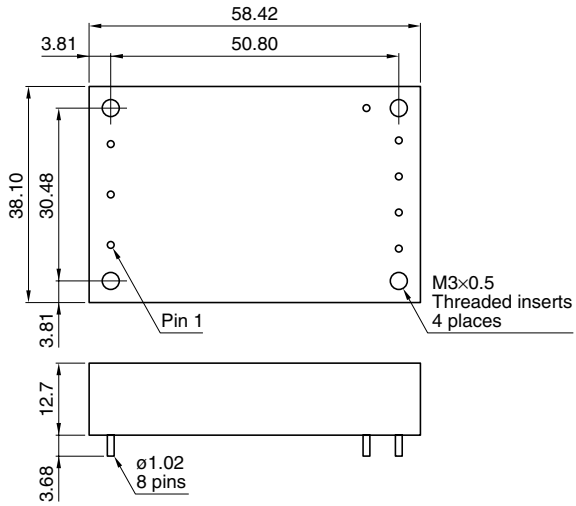
SPECIFICATIONS AND STANDARDS

Part No.			iQA48015A050M	iQA48015A033M	iQA48015A025M	iQA48024A033M–0	iQA48024A033M–1	iQA48024A025M
Rated output voltage and current*1			5.0/3.3V • 15A	3.3/2.5V • 15A	2.5/1.8V • 15A	3.3/2.5V • 24A	3.3/1.8V • 24A	2.5/1.8V • 24A
Maximum output power		W	75	50	37.5	72	67.5	53.7
Input conditions								
Input voltage Edc		V	36 to 75[Continuation]/100[Transient 100ms]					
Input current		A	3.0max.	3.0max.	3.0max.	3.0max.	3.0max.	3.0max.
Inrush transient*2		A^2S	0.1	0.1	0.1	0.1	0.1	0.1
Efficiency		%	87.5typ.	85typ.	85typ.	85typ.	85typ.	83typ.
Output characteristics								
Output voltage 1 Edc		V	5	3.3	2.5	3.3	3.3	2.5
Output voltage 2 Edc		V	3.3	2.5	1.8	2.5	1.8	1.8
Voltage adjustment range		%	–10 to +10	–10 to +10	–10 to +10	–10 to +10	–10 to +10	–10 to +10
Maximum output current (Total value)		A	15	15	15	24	24	24
Maximum output current (Each output)		A	15	15	15	15	15	15
Minimum output current		A	0	0	0	0	0	0
Output voltage initial setting		%	±1.6max.	±1.6max.	±3max.	±1.6max.	±1.6max.	±3max.
Independent trim	Overvoltage protection(V_1)	V	5.6 to 6.7	—	—	3.7 to 4.4	—	—
	Overvoltage protection(V_2)	V	5.0typ.	—	—	3.3typ.	—	—
Tracking trim	Overvoltage protection(V_1)	V	5.6 to 7.5	3.7 to 5.0	—	3.7 to 5.0	3.7 to 5.0	—
	Overvoltage protection(V_2)	V	3.7 to 5.2	2.9 to 4.0	—	2.9 to 4.0	2.9 to 4.0	—
Overcurrent protection		A	17typ.	19typ.	17typ.	29typ.	29typ.	29typ.
Voltage stability	Line regulation	mV	5max.(2typ.)	5max.(2typ.)	5max.(2typ.)	5max.(2typ.)	5max.(2typ.)	5max.(2typ.)
	Load regulation	mV	15max.(5typ.)	15max.(5typ.)	15max.(5typ.)	15max.(5typ.)	15max.(5typ.)	15max.(5typ.)
	Temperature regulation	mV	75max.(10typ.)	75max.(10typ.)	75max.(10typ.)	75max.(10typ.)	75max.(10typ.)	75max.(10typ.)
	Dynamic response	mV	±100typ.[50 to 75%, sudden load change]					
Ripple noise Ep-p		mV	80max.	80max.	80max.	80max.	80max.	80max.
Start up time		ms	62typ.	62typ.	62typ.	62typ.	62typ.	62typ.
Auxiliary functions								
Overvoltage protection			Yes(Automatic recovery)					
Overcurrent protection			Yes(Automatic recovery)					
Alarm output			No					
Over-temperature protection			Yes(Automatic recovery)					
Remote ON-OFF			Yes					
Remote sensing			No					
Parallel operation			Impossible					
Output voltage adjustment			Yes					
Master slave operation			No					
Standards								
Safety standards			UL60950 and VDE0805 approved. EN60950 approved.					
Constructions								
External dimensions		mm	12.7×38.1×58.4[H×W×L]					
Weight		g	39typ.					
Mounting method			Mounted from the terminal side (soldered).					
Oscillating method			Fixed frequency					
Oscillating frequency		kHz	280typ.	280typ.	280typ.	280typ.	280typ.	280typ.

*1 Verify the rated current (maximum output current) because this involves derating.
*2 Applies only to the primary surge. The power supply does not have an input fuse, so make sure to install an external fuse when using this product.

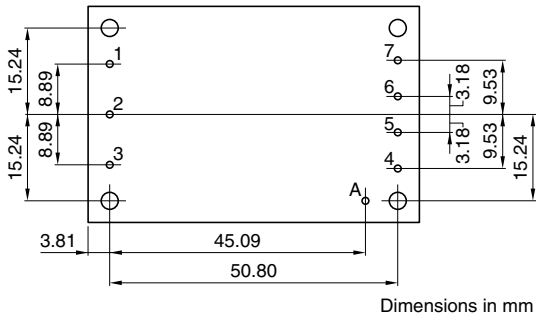
SHAPES AND DIMENSIONS

Bottom view



TERMINAL DESIGNATIONS AND FUNCTIONS

Top view



Dimensions in mm

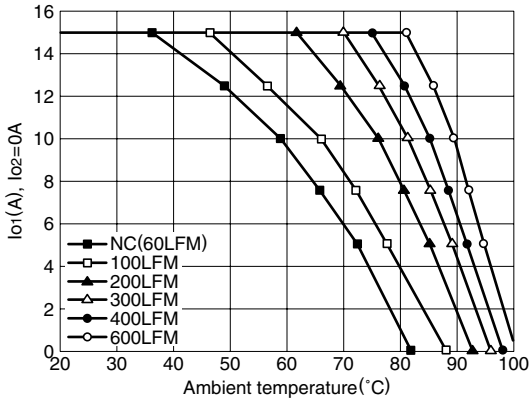
1	+Vin	DC input terminal (+)
2	On/Off(–)	The output can be turned on/off externally (Negative logic).
3	–Vin	DC input terminal (–)
4	+V_{O2}	DC output terminal2 (+)
5	Output RTN	DC output terminal (–)(Common for V_{O1} and V_{O2})
6	V_{O1} Trim	The output voltage can be varied by an external resistor (V_{O1}).
7	+V_{O1}	DC output terminal1 (+)
A	V_{O2} Trim	The output voltage can be varied by an external resistor (V_{O2}).

OUTPUT POWER-AMBIENT TEMPERATURE (DERATING)

MAXIMUM OUTPUT CURRENT(OUTPUT1) vs. AMBIENT TEMPERATURE(Ta)

iQA48015A050M

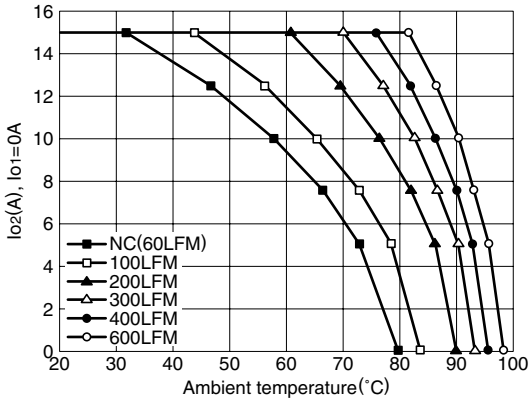
Output 2 represents the output when no load is present.
Wind direction: From pin 3 to pin 1, Vin=48V



MAXIMUM OUTPUT CURRENT(OUTPUT2) vs. AMBIENT TEMPERATURE(Ta)

iQA48015A050M

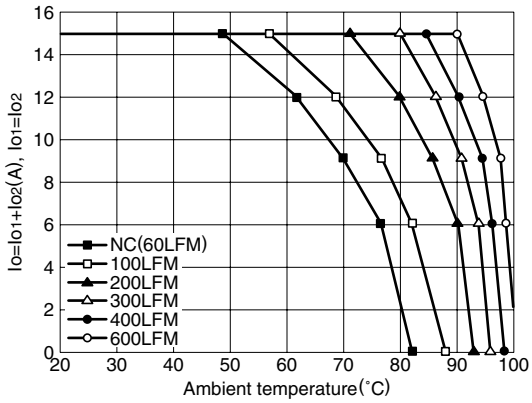
Output 1 represents the output when no load is present.
Wind direction: From pin 3 to pin 1, Vin=48V



MAXIMUM OUTPUT CURRENT(TOTAL VALUE) vs. AMBIENT TEMPERATURE(Ta)

iQA48015A050M

Output 1 and 2 represent the outputs when a balanced load is present.
Wind direction: From pin 3 to pin 1, Vin=48V



COMMON SPECIFICATIONS

Temperature and humidity		
Temperature range	Operating(°C)	–40 to +110[Temperature base plate]
	Storage(°C)	–55 to +125[Ambient temperature of the power supply]
Humidity range	Operating(%)RH	10 to 85[Without dewing]
	Storage(%)RH	
Vibration and shock		
Vibration	5 to 10Hz	Acceleration: 0.5G
	10 to 200Hz	Acceleration: 1.5G
Shock	Acceleration	50G[Half sine wave, 3 directions]
	Pulse duration	6ms
Withstand voltage		
Withstand voltage	Input terminal to output terminal	DC.1.5kV[1min, Normal temperature, normal humidity, cutout current 10mA]