Product specification

MPA1968 series

Power Supply for LED

PS E UL Japan

muRata INNOVATOR IN ELECTRONICS

Ordering Guide	Constant current power supply	
Model Name	Max current(±5%)	Output voltage range
MPA1968A	1050mA	30～50V
MPA1968B	900mA	30～50V
MPA1968C	750mA	30～50V

RoHS-Y(B)

Input Characteristics:(Ta=25℃)

		Min	Typ	Max	Units
Input Voltage Operating Range		90	100/242	267	Vac
Input Frequency		47	50/60	63	Hz
Inrush Current	AC100V(25℃ Cold start)			10	A
	AC242V(25℃ Cold start)			20	A

Model Name	Input current(Typ) At max current Output Voltage:50V		Power Factor (Typ) At max current Output Voltage:50V		Input Power(Typ) At max current Output Voltage:50V		Input rated capacity Output Voltage:50V
	AC90V	AC267V	AC100V	AC242V	AC100V	AC242V	
MPA1968A	0.71A	0.26A	0.9954	0.931	63.4W	61.8W	59VA
MPA1968B	0.60A	0.22A	0.9935	0.920	53.9W	52.9W	55VA
MPA1968C	0.51A	0.19A	0.9875	0.898	45.1W	44.3W	51VA
Stand-by Power		Non-communication state			AC100V:0.13Wtyp, AC242V:0.23Wtyp		

Output Characteristics(*1):(Ta=25℃)

Model Name	Output current(±5%)			Efficiency(Typ) At max current			
	Average current(Typ)		Ripple current(p-p)	Output voltage:30V		Output voltage:50V	
	Min(*2)	Max	Typ(At max current)	AC100V	AC242V	AC100V	AC242V
MPA1968A	11～53mA	1050mA	210mA	82.0%	82.7%	84.0%	86.1%
MPA1968B	9～45mA	900mA	150mA	81.6%	82.4%	84.6%	86.2%
MPA1968C	8～38mA	750mA	140mA	81.4%	82.0%	84.2%	85.8%

(*1)Output characteristics are measured by LE-5150-2(KEISOKUGIKEN) as a LED-load .

(*2)Depend on Dimming method. Max current value×(1～5%)

Environmental Characteristics:

	Condition	Min	Typ	Max	単位
Operating Temp. Range		-10 (*)		50	℃
Operating Humidity	Non-condensing	5		95	%
Storage Temp. Range		-20		55	℃
Cooling condition	Natural air cooling				
MTBF	EIAJ RCR-9102B	10			year
Estimated life	Ta=40℃, Max Voltage/Max load	50000			hour
Weight			591		g
Sinusoidal Vibration	Vibration frequency:10～55Hz、Vibration acceleration:2G				
Shock	10G				
RoHS	compliant				
Warranty	1 Year				
Manufacturing Country	China				

(*)Start-up at -20℃

Safety:

Safety standards	Electrical Appliance Safety Low (1st clause) EN61347-1, EN61347-2-13(CB REPORT):planning
Harmonics	EN61000-3-2 class C
Conducted emission	PSE(1st clause)、EN55015 CLASS B, EN55022 CLASS B
Insulation resistance	30MΩ or more (Input to Output-Reinforced、Input to Chassis-Basic)
Withstand voltage	AC4000V (60Hz Primary-Secondary)、Leak current:10mA or less AC1600V (60Hz Primary-FG)、Leak current:10mA or less
Leakage current	0.5 rms or less (AC242V 60Hz normal temperature/normal humidity)

Protection Characteristics:

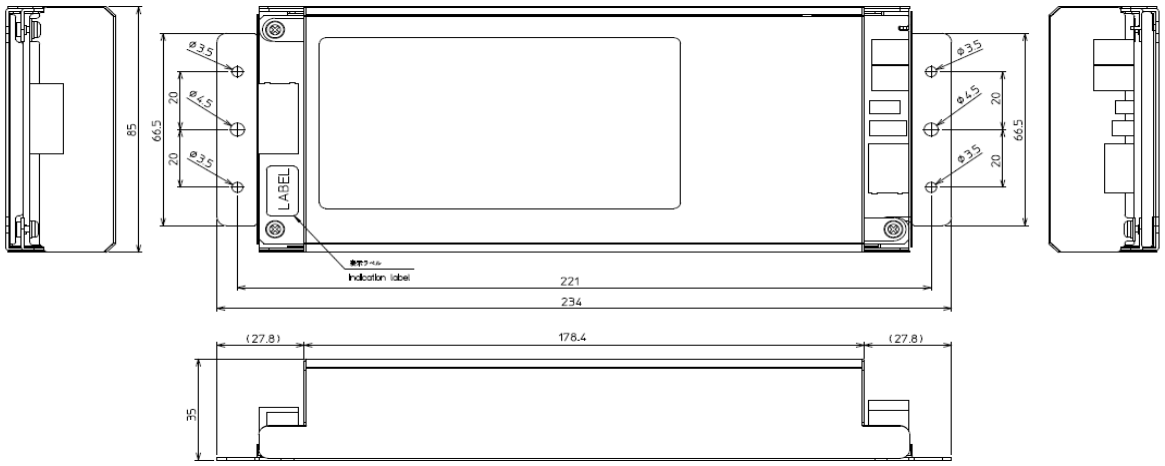
	Return method
Output shortn Protection	Auto recovery(*)
Output Open Protection	Auto recovery(*)

(*)It's need about 10 seconds at the autorecovery.
When LED is connected, be careful to be possible to flow rush current to LED.
AC re-input as much as possible.

Immunity:

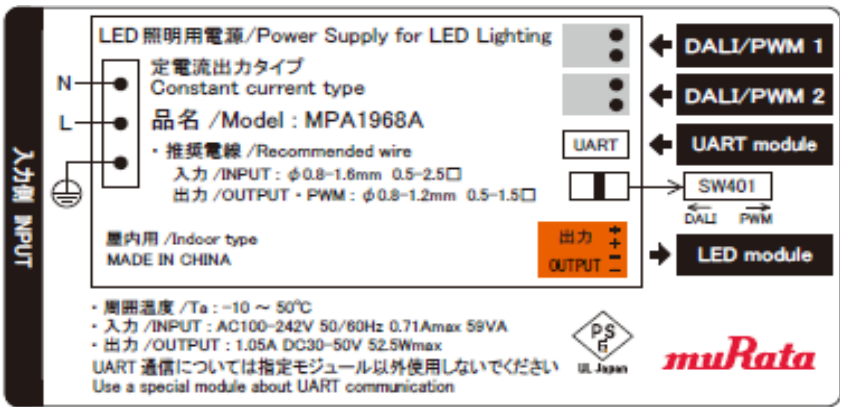
Electrostatic discharge	IEC61000-4-2	Level 3
Electrical fast transient burst	IEC61000-4-4	Level 3
Surge	IEC61000-4-5	Level 3

Mechanical Dimensions・Label



Unit : mm

LABEL1　　(Ex. MPA1968A)



Input/Output Terminal

AC Input wire

Parts Name	Maker Type Name	Terminal No.	Description
CN1	235−503/342−325 (WAGO)	1 2 3	AC Neutral AC LIVE FG

Output Connector

Connector No.	Maker Type Name	Terminal No.	Description
CN101	235−104/330−000 (WAGO)	1 2 3 4	LED Output− (Cathode) LED Output− (Cathode) LED Output+ (Anode) LED Output+ (Anode)

＊ Terminal 1 and 2 are same voltage. Terminal 3 and 4 are same voltage.

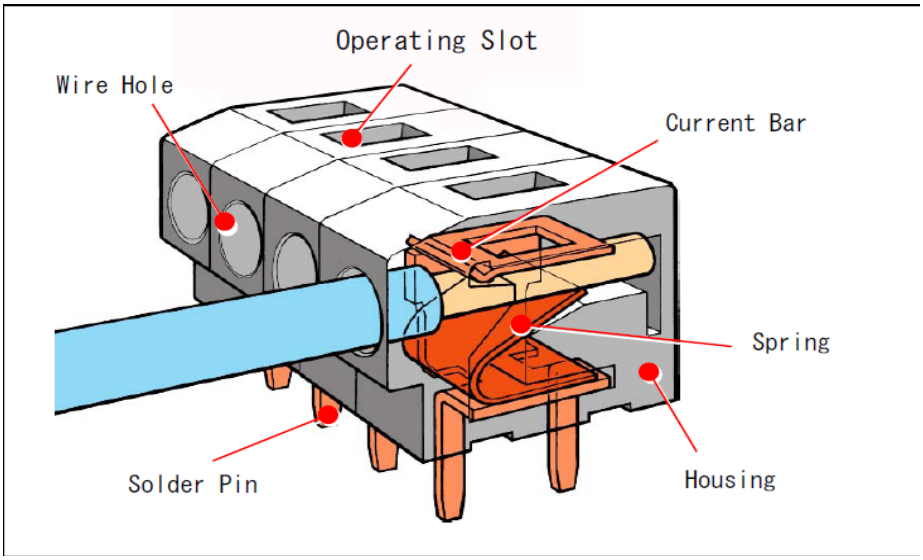
Signal Connector

Connector No.	Maker Type Name	Terminal No.	Description
CN201	B4B-PH-K-S (JST)	1 2 3 4	3.3V Output (200mAmax) UART_RX (Reception) UART_TX (Transmission) GND
CN401	250−202 (WAGO)	1 2	DALI or PWM SIGNAL DALI or PWM SIGNAL
CN402	250−202 (WAGO)	1 2	DALI or PWM SIGNAL DALI or PWM SIGNAL

＊CN401、CN402 No polarity. One is for connections.

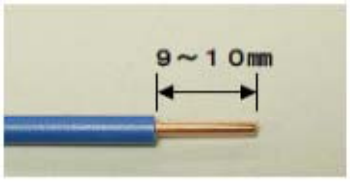
Instruction for Connecting Conductor

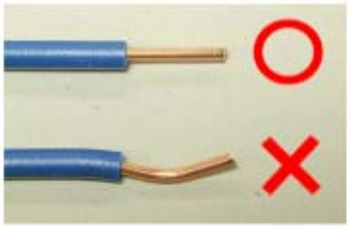
■ Structure : Part name and structure of terminal block.



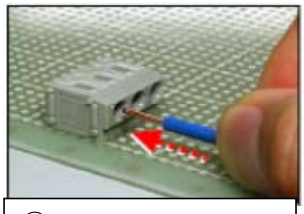
■ Stripping of Wire

Please strip a conductor's stripped length related as drawings.
Please fix splayed, bent or twisted wire.

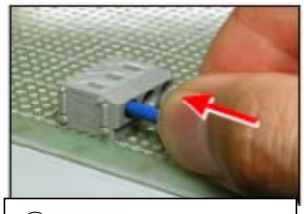




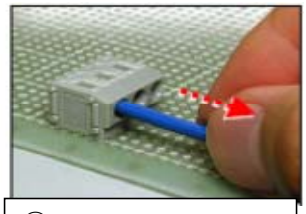
■ Connecting Please follow the instructions



① Insert a wire to the wire hole.

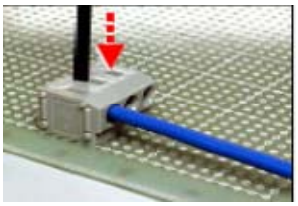


② A wire must be inserted to a stop position.

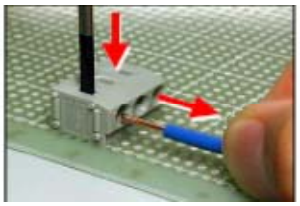


③ Pull a wire slightly to check if connecting has been done completely.

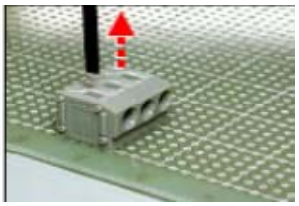
■ Removal Please follow the instructions



① Put a screwdriver to the operating slot.



② Hold down a screwdriver, a conductor can be releaase



③ Put off a screwdriver.

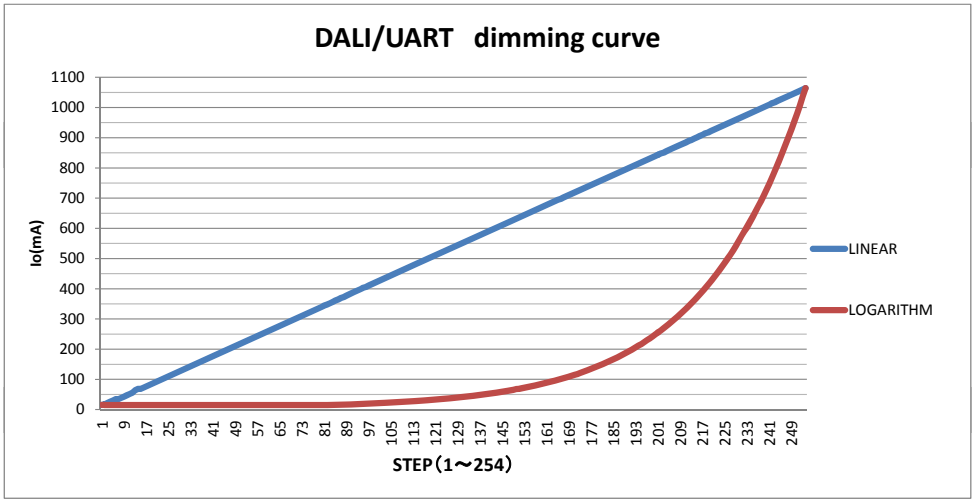
【Dimming Specifications】

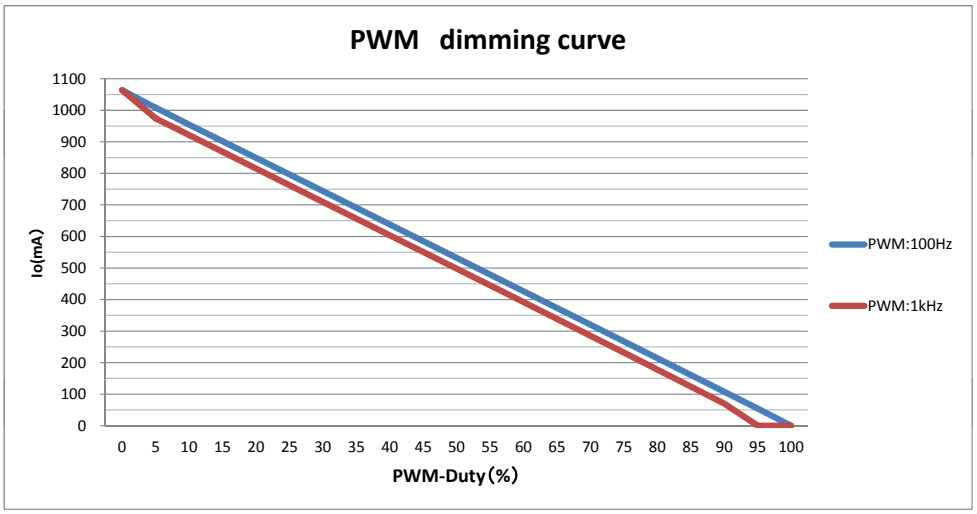
This product supports UART, DALI and PWM mode.
In the case of UART, DALI and PWM Dimming mode, change a dip switch (SW401) to each mode before AC input. (Refer as follows)

Dimming	Input Connector	Communication standard・Dimming Specifications
UART	CN201	Smart Lighting System UART Command Specification SW401 posision：DALI side (Use a Murata special module about UART.)
DALI	CN401/CN402	IEC62386 SW401 posision：DALI side
PWM	CN401/CN402	Input pulse 10-16Vo-p Frequency 100Hz－1KHz DUTY 0－95%typ Ex.） Output current：Duty 0%・・・1050mA、95%・・・OFF、f:1KHz Output current：Duty 0%・・・1050mA、 98%・・・OFF、f:100Hz SW401 posision：PWM side PWM sink current：2mAmax

＊CN401 and CN402 cab be used one, other is for connections.

Dimming characteristics（Masterpiece:MPA1968A）





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【Instruction Manual】

Before using the Power Supply Unit
Pay attention to all warnings and cautions before using the PSU.
Incorrect usage could lead to an electrical shock, damage to the PSU or a fire hazard.

★Warning & Caution

・Do not modify and remove the cover.
・If any failure or trouble occurs because of utilizing the power supply unit without reflecting the described contents on this specification, Murata cannot assure such trouble.
・Do not touch the internal components, they may have high voltage or high temperature. You may get electrical shock or burned.
・Definitely avoid to use the power supply unit by the excessive input voltage, output voltage, output current and ambient temperature as defined on this specification.
The excessive current, voltage and temperature will cause the deterioration of the components or abnormal heat, both of which may affect not only to shorten the unit's life-long but also to damage and break the unit.
In a case of LED VF 30V or less because of LED chip dispersion, please make sure to evaluate and confirm the quality upon mounting the power supply unit to your product.
But don't use it under the LED VF 25V or less.
・Use the PSU after confirm the correct connection of input and output.
・Be sure not to scratch and damage the input leads. Never transfer the unit by holding and pulling any lead wire.
・If PSU is dropped, absolutely not to use it any more.
・Make sure not to install and/or store the unit under the environment as stated below because such will cause the insulation deterioration.

① Make sure to avoid storing the unit under the condition of high temperature, high humidity or direct sunlight which are out of the standard on this specification.
② Ambient air containing the corrosive gas. (Cl2, H2S, NH3, SO2, NOX, etc.)
③ Places which have the fear to be splashed with water, oil, organic solvent, etc.
④ Places with a high concentration of dusty places.
⑤ Other environment correspondingly mentioned above.

・Make sure not to install and/or store the unit under the environment as stated below because such will cause the insulation deterioration.

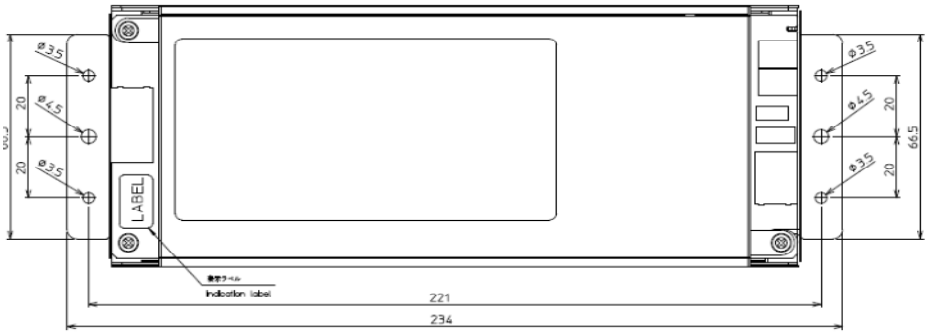
① If any alien substance attached on terminals, it may cause the contact failure or insertion deterioration.
② The use of the silicon rubber or silicon bond which contain a high percentage of dimethylpolysiloxane may cause to trigger the contact failure of volume, potentiometer volume or switch. Make sure to use such rubber or bond with the percentage of dimethylpolysiloxane 0.1% or less.

・PSU can not be used under the condition of the series operation.
・Rust may occur in the chassis because of use environment.
・This specification regulates the quality of the power unit, if nothing specially defined. When using the power supply unit, make sure to evaluate and confirm the quality upon mounting the power supply unit to your product.

【Mounting】

Mounting method

・Please use the place at 50℃ or less around the PSU ambient.
・Please connect the thick and short wire to the FG terminal for safety and EMI.
・Please separate Input wire and Output wire surely.
・Please refer as follows about the recommended Wire for input, output and dimming.
AC-intput wire：φ0.8-1.6mm, 0.5-2.5mm㎡ single wire （Strip length 9-10mm）
LED Output wire/Dimming wire for DALI and PWM：
φ0.8-1.2mm, 0.5-1.5mm㎡ single wire （Strip length 9-10mm）
・Please fix a screw about the installation of the power supply more than one place of one side. (more than two places in total) （Screw hole：φ3.5×4、Φ4.5×2）

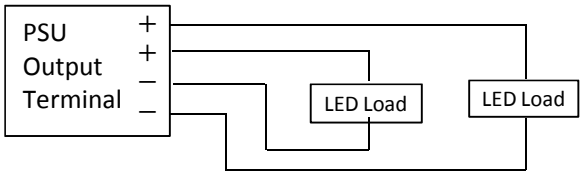


【Parallel Operation】

・Series Operation is not possible.
・For parallel operation, either method (1) or (2) is possible. But please caution as follows.
＊)PSU output [＋] and [＋] are connected in PSU. [－] are the same.
Therefore this PSU are not 2 output.

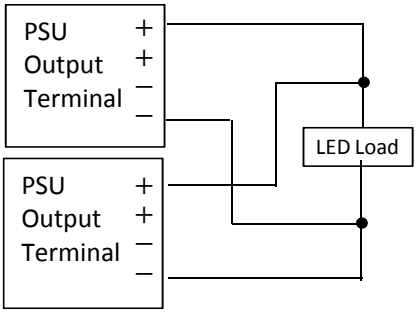
Parallel 1：In a case of operating the plural LEDs for one power supply.

If LED Vf voltage are different, the current may be partial.
Please add a balance circuit not to become so.



Parallel 2：In a case of operating twe Power supplies for one LED.

The total current of two power supplies pass through in the LED.
And please confirm the leakage current as the system.



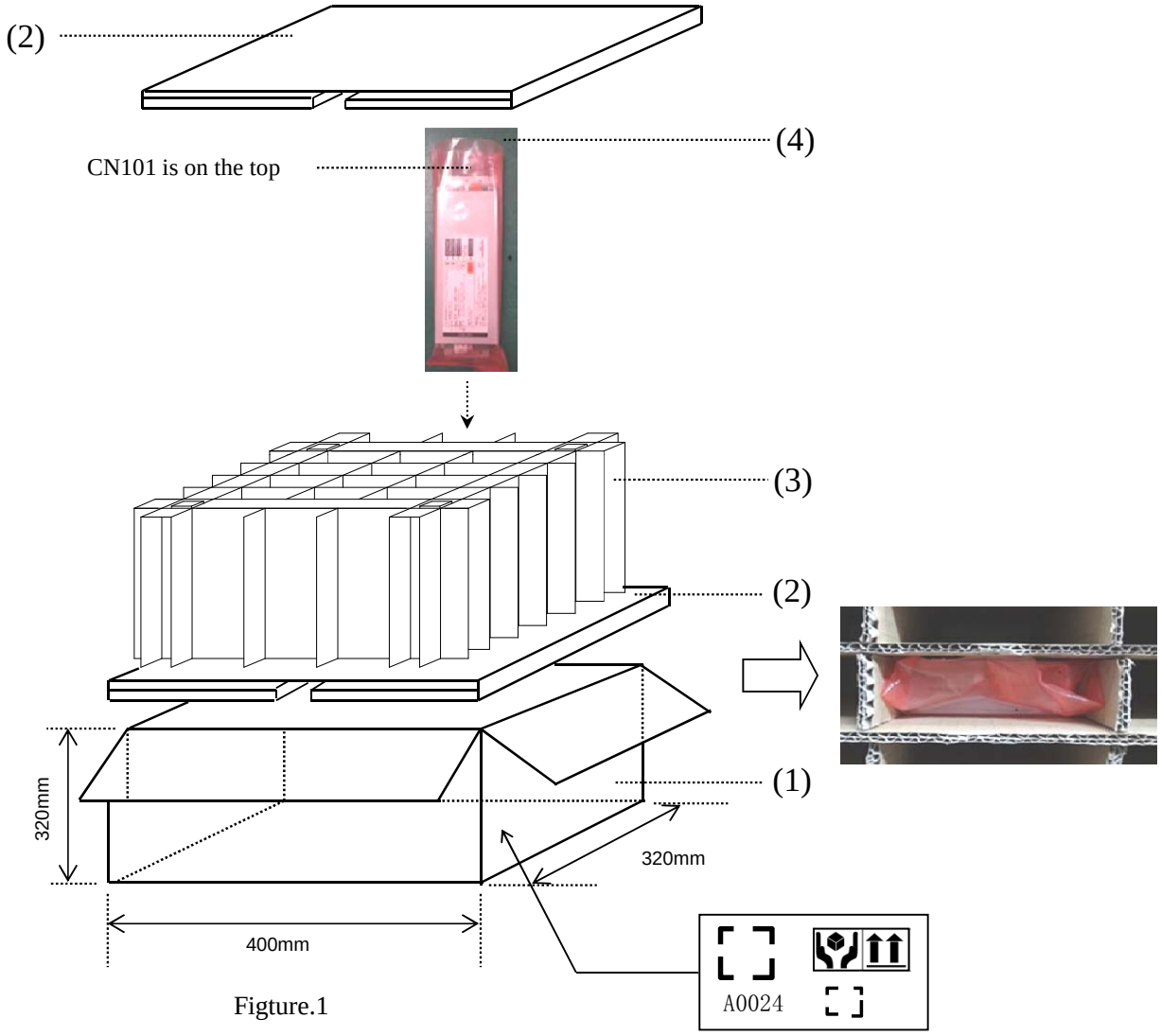
PACKING SPECIFICATION

Use for the Model MPA1968A/MPA1968B/MPA1968C series.

NO.	PARTS NAME	Q'TY
1	PACKING BOX	1/12
2	BASE PAD	2/12
3	PARTITION BOARD	1/12
4	Small PE Bag	12/12

PACKING PROCESS :

Note: 1. It contains 12 pieces of product in every box.



Figture.1