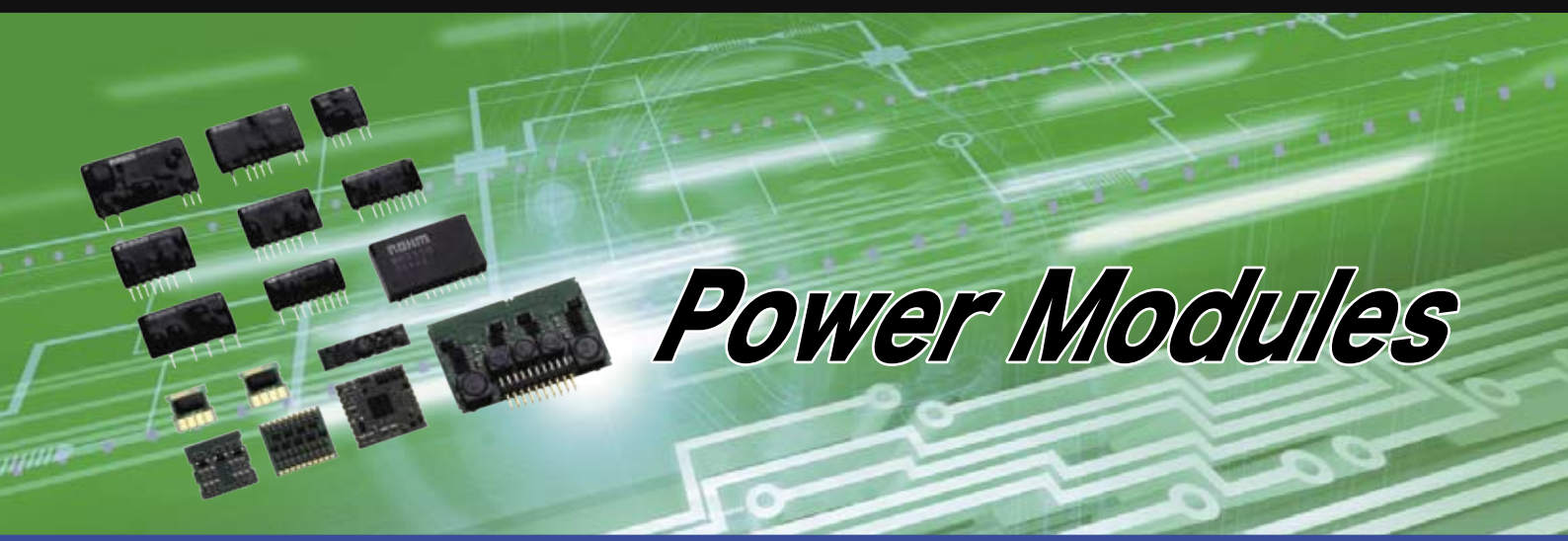
Product Catalog
2009-1st

Pb Free
ROHM Electronic Components

RoHS
Directive Compliance



Power Modules

Modules

Excellence in Electronics

ROHM

www.rohm.com

●Non-isolated AC/DC converters

No transformers for lower energy consumption and reduced size.
Standby power consumption is also reduced.

●Isolated AC/DC converters

Facilitates construction of an isolated power supply.
Efficient conversion contributes to energy-saving designs.

●Step-down DC/DC converters

Configure an efficient step-down power supply by simply adding an electrolytic capacitor.
Helps reduce set power consumption.

●Step-up DC/DC converters

Configure an efficient step-up power supply by simply adding an electrolytic capacitor.
Ideal for LCD power supplies.

●Variable Output DC/DC Converters

Capable of varying the output voltage using an external signal.
Ideal for controlling DC motors.

●Isolated DC/DC Converters

Isolated format ideal for industrial devices.

●High Power LED Drivers for Illumination

High power drivers optimized for lighting.
Precise constant current.

●Memory Modules

Memory modules for recycling, ink and tape index management.

●Custom Modules

ROHM's advanced, high-density mounting technology, combined with an extensive track record and expertise in a variety of fields - automotive, digital, AV devices, industrial devices, and more – make it possible to develop function modules to meet any need.

CONTENTS

Power Modules Lineup

Non-isolated AC/DC converters (P.5)

Part No.	Input voltage(V)	Output voltage(V)	Output current(mA)	Dimensions(mm)	Package
BP5038A1	DC:113 to 170 AC:80 to 120*	+5	30	18.0 × 16.8 × 9.1	SIP6
BP5063-5			200	28.2 × 17.9 × 9.1	SIP10
BP5038A		+12	30	18.0 × 16.8 × 9.1	SIP6
BP5033-12			100	28.2 × 15.5 × 10.5	SIP10
BP5037B12			200	28.2 × 16.8 × 9.0	SIP10
BP5039B12			300	35.0 × 18.0 × 9.1	SIP12
BP5067-12			350	34.5 × 20.0 × 9.9	SIP12
BP5037B15		+15	170	28.2 × 16.8 × 9.0	SIP10
BP5039-15			200	35.0 × 19.5 × 9.1	SIP12
BP5067-15			300	35.0 × 22.0 × 9.2	SIP12
BP5039A		+24	200	35.0 × 19.5 × 9.1	SIP12
BP5034D5	DC:113 to 195 AC:80 to 138*	+5	100	28.2 × 15.7 × 10.0	SIP10
BP5034D12		+12	100	28.2 × 15.7 × 10.0	SIP10
BP5034D15		+15	80	28.2 × 15.7 × 10.0	SIP10
BP5034B20		+20	70	28.2 × 15.7 × 10.0	SIP10
BP5034D24		+24	50	28.2 × 15.7 × 10.0	SIP10
BP5075-5	DC:–113 to –170 AC:80 to 120*	-5	120	20.5 × 19.5 × 10.7	SIP7
BP5035A5			200	28.2 × 17.9 × 9.1	SIP10
BP5061-5			350	34.5 × 19.1 × 9.1	SIP12
BP5062A5			500	34.5 × 21.5 × 10.9	SIP12
BP5065C		-12	90	26.1 × 15.2 × 7.2	SIP9
New **BP5090-12**			200	26.5 × 21.5 × 10.0	SIP8
BP5061			300	35.0 × 19.1 × 9.1	SIP12
BP5062A			500	34.5 × 21.5 × 9.9	SIP12
BP5068A			800	34.5 × 21.5 × 11.3	SIP12
BP5068-15		-15	800	35.0 × 22.0 × 11.5	SIP12
BP5068A24		-24	600	34.5 × 21.5 × 11.3	SIP12
BP5041A5	DC:226 to 358 AC:160 to 253*	+5	100	32.5 × 19.3 × 11.5	SIP10
BP5041A		+12	100	32.5 × 19.3 × 11.5	SIP10
BP5048			300	35.0 × 22.0 × 9.2	SIP12
BP5041B15		+15	80	32.5 × 19.3 × 11.5	SIP10
BP5047B15	DC:180 to 390		150	32.5 × 19.1 × 10.1	SIP10
BP5048-15	DC:226 to 358 AC:160 to 253*		200	35.0 × 22.0 × 9.2	SIP12
BP5726-15			800	22.5 × 27.1 × 7.8	SIP7
BP5047A24		+24	150	34.5 × 19.1 × 9.2	SIP12
BP5048-24			200	35.0 × 22.0 × 9.2	SIP12
BP5045A5	DC:–113 to –390 AC:80 to 276*	-5	200	28.2 × 17.9 × 10.1	SIP10
BP5045A		-12	200	28.2 × 17.9 × 10.1	SIP10
BP5053-12	DC:–240 to –390 AC:170 to 276 *		200	28.2 × 17.9 × 10.1	SIP10
BP5055-12	DC:–240 to –420, AC:170 to 300V* DC:–420 to –600, AC:300 to 425V*		250 130	28.2 × 21.5 × 9.9	SIP10

Non-isolated AC/DC converter (Dual Output) (P.5)

Part No.	Input voltage(V)	Output voltage(V)	Output current(mA)	Dimensions(mm)	Package
BP5081B15	DC:113 to 170 AC:80 to 120*	+5	350	40.5 × 21.5 × 12.4	SIP14
		+15	80		

Isolated AC/DC converters (P.6)

Part No.	Input voltage(V)	Output voltage(V)	Output current(mA)	Dimensions(mm)	Package
BP5710-1	DC:120 to 162, AC:85 to 115 *	+12	350	35.0 × 24.0 × 14.9	SIP11
New **BP5716**	DC:113 to 170, AC:80 to 120 *	+12	1000	24.0 × 25.5 × 10.1	SIP8
BP5718A12	DC:113 to 195, AC:80 to 138 *	+12	1000	32.5 × 21.5 × 9.3	SIP11
BP5722A12	DC:217 to 405, AC:154 to 286 *	+12	1000	32.5 × 21.5 × 9.3	SIP11
BP5723-33	DC:113 to 405, AC:80 to 286 *	+3.3	3000	38.5 × 21.5 × 10.9	SIP11
Part No.	Input voltage(V)	Output Power(W)		Dimensions(mm)	Package
BP5725	DC:119 to 405, AC:85 to 286 *	6		22.5 × 24.0 × 7.8	SIP7
☆ **BP5727**	DC:119 to 405, AC:85 to 286 *	6		22.5 × 21.5 × 7.8	SIP7
New **BP5729**	DC:120 to 372, AC:85 to 264 *	24		37.4 × 24.3 × 9.3	SIP12

☆:Under Development　*:Converted AC voltage

Step-down DC/DC converters (P.7)					
Part No.	Input voltage(V)	Output voltage(V)	Output current(A)	Dimensions(mm)	Package
BP5223	8 to 18	+5.0	0.15	17.0 × 16.8 × 10.4	SIP5
BP5224-33	7 to 18	+3.3	0.3	17.8 × 18.1 × 9.7	SIP6
BP5225	10 to 26.4	+5.0	0.15	17.0 × 16.8 × 9.7	SIP5
BP5220A	8 to 38	+5.0	1.0	28.0 × 19.5 × 12.0	SIP9
BP5221A	8 to 38	+5.0	0.5	28.0 × 19.5 × 12.0	SIP9
BP5222A	15 to 38	+12.0	0.5	28.0 × 19.5 × 12.0	SIP9
BP5226-18	20 to 46	+18.0	0.5	34.0 × 17.4 × 8.1	SIP12

Step-up DC/DC converters (P.7)					
Part No.	Input voltage(V)	Output voltage(V)	Output current(A)	Dimensions(mm)	Package
BP5122	8 to 20	–12	0.1	26.7 × 19.5 × 12.7	SIP9

Isolated DC/DC converter (P.7)					
Part No.	Input voltage(V)	Output voltage(V)	Output current(A)	Dimensions(mm)	Package
BP5324A	4.5 to 5.5	+12	0.25	38.5 × 27.0 × 13.6	SIP12

Variable output DC/DC converters (P.7)						
Part No.	Input voltage(V)	Output voltage(V)	Output current(A)	Output(ch)	Dimensions(mm)	Package
BP5811	19 to 21	0 to 19	0.3	1	27.7 × 16.0 × 7.6	SIP9

High-power LED drivers for lighting (P.9)						
Part No.	Input voltage(V)	Output voltage(V)	Output current(mA)	Number of LEDs	Dimensions(mm)	Package
BP5843A	DC:113 to 170 AC:80 to 120*	2.5 to 12	250 to 350	1 to 3	32.9 × 25.0 × 15.1	SIP11
☆ **BP5841A**		2.5 to 16	250 to 350	1 to 4	32.9 × 25.0 × 15.1	SIP11
☆ **BP5841A1**		12.5 to 36	30 to 150	5 to 9	32.9 × 25.0 × 15.1	SIP11
New **BP5842A**		2.5 to 4	700 to 960	1	32.9 × 25.0 × 15.1	SIP11
New **BP5845W**		15 to 36	250 to 360	6 to 9	46.0 × 22.2 × 18.3	DIP16
☆ **BP5847W**	DC:113 to 340 AC:80 to 240*	12.5 to 36	250 to 360	5 to 9	46.0 × 22.2 × 18.3	DIP16

☆:Under Development　*:Converted AC voltage

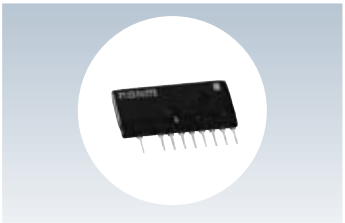
Memory modules (P.10)

ROHM offers a lineup of read-write modules in various memory capacities (1kbit to 64kbit) in the COB (Chip-On-Board) package.

Custom modules (P.11)

Custom module is ensuring compatibility with a wide range of applications, from automotive devices to industrial equipment to audio-visual products.In addition, a number of package types are available SMD, coated and flexible, allowing the customer to select the ideal solution.

Non-isolated AC/DC converters



Features

Small & Thin
Easy
Energy saving

Summary

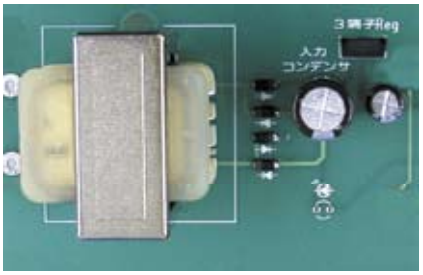
Use a commercial power supply to easily create a DC voltage source with just a few external parts.
No transformers necessary, saving energy while reducing size as well as standby power consumption.
Compatible with voltage levels throughout the world: 100 to 120VAC, 220 to 230VAC, and 100 to 230VAC.

Applications

Household appliances
Sensor power supplies
LED drivers

Compact and lightweight due to no transformer

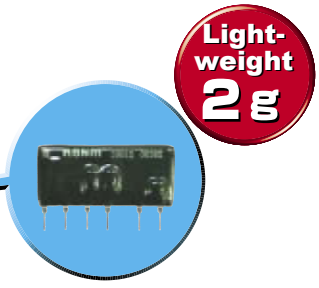
ROHM's AC/DC converter eliminates the need for a transformer, reducing size and weight and saving energy.



Three-terminal regulator and transformer

Surface mount area 1/3

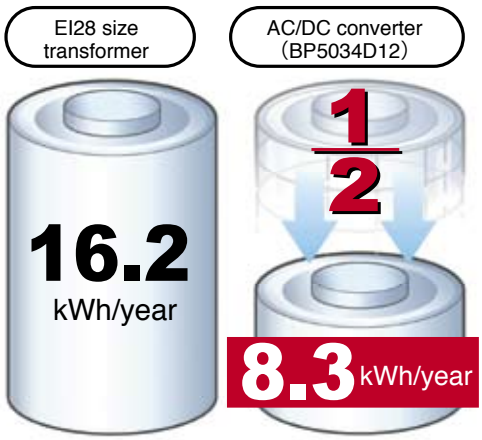
AC/DC converter



BP5039B12

Reduced standby power consumption

No transformer required, significantly reducing standby power consumption.



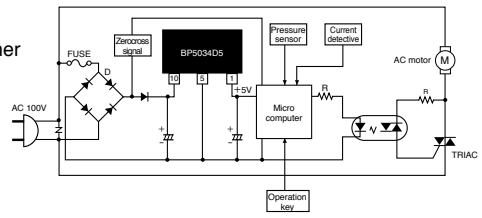
Calculation based on operating time of 7117.5 hours/year.
100V of AC voltage is converted to 12V DC (With a current flow of 0.1A)

Ideal for compact microcontrollers

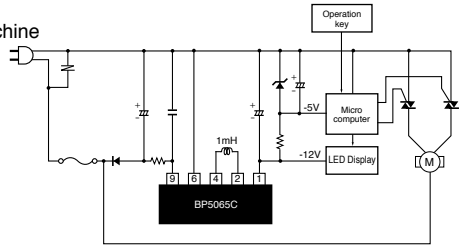
Most electronic equipment are comprised of a combination of microcontroller and motor, heater, or starter. ROHM's AC/DC converter contributes to a reduction in the size of relatively large power supply circuits by eliminating the transformer, which normally takes up most of the space. Compatible with input voltages throughout the world.

No transformer AC/DC converter applications

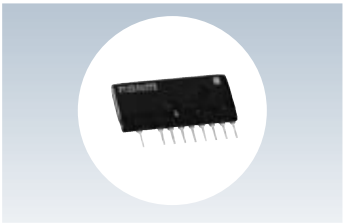
●Circuit in a vacuum cleaner



●Circuit in a washing machine



Isolated AC/DC converters



Features

Energy saving
High voltage
Wide input

Summary

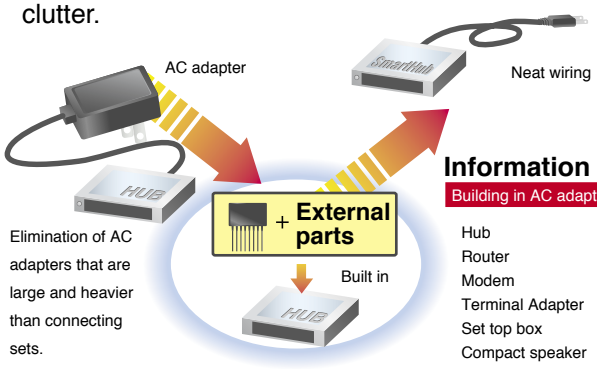
Easily configure DC output from a commercial power supply with ROHM's isolated AC/DC converter.

Applications

Household appliances
Communication equipment
Battery chargers

Built-in AC adapter

The built-in AC adapter makes it possible to eliminate the heavy AC adapter normally used, which is often bigger than the set itself, reducing clutter.



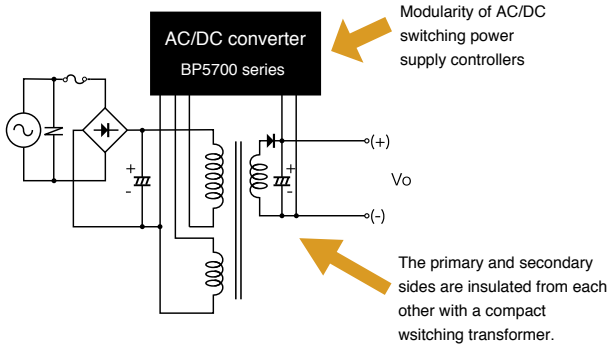
Elimination of AC adapters that are large and heavier than connecting sets.

Information device

Building in AC adapters

Hub
Router
Modem
Terminal Adapter
Set top box
Compact speaker
Etc...

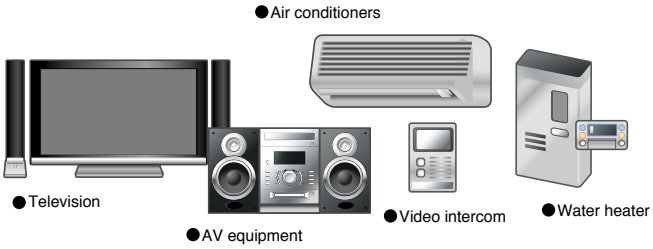
Applications of insulated-type AC/DC switching power supplies

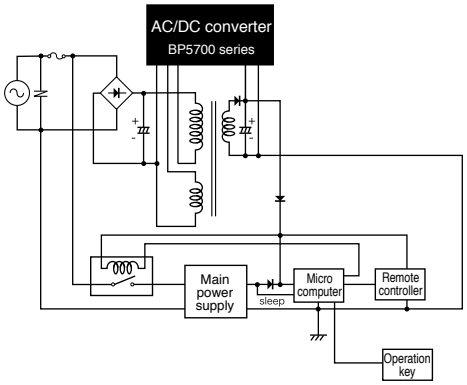


● External constants are left out.
Consult your ROHM representative for detailed applications.

Optimized for remote control equipment

It is important to minimize standby power consumption in audio-visual devices, air conditioners, water heaters, video intercoms and other home appliances in order to cut costs and lessen the burden on the environment. This can be easily achieved using ROHM' s AC/DC converter.

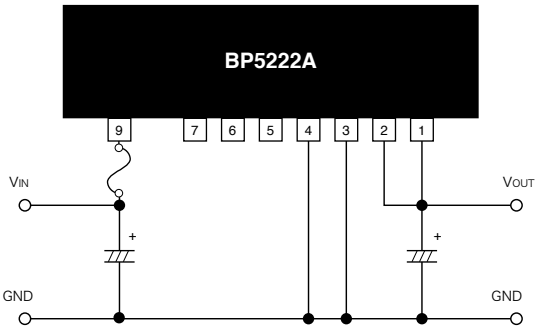




DC/DC Converters

Easily assemble an efficient on-board regulator

● Example of application circuit



As easy as three-terminal regulator in handing

High efficiency

Small

No need for radiation designs

BP5222A

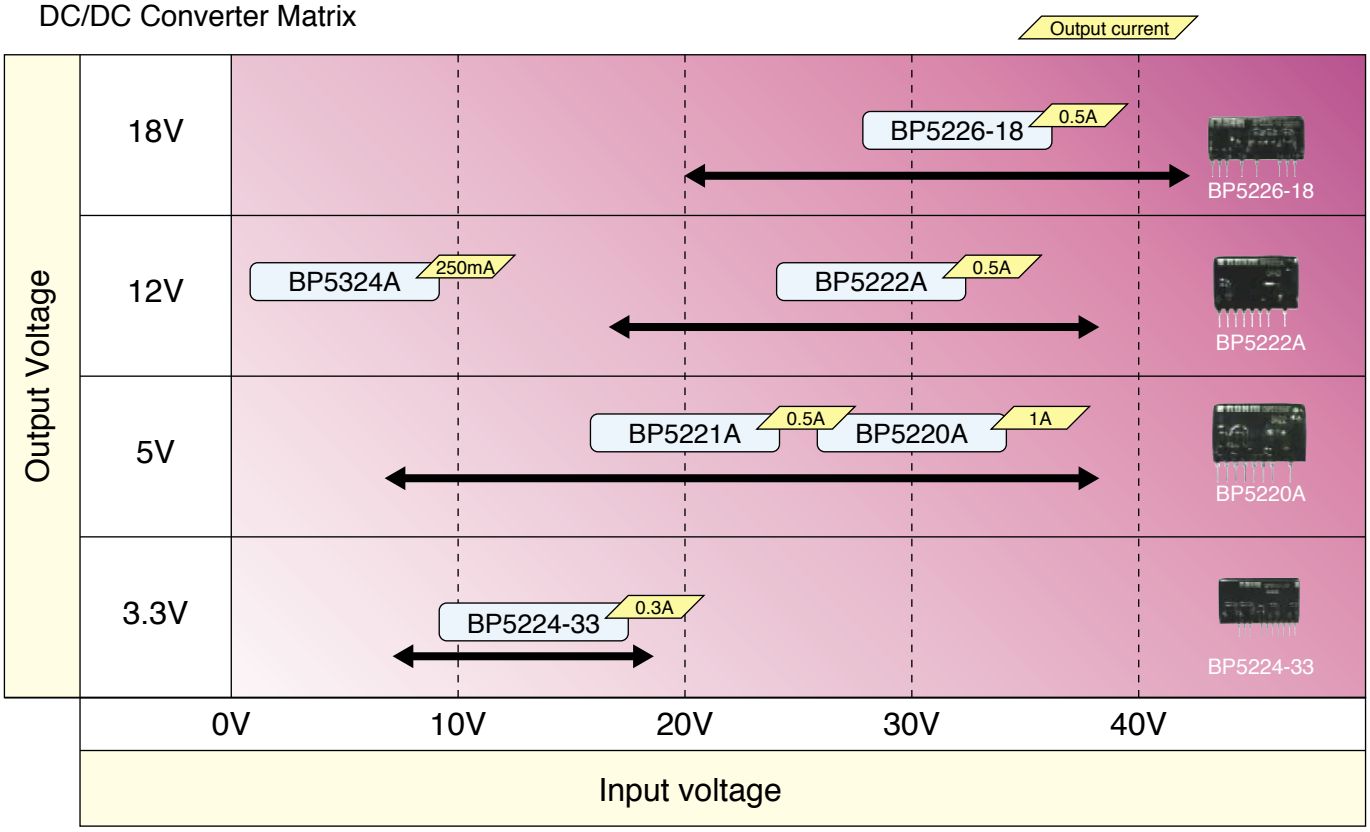
12V 0.5A output regulator

Input voltage	15 to 38V
Output voltage	12V
Max. output current	0.5A
Conversion efficiency	90%
Dimension	28.0×19.5×12.0mm

High conversion efficiency 90% Typ.

Standard Compact, High Efficiency DC/DC Converters

DC/DC Converter Matrix



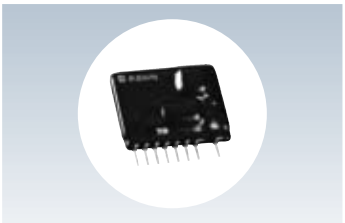
Step-down

Features

Small
Dispense with Heat sink
ON/OFF

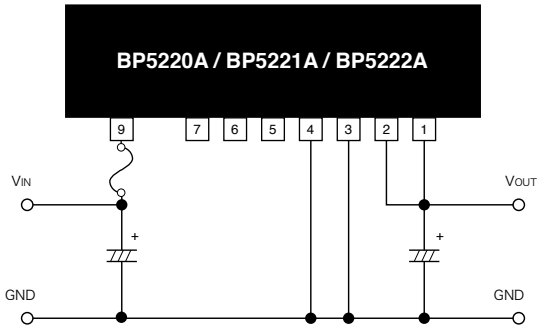
Applications

Digital consumer electronics
Household appliances
Industrial devices



Summary

Configure an efficient step-down power supply by simply adding an electrolytic capacitor.
Helps reduce set power consumption.



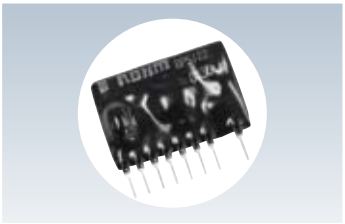
Step-up

Features

Small
ON/OFF

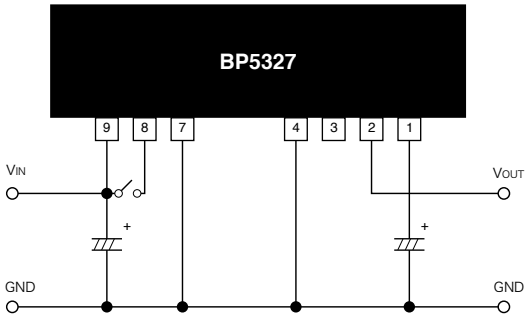
Applications

LCD power supplies
Tuner power supplies



Summary

Configure an efficient step-up power supply by simply adding an electrolytic capacitor.
Ideal for LCD power supplies.



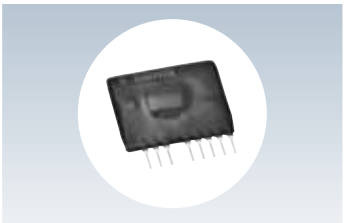
Variable output

Features

Small
Variable output

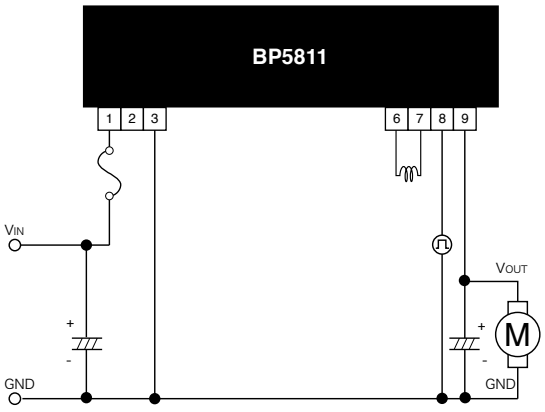
Applications

Refrigerators
Air conditioners
DC motors



Summary

Capable of varying the output voltage using an external signal.
Ideal for controlling DC motors.



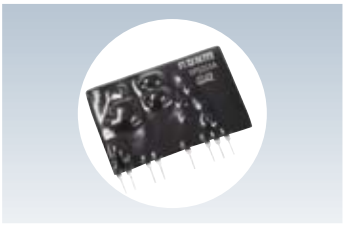
Isolated

Features

Isolated

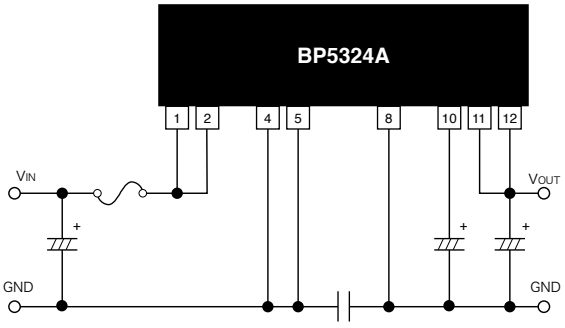
Applications

Industrial devices

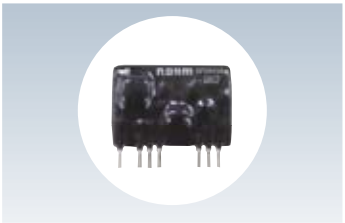


Summary

Isolated format ideal for industrial devices.
Converter with built-in transformer



High-power LED drivers for illumination



Features

High precision
Constant
current output
Isolated

Summary

High-power LED driver featuring highly precise constant current output.

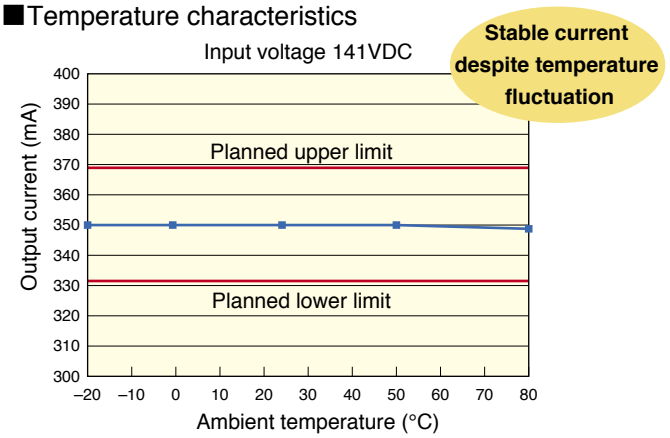
Applications

Variety of LED lighting applications,
including stage,
landscaping, residential,
building,
and emergency illumination.

Easy to use. Stable current supply

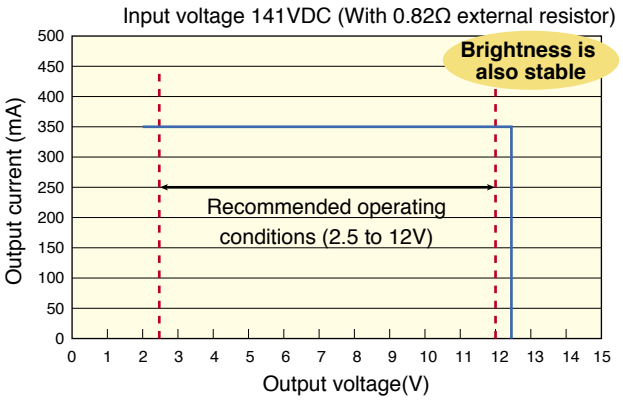
Continues current output, even during temperature changes, ensuring stable lighting outdoors.

■Temperature characteristics



Derating may be necessary depending on the ambient temperature.

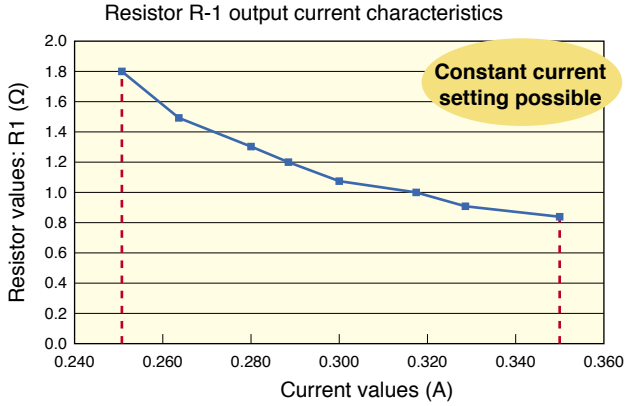
■Constant current output



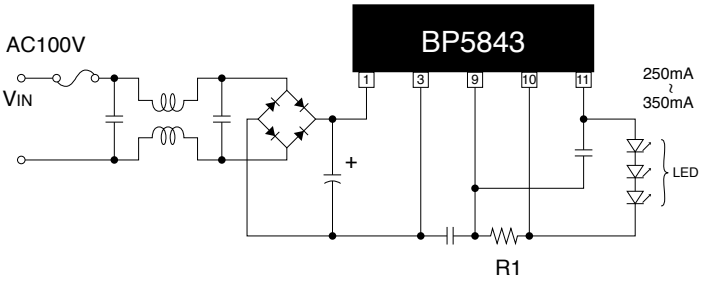
Adjustable Brightness Control

Vary the LED current between 250 to 350mA by selecting the appropriate external resistor.

■Current settings



■Application circuit

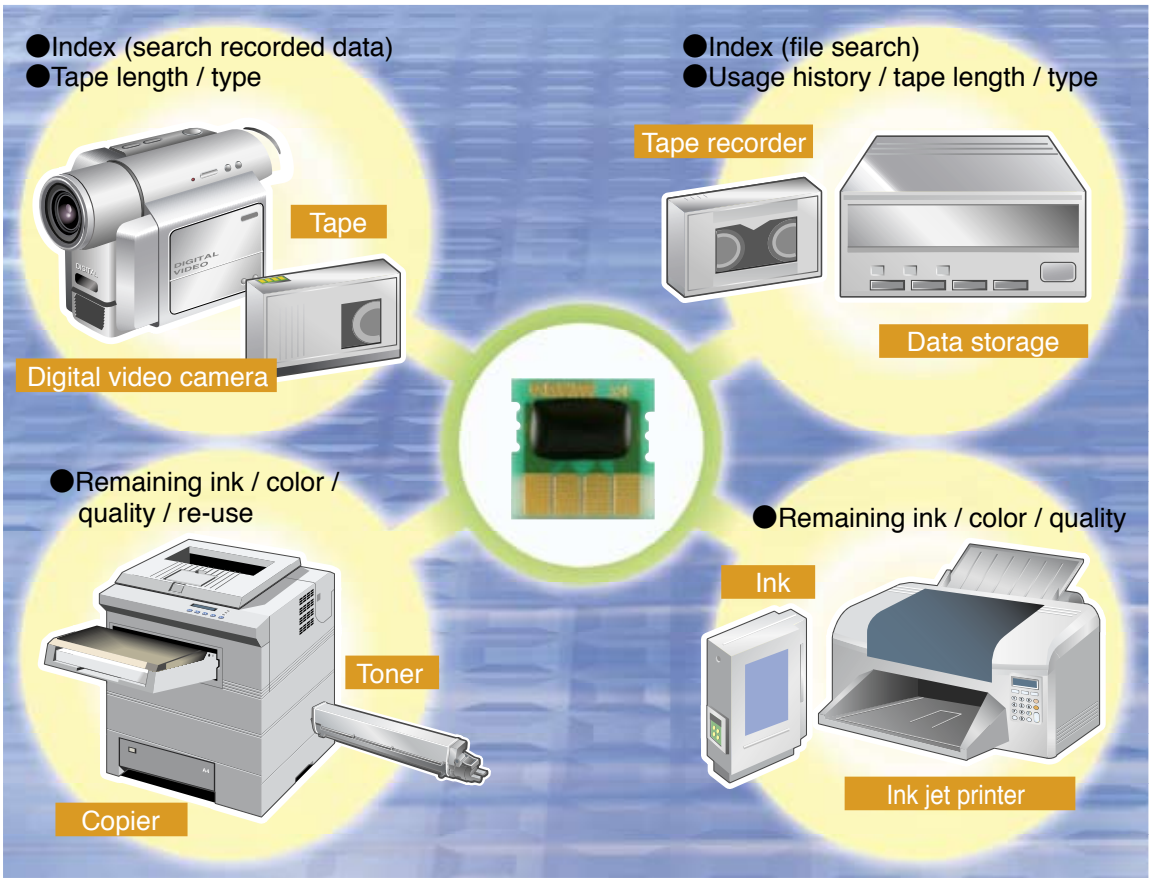


Memory Modules

What is a memory module?

Memory modules are built in to make it possible to access (read/write) product information at any time.

Memory modules are used for the following

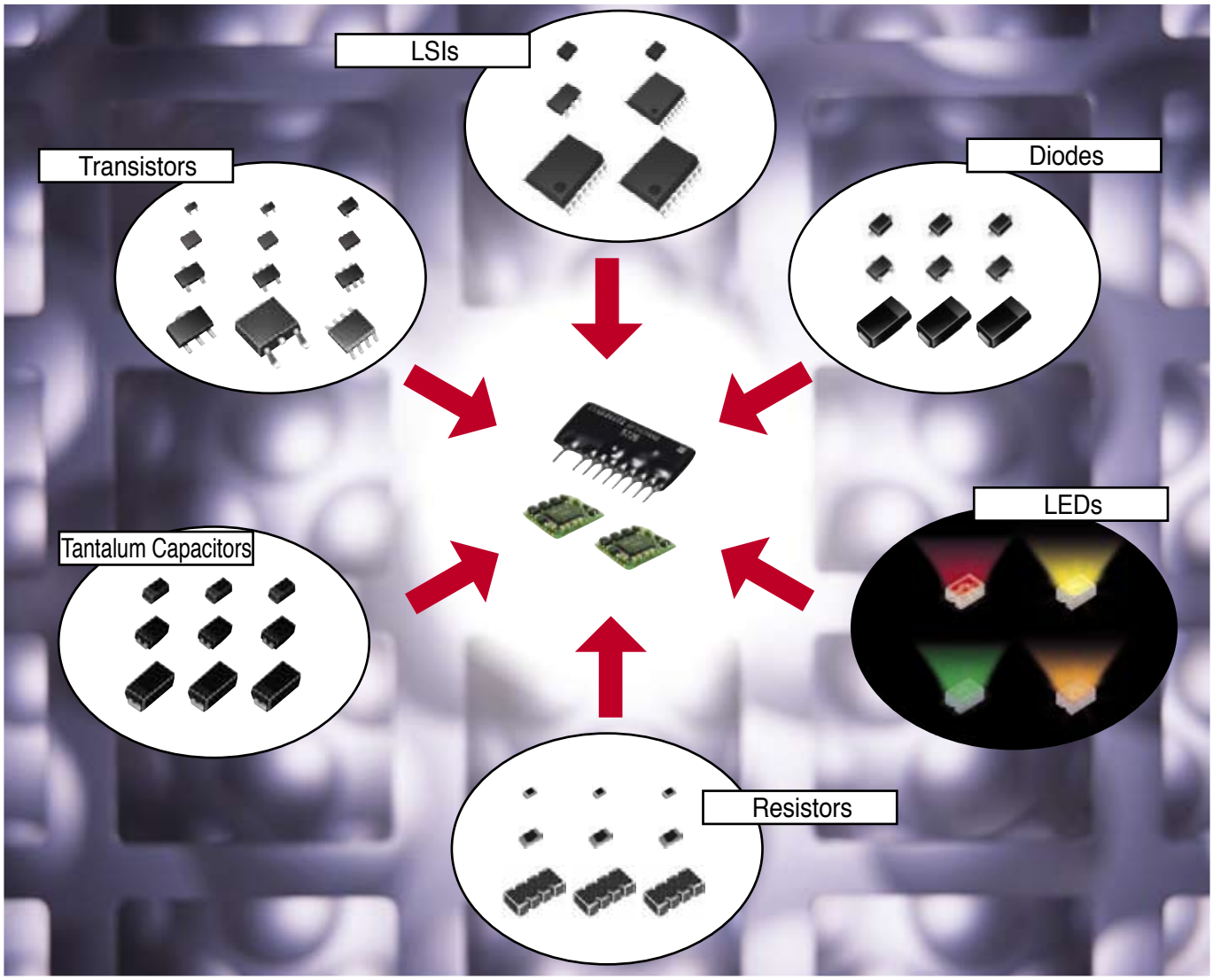


Lineup

BK01□□ series	Serial two-wire system Standard type						
Serial two-wire system	I²C BUS compatible *2	Product thickness 1.95mm	High-grade terminal*1				
Memory capacitance	1k	2k	4k	8k	16k	32k	64k
BK02□□ series	Serial two-wire system Thin type						
Serial two-wire system	I²C BUS compatible *2	Product thickness 1.2mm	High-grade terminal*1				
Memory capacitance	2k (Under development)	4k	16k (Under development)	32k	64k		
BK03□□ series	Serial three-wire system Standard type						
Serial three-wire system		Product thickness 1.95mm	High-grade terminal*1				
Memory capacitance	1k	2k	4k	8k	16k		

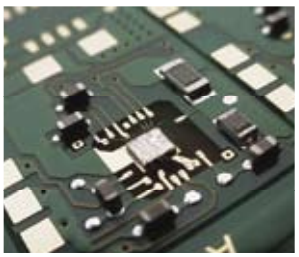
*1 : Optional. *2 : I²C-bus is a registered trademark of Philips.

Custom Modules



Custom module technology

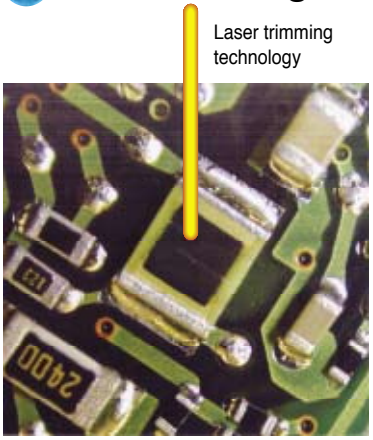
COB Technology



SMD+COB

Coating Technology

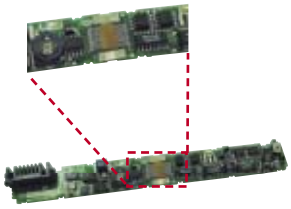
Laser trimming

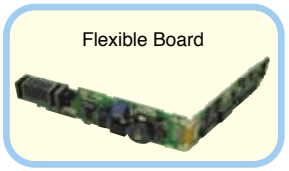


・Auto-adjustable
(High adjustable performance)
・High reliability
(No resistance value variance
by vibration after mounting)

Flexible Module

BB Bridge





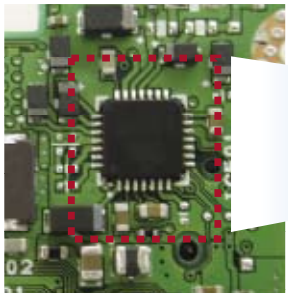
Modularization

Modularization 1

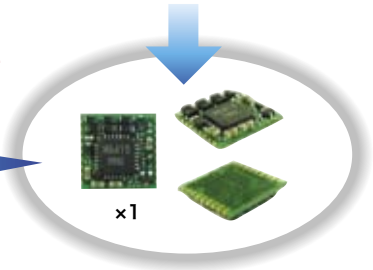
Auto-mountable SMD function module

Standardized auto-mountable SMD module

COB package and 0603 size help reduce size and thickness.



Mounting area 1/3



Three benefits	
	Compact
	Standardized circuit
	Improved process efficiency

Modularization 2

Coating module

Partial coating also possible

Coating module

Three benefits	
	Keeps out water, dust
	Prevents shorts due to foreign matter
	Protects parts (from impact)

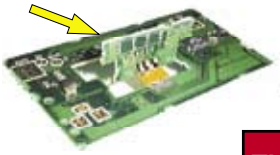
Modularization 3

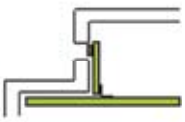
Flexible Module

1. Fits in small spaces

2. Connects to sub-board

Chip LED array





No need for LED processing, positioning, or soldering.
Position multiple boards simultaneously.

Three benefits	
	Small space is also OK
	No need for connector
	Zero contact resistance (due to solder connection)

Automotive

TCY2000 Cycle | Laser trimming | In-house devices

- Engine control circuit
- ABS circuit
- Fuel control circuit
- Door lock control circuit
- Meter peripheral circuits
- AC control circuit

Digital, AV equipment

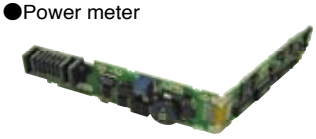
High density | Surface mounting | In-house LSI

- PC LCD power supply
- PC battery charger
- CD-ROM power supply
- Image processing circuit
- PC control circuit
- DSC

Battery

Flexible circuit board | Coating | In-house LSI

- Lithium battery protection circuit
- Lithium battery charger
- Ni-Cd, Ni-H battery charger
- Power meter



Industrial devices

Laser trimming | High density | In-house LSI

- Gaming control boards/power supplies
- LCD power supplies
- Power supplies for vending machines
- Air conditioning control circuits
- Inverter control circuits
- Switching regulators
- Boiler control circuits
- Sensor modules

Custom Module Flowchart

ROHM Power Modules offer many advantages

1.Broad lineup

An abundant supply of LSIs are available, from standard ICs to ASICs.

All onboard discrete components produced in-house.

2.Short turnaround time

Rapid development response

Samples received within 7 days

Superior manufacturing system

From material input to product shipment in 3 days

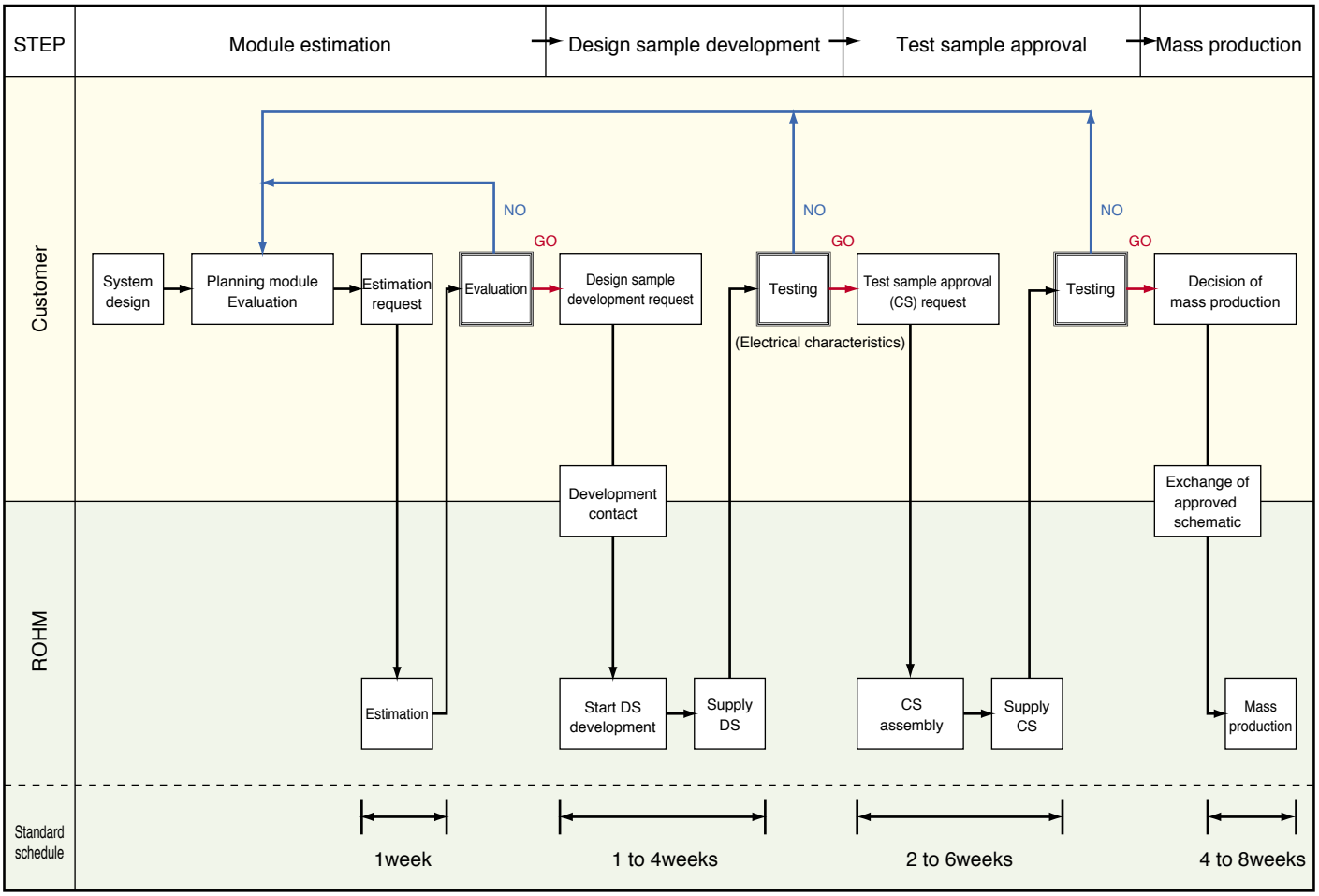
3.Highly reliable

ROHM's Power Modules have found widespread use in the automotive industry (i.e. airbags, ABS, AT control).

Each unit is vibration tested in order to prevent failures due to loose contact.

All products must pass a 2,000 cycle thermal shock test.

Quick Development Flowchart



Note: Extra time may be required for assembly when using customized materials.

Developing Custom Products

In addition to the power modules listed in this catalog, ROHM can also provide custom power modules conforming to customer specifications for form, function, and characteristics. Proprietary development techniques and expertise enable us to develop fully customized power modules in a short period of time.
To request a custom module, please fill out this form and mail it to ROHM Sales.

1)Request for Custom Power Supply

Applications（ ）

Development Schedule

Design sample (Month Day pcs)

Pre-production Sample (Month Day pcs)

Mass production （A time limit pcs／month）

Electrical characteristics

Input voltage（ V） to （ V）

Output 1 Output voltage（ V） Output current（ mA）
Ripple voltage（ mVp-p）

Output 2 Output voltage（ V） Output current（ mA）
Ripple voltage（ mVp-p）

Output 3 Output voltage（ V） Output current（ mA）
Ripple voltage（ mVp-p）

Output 4 Output voltage（ V） Output current（ mA）
Ripple voltage（ mVp-p）

In addition , a necessary function, a characteristics

（ ）

Form

With lead-frame SIL L（ ） × H （ ） × T（ ）mm
DIL L（ ） × W （ ） × H（ ）mm

Without Lead Frame L（ ） × W （ ） × T（ ）mm

2)Request for customized hybrid IC

Applications（ ）

Development schedule

Design sample (Month Day pcs)

Pre-production Sample (Month Day pcs)

Mass production (A time limit pcs／month)

Please provide us with the following three documents

・Circuits
・Parts table
・Dimensions

R0108B

Excellence in Electronics

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