System regulator for car stereo
BA4911

● Description

BA4911 is a system regulator IC for car stereo. This IC incorporates 1 channel of 5.0V output, 2 channels of 8.12V output, 1channel of 7.9V output, 1channel of 10.3V output and 2 channels of high side switch.

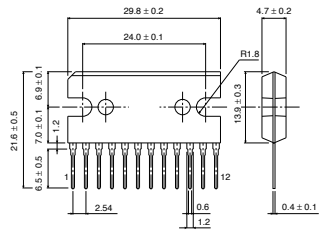
● Features

1) PNP output and low drop out type
2) Built-in output current limits circuit to protect IC from destruction by short
3) Built-in over-voltage protection circuit to deliver strong design for surge input to BACK UP and Vcc
4) 12pin power package perfect for space saving design
5) Built-in thermal protection circuit to protect IC from thermal destruction
6) Strong design against instant power failure of battery because VDD can be driven by load stored in BACK UP capacitor.

● Applications

Car stereo

● Dimension (Unit : mm)



SIP-M12

● Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc	36	V
Power dissipation	Pd	3000 *	mW
Operating temperature range	Topr	−30 ~ +85	˚C
Storage temperature range	Tstg	−55 ~ +150	˚C
Peak applied voltage	Vcc PEAK	50 *1	V

* Derating : 27.2mW/˚C for operation above Ta=25˚C
*1 tr ≧ 1msec Applied time within 200msec

● Recommended Operating Conditions (Ta=25˚C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Recommended supply voltage 1	Vcc1	10	14.4	18	V	Except VDD output, ILM output
Recommended supply voltage 2	Vcc2	8.2	14.4	18	V	VDD output
Recommended supply voltage 3	Vcc3	11.4	14.4	18	V	ILM output

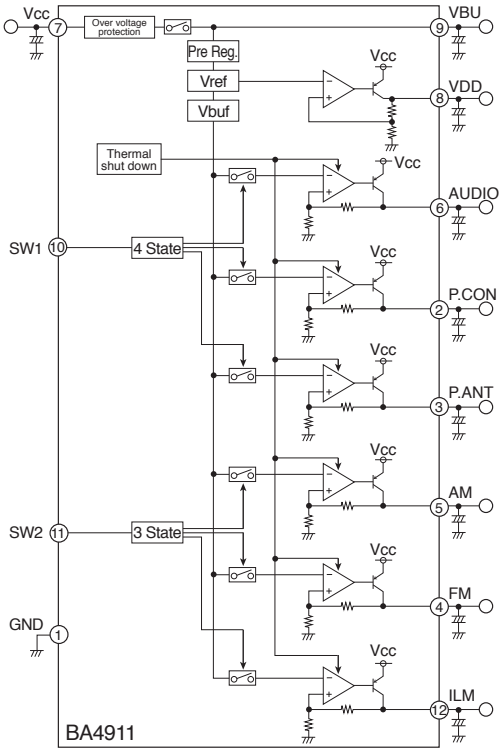
*Electric characteristic is not guaranteed. (Especially at low input voltage)

● Electrical characteristics (Unless otherwise noted; Ta=25˚C, Vcc=14.4V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Standby circuit current 1	I_{ST1}	–	100	150	μA	Vcc=13.2V
Standby circuit current 2	I_{ST2}	–	100	150	μA	
Output voltage (VDD) 1	V_{O1}	4.80	5.00	5.20	V	IO=300mA, Vcc=10~18V
Min. I/O voltage difference 1	ΔV_{O1}	–	0.4	0.7	V	IO=300mA, VBU−VO1
Min. I/O voltage difference 2	$\Delta V_{O1}'$	–	2.5	3.0	V	IO=300mA, Vcc−VO1
Output current capacity	I_{O1}	300	–	–	mA	VO1≧4.8V
Output voltage (AUDIO) 2	V_{O2}	7.80	8.12	8.30	V	IO2=200mA, Vcc=10~18V, −30°C~80°C *1
Min. I/O voltage difference	ΔV_{O2}	–	0.4	0.7	V	IO2=200mA, Vcc−VO2
Output current capacity	I_{O2}	200	–	–	mA	VO2≧7.8V
I/O voltage difference (P.COM) 3	ΔV_{O3}	–	0.4	0.7	V	IO3=200mA
Output current capacity	I_{O3}	300	–	–	mA	VO3≧13.7V
I/O voltage difference (P.ANT) 4	ΔV_{O4}	–	0.4	0.7	V	IO4=200mA
Output current capacity	I_{O4}	300	–	–	mA	VO4≧13.7V
Output voltage (AM) 5	V_{O5}	7.5	7.9	8.3	V	IO5=50mA, Vcc=10~18V, −30°C~80°C *1
Min. I/O voltage difference	ΔV_{O5}	–	0.4	0.7	V	IO5=50mA
Output current capacity	I_{O5}	50	–	–	mA	VO5≧7.5V
Output voltage (FM) 6	V_{O6}	7.8	8.12	8.3	V	IO6=50mA, Vcc=10~18V, −30°C~80°C *1
Min. I/O voltage difference	ΔV_{O6}	–	0.4	0.7	V	IO6=50mA, Vcc−VO6
Output current capacity	I_{O6}	50	–	–	mA	VO6≧7.8V
Output voltage (ILM) 7	V_{O7}	9.9	10.3	10.7	V	IO7=250mA, Vcc=10~18V
Min. I/O voltage difference	ΔV_{O7}	–	0.4	0.7	V	IO7=250mA, Vcc−VO7
Output current capacity	I_{O7}	250	–	–	mA	VO7≧9.9V

*1 Design guaranteed
*This product is not designed for protection against radioactive rays.
*Output current capacity must be set below MINIMUM.

● Block Diagram



Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document use silicon as a basic material.
  Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).
Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.
In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.