

STRUCTURE Silicon Monolithic Integrated Circuit

PRODUCT SERIES Dual Power Amp. for Stereo Radio Cassette Recorders

TYPE BA5417

PACKAGE OUTLINES Figure 1 (Plastic Mold)

BLOCK DIAGRAM Figure 2

- FUNCTION
- High output power.
    - Pout= 2.8W (Vcc= 9V, RL=3Ω, THD=10%)
    - Pout= 5.0W (Vcc=12V, RL=3Ω, THD=10%)
  - Excellent tone quality.
    - THD = 0.1% (f=1kHz, Po=0.5W)
    - V<sub>NO</sub> = 0.3mVrms (R<sub>g</sub> =10kΩ)
    - RR = 55dB (f<sub>RR</sub>=100Hz)
  - Wide supply voltage range.
    - Vcc = 6.0 ~ 15.0 V
  - Minimal power-on/off pop noise.
  - Built-in protective circuit against ripple of starting motor.
  - Built-in thermal-shut-down.
  - Built-in Stand-by switch.
  - Soft-clip.

The product described in this specification is 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 this product with equipment or devices which require an extremely high level of reliability and the malfunction of which 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.

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply Voltage	Vcc	※1 20	V
Power Dissipation	Pd	※2 15	W
Operating Temperature Range	Topr	-20 ~ +75	°C
Storage Temperature range	Tstg	-55 ~ +150	°C

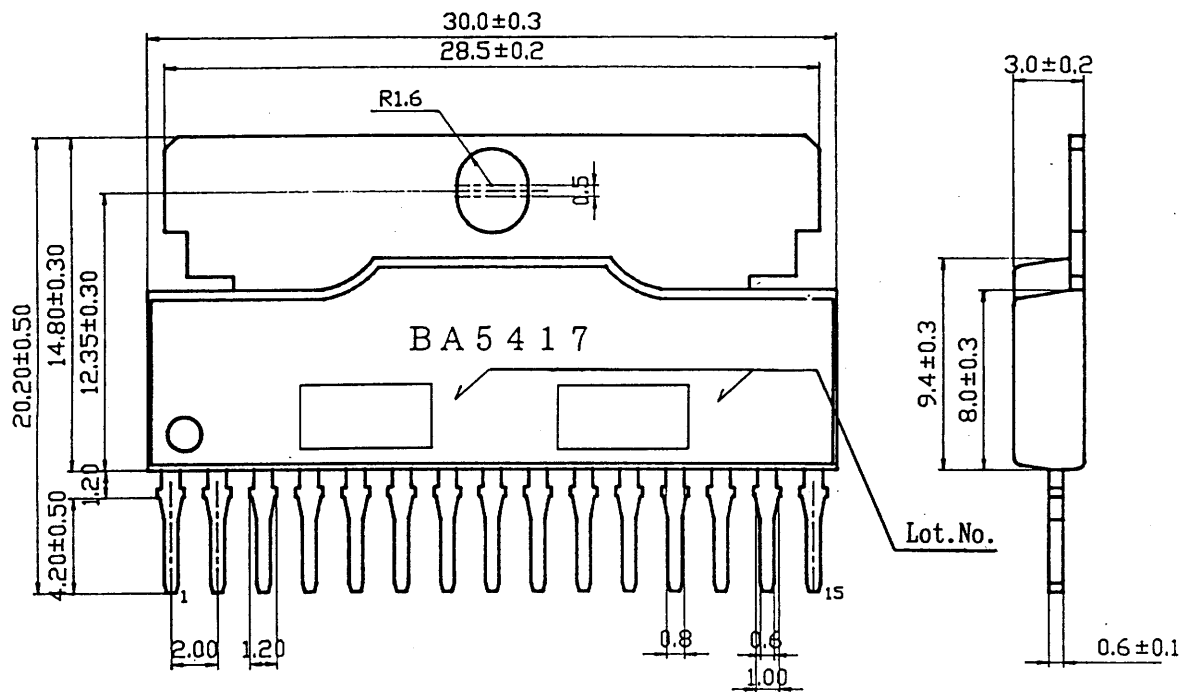
※1 ST.BY SW.off

※2 Ta=75°C. (Infinite Heat sink)

Recommended Operating Supply Voltage Range : Vcc = 6.0 ~ 15.0 V

ROHM assumes no responsibility for the use of any circuits described herein, conveys no license under any patent or other right, and makes no representations that the circuits are free from patent infringement.

Design JUL. 15. '96 S. Hirachi	Check JUL 15. '96 M. Fujisawa	Approval July 17 '96 T. Okada	Date JUL/15/'96	Specification Rev. A
ROHM CO., LTD.			Specification No. TSZ02201-BA5417-1-2	



(Unit : mm)

Fig.1 Outline (Plastic Mold)

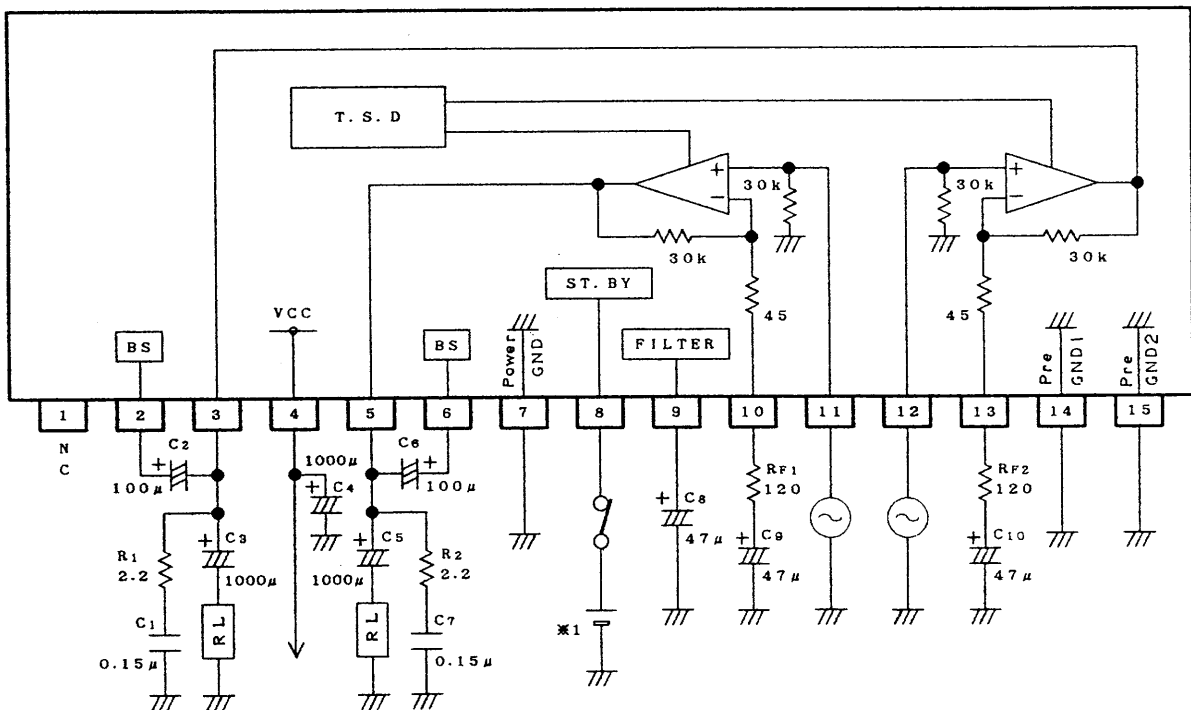
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### Electrical Characteristics

(Unless otherwise specified,  $T_a=25^\circ\text{C}$ ,  $V_{CC}=9\text{V}$ ,  $R_L=3\Omega$ ,  $R_F=120\Omega$ ,  $R_G=600\Omega$ ,  $f=1\text{kHz}$ , Test Cir.Fig.2)

Parameter	Symbol	Limits			Unit	Conditions
		Min.	Typ.	Max.		
Quiescent current	$I_Q$	—	22	45	mA	$V_{IN}=0\text{V}_{\text{rms}}$
Rated output power 1	$P_{OUT1}$	2.2	2.8	—	W	THD=10%
Rated output power 2	$P_{OUT2}$	4.0	5.0	—	W	THD=10% , $V_{CC}=12\text{V}$
Closed loop voltage gain	$G_{VC}$	43	45	47	dB	—
Output noise voltage	$V_{NO}$	—	0.3	1.0	mV <sub>rms</sub>	$R_G=10\text{k}\Omega$ , DIN AUDIO
Total harmonic distortion	THD	—	0.1	1.0	%	$P_{OUT}=0.5\text{W}$
Ripple rejection ratio	RR	42	55	—	dB	$f_{RR}=100\text{Hz}$ , $V_{RR}=-10\text{dBm}$
Crosstalk level	CT	48	65	—	dB	$V_O=0\text{dBm}$
Cir. current (ST.BY SW.off)	$I_{OFF}$	—	0	20	$\mu\text{A}$	—
ST.BY pin inflow current	$I_{SIN}$	—	0.15	0.4	mA	$V_{ST.BY}=V_{CC}$
Stand-by control voltage	ST.BY disabled	$V_{STH}$	3.5	—	V	
	ST.BY status	$V_{STL}$	—	—	1.2	V

○ This product is not designed for protection against radioactive rays.



※ 1  $V_{ST.BY} = 3.5\text{V} \sim V_{CC}$

Fig.2 Block Diagram & Test Circuit

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## Description of each terminal

Terminal No.	Name of terminal	Description
1	(NC)	—
2	BS2	Boot-strap terminal 2
3	OUT2	Output terminal 2
4	VCC	Power source terminal
5	OUT1	Output terminal 1
6	BS1	Boot-strap terminal 1
7	POWER-GND	Power GND
8	STBY	Stand-by control terminal
9	FILTER	Ripple filter terminal
10	NF1	Feedback terminal 1
11	IN1	Input terminal 1
12	IN2	Input terminal 2
13	NF2	Feedback terminal 2
14	PRE-GND1	Small signal GND 1
15	PRE-GND2	Small signal GND 2

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