

## High Performance Class-D Speaker Amplifier Series

# BD5423AEFS/BD5426EFS Evaluation Board Information

### BD5423AEFS-EVK-001/BD5426EFS-EVK-001

#### ● General

BD5423AEFS/BD5426EFS is a 17W + 17W 【BD5423AEFS】、10W+10W 【BD5426EFS】 stereo class-D power amplifier IC, developed for space-saving and low heat-generation applications such as low-profile TV sets. The IC employs state-of-the-art Bipolar, CMOS, and DMOS (BCD) process technology that eliminates turn-on resistance in the output power stage and internal loss due to line resistances up to an optimum level. With this technology, the IC has achieved high efficiency of 90% (10W + 10W output with 8Ω load) 【BD5423AEFS】 ,87%(9W+9W output with 8Ω load) 【BD5426EFS】 which is the top class in the industry. The IC, in addition, employs a compact back-surface heat radiation type power package to achieve low power consumption and low heat generation that eliminates the need of installing an external heat sink, up to a total output of 34W 【BD5423AEFS】、 20W 【BD5426EFS】 . This product satisfies both needs for drastic downsizing, low-profile structures and powerful, high-quality playback of the sound system.

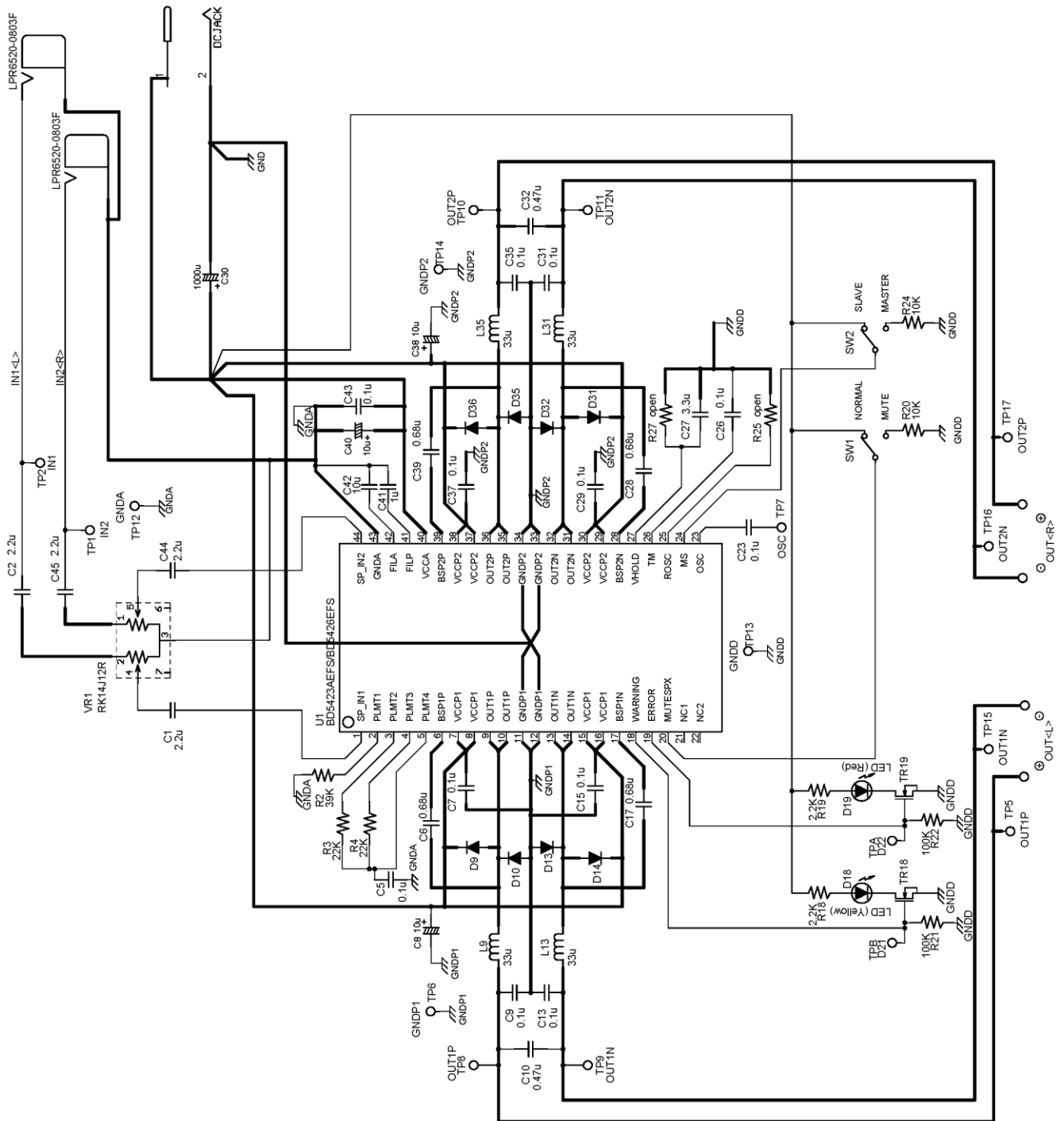
#### ● Index

● General .....	1
● Index .....	1
● Conditions .....	1
● Circuit Diagram.....	2
● PCB layout .....	3
● Usage .....	4
● BOM List .....	5

#### ● Conditions

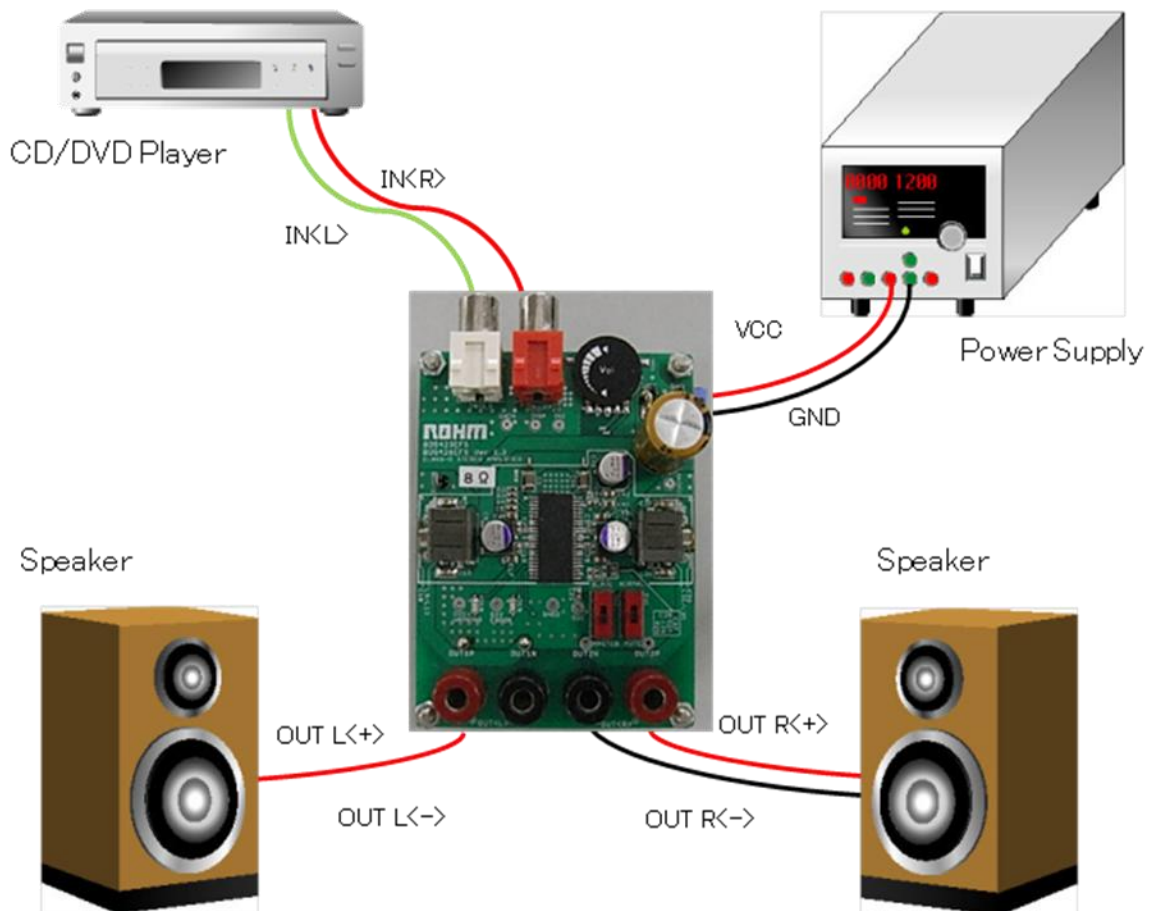
Item	Symbol	Range	Unit
Supply Voltage	V <sub>CC</sub>	+10 ~ +16.5	V
Input Voltage	V <sub>IN</sub>	-0.2 ~ V <sub>CC</sub> +0.2	V
Load Impedance	R <sub>L</sub>	4~16 【BD5423AEFS】 6~16 【BD5426EFS】	Ω

● Circuit Diagram





## ● Usage



- ① Please keep the volume to a minimum, and set the switch MUTE(Mute mode).
- ② Connect Power supply, Speaker, and Audio Source.
- ③ Set Power supply 12V(Typ.).
- ④ Set the switch in order of MUTE → NORMAL (Sound output mode)
- ⑤ Adjust the volume, and confirm the sound.
- ⑥ In the end of operation, set the switch in order of NORMAL → MUTE(Mute mode), and set supply voltage OFF.

## ●BOM List

[RL=8Ω]

Parts	Parts No.	Value	Company	Product No.	Rated Voltage	Tolerance	
IC	IC1	—	ROHM	BD5423A/26EFS	—	—	
SBD	Not mount	—	ROHM	RB162M-40	40V	—	
Inductor	L9, L13, L31, L35	33μH	SAGAMI	7G09B-330M	—	(±20%)	
Resister	R2, R3, R4	22kΩ	—	1005 size	1/16W	F(±1%)	
	R18, R19	2.2kΩ		1005 size			
	R20, R24	10kΩ		1005 size			
	R21, R22	100kΩ		1005 size			
	R25, R27	open					
Capacitor	C6, C17, C28, C39	0.68μF	—	2012 size	25V	B(±10%)	
	C7, C15, C29, C37, C43	0.1μF		1608 size	50V	B(±10%)	
	C9, C13, C31, C35	0.1μF		2012 size	50V	B(±10%)	
	C10, C32	0.47μF		3225 size	50V	B(±10%)	
	C27	3.3μF		2012 size	25V	B(±10%)	
	C5, C23, C26	0.1μF		1608 size	25V	B(±10%)	
	C42	10μF		2012 size	16V	B(±10%)	
	C41	1μF		2012 size	25V	B(±10%)	
	C1, C44	2.2μF			3216 size	25V	B(±10%)
	C2, C45						
Electrolytic Capacitor	C8, C38, C40	10μF	—	6.6mm×6.6mm	25V	M(±20%)	
	C30	1000μF	—	φ12.5mm	35V	—	
LED	D19	RED	ROHM	SML-D12U8W	20mA	—	
	D18	YELLOW	ROHM	SML-D12Y8W	20mA	-	
MOSFET	Tr18, Tr19	Nch	ROHM	RSU002N06	60V	—	
PIN Jack	IN<L>	—	—	—	—	—	
	IN<R>	—	—	—	—	—	
Chip Jack	OUT+	—	—	(Red)	—	—	
	OUT-	—	—	(Black)	—	—	

## Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications :
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.  
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
- 6) The Products specified in this document are not designed to be radiation tolerant.
- 7) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
- 8) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
- 9) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
- 10) ROHM has used reasonable care to ensure the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
- 11) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.
- 12) When providing our Products and technologies contained in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.
- 13) This document, in part or in whole, may not be reprinted or reproduced without prior consent of ROHM.



Thank you for your accessing to ROHM product informations.  
More detail product informations and catalogs are available, please contact us.

## ROHM Customer Support System

<http://www.rohm.com/contact/>