

## Low Power Consumption Class-D Amplifier

# BD28412MUV Evaluation Board Information

## BD28412MUV-EVK-001(StereoBTL)/BD28412MUV-EVK-002(PBTL)

### ●General

BD28412MUV is a 9W+9W stereo (or 18W monaural) class D amplifier, developed for battery equipped speaker systems such as wireless speakers. This IC is incorporated with a precise oscillator to generate multiple switching frequencies that can avoid the AM radio interference. In addition, 2.1Ch audio system can be realized by master and slave operation without beat noise caused by interference between two ICs. Furthermore, this IC achieves lower power consumption that eliminates the need for an external heat sink.

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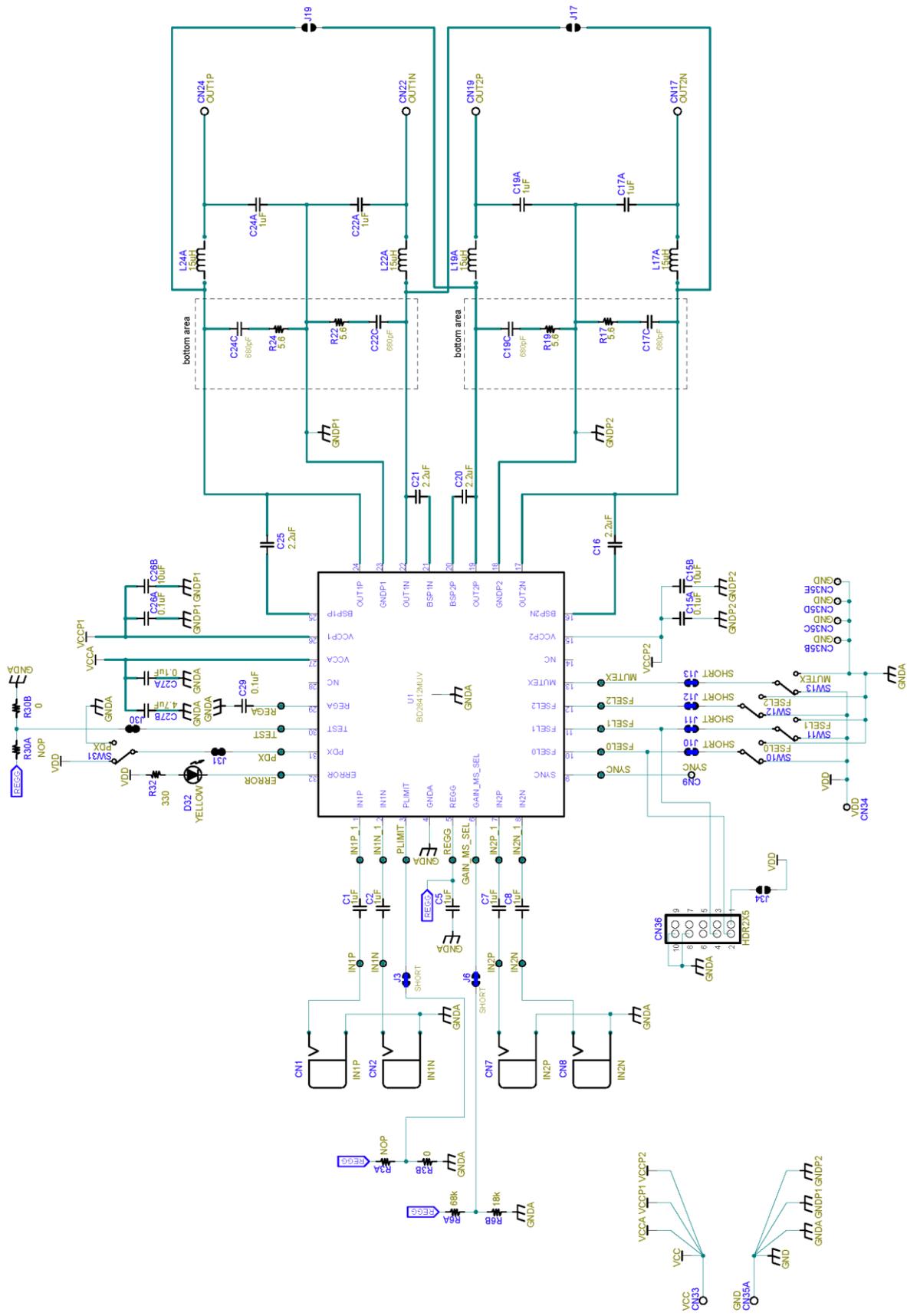
### ●Conditions

Item	Symbol	Min	Typ	Max	Unit	Applying pin, Condition
Power Supply Voltage	$V_{CC}$	4.5	-	13	V	VCCA, VCCP1, VCCP2
Load Impedance <sup>(Note 1)</sup>	$R_{L1}$	5.4	-	-	$\Omega$	BTL
	$R_{L2}$	3.2	-	-	$\Omega$	PBTL
H Input Voltage	$V_{IH}$	2.0	-	3.3	V	PDX, MUTEX, FSEL0, FSEL1, FSEL2
L Input Voltage	$V_{IL}$	0	-	0.8	V	PDX, MUTEX, FSEL0, FSEL1, FSEL2
L Output Voltage	$V_{OL}$	-	-	0.8	V	ERRORX, $I_{OL}=0.5mA$

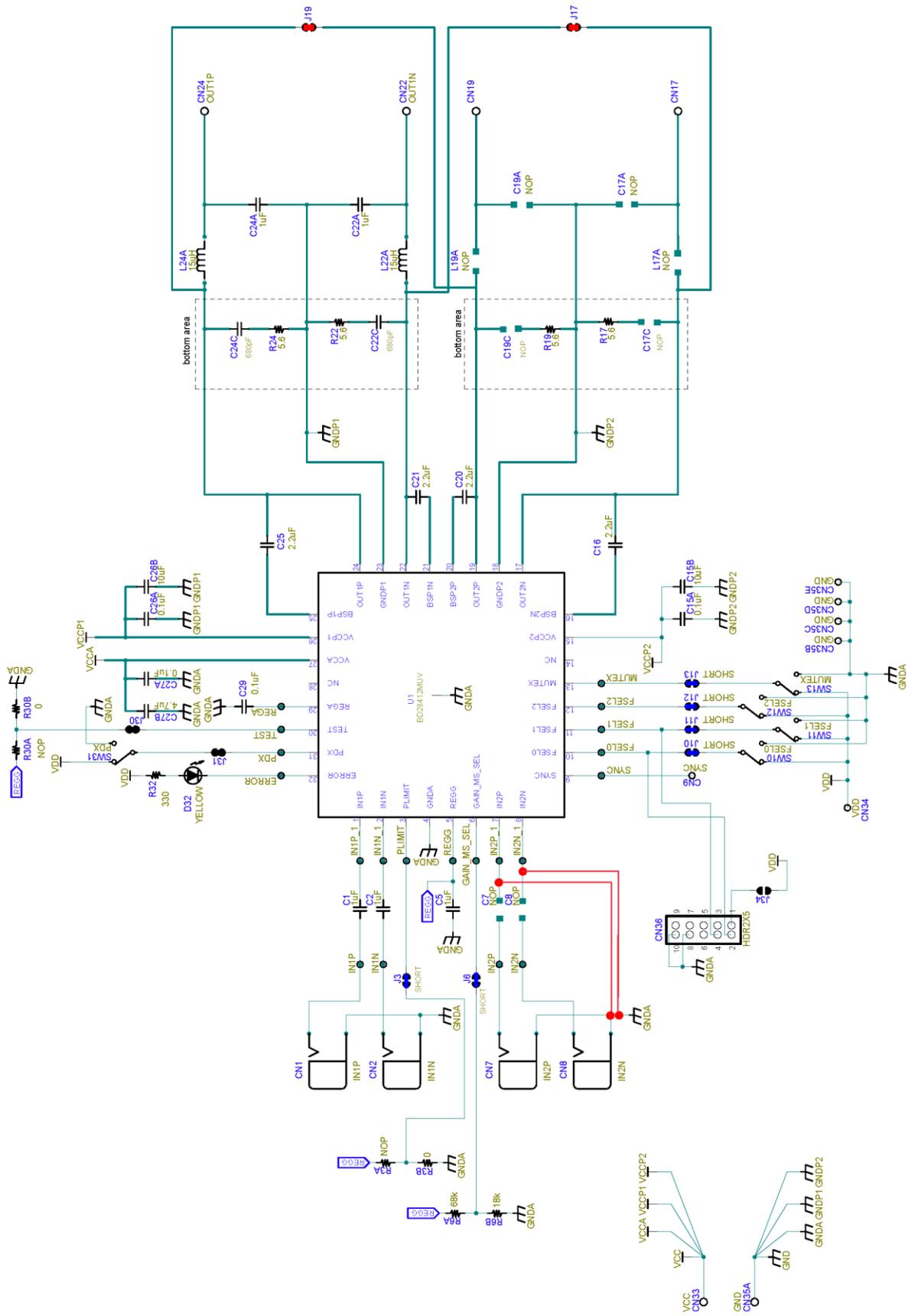
(Note)  $T_J < 150^\circ C$

This document is information of the evaluation board when we evaluated the device.  
 This information will help you when designing your evaluation board.  
 Notice, the evaluation board is not available for sale.

●Circuit Diagram(Stereo BTL)

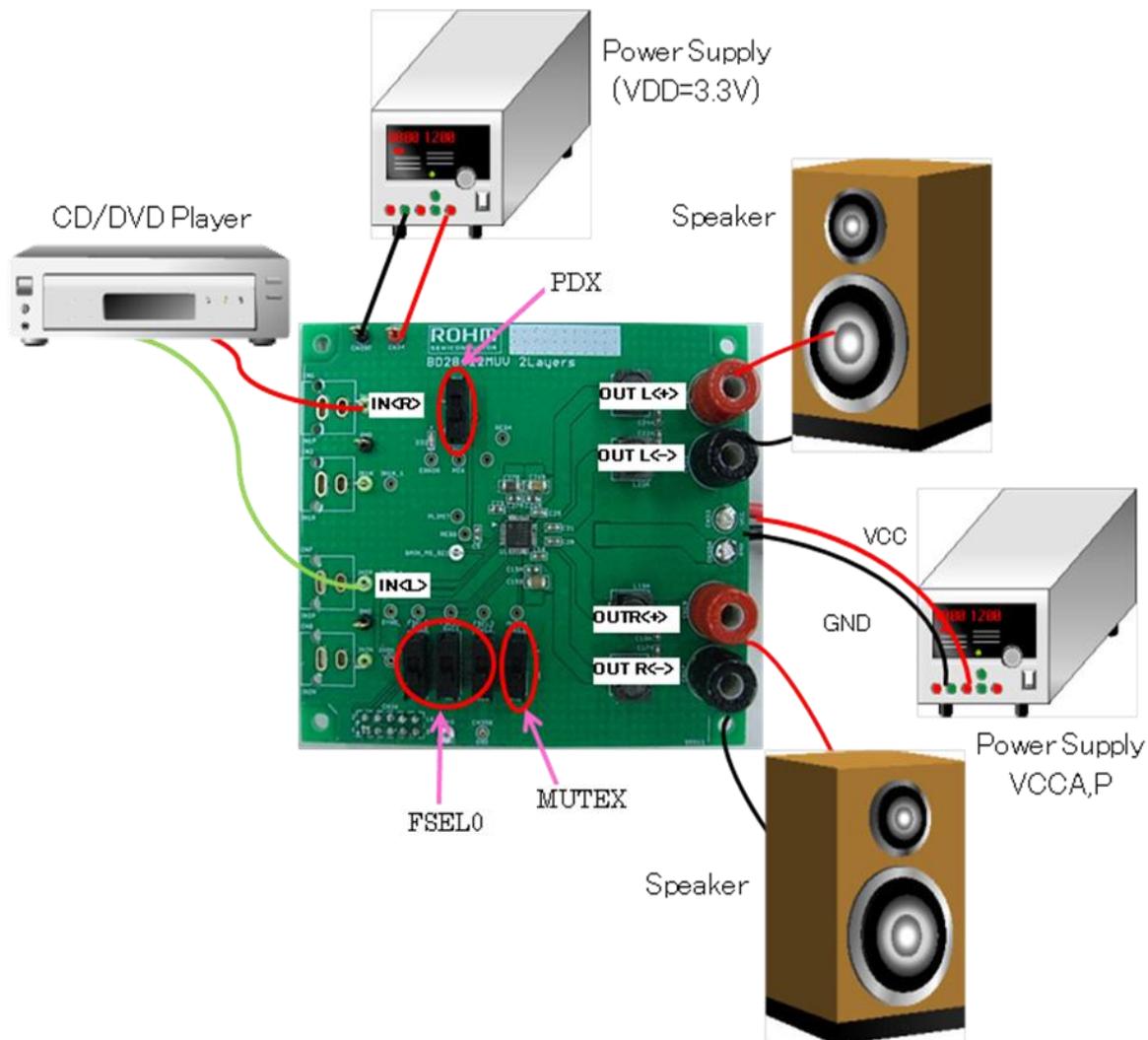


●Circuit Diagram(PBTL)



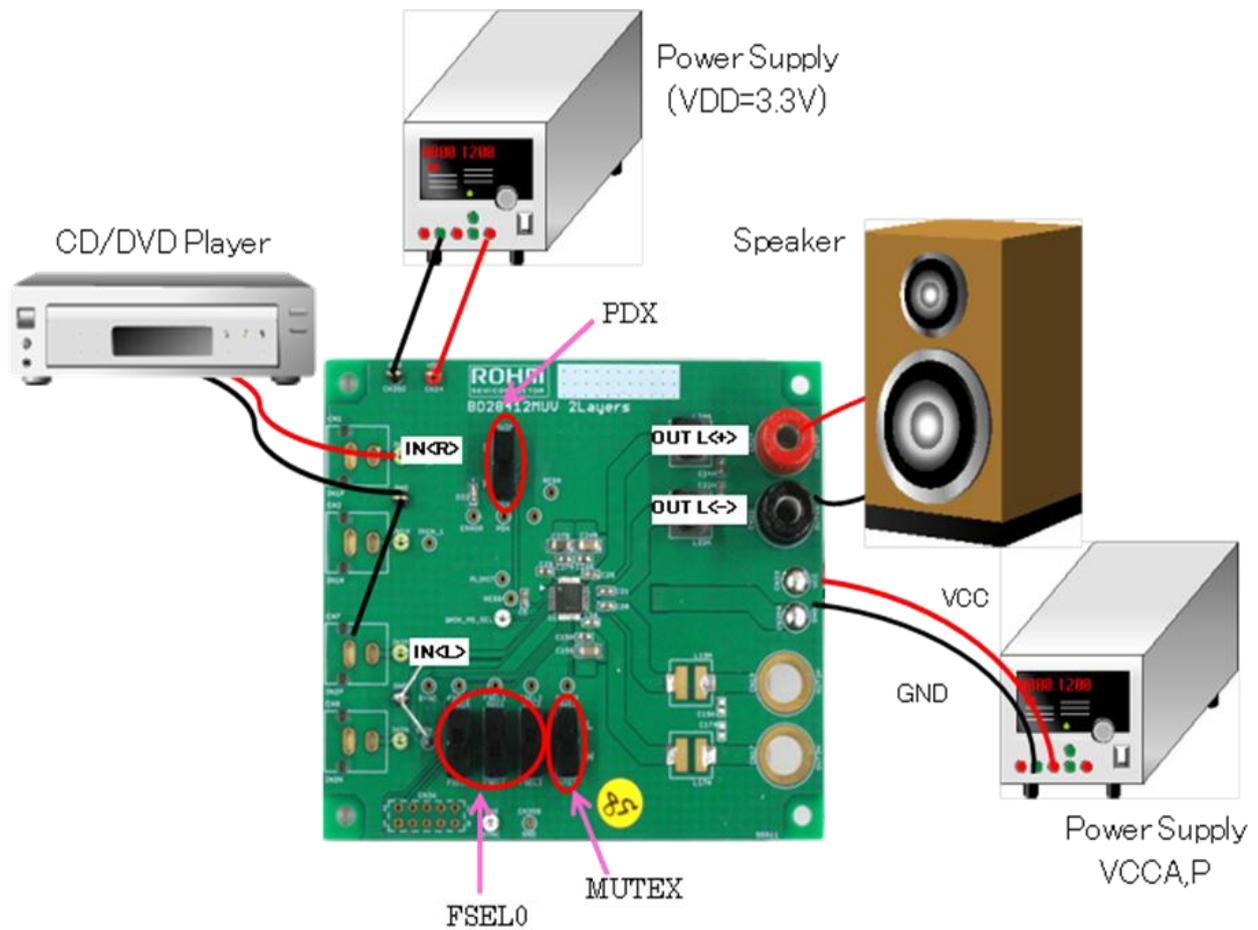


## ● Usage (STEREO BTL)



- ① Set the PDX switch to L, and MUTE switch to L.
- ② Set the FSEL0~2 switches to target PWM Frequency.
- ③ Connect to VDD(3.3V), VCC(4.5~13V), Speakers, Input Signal.
- ④ Turn on the VDD and VCC.
- ⑤ Set the MUTE switch to H, after set the PDX switch to H.
- ⑥ Turn on the Input Signal
- ⑦ After Evaluation, Set the PDX switch to L, after set the MUTE switch to L.

## ● Usage(PBTL)



- ① Set the PDX switch to L, and MUTE switch to L.
- ② Set the FSEL0~2 switches to target PWM Frequency.
- ③ Connect to VDD(3.3V), VCC(4.5~13V), Speakers, Input Signal.
- ④ Turn on the VDD and VCC.
- ⑤ Set the MUTE switch to H, after set the PDX switch to H.
- ⑥ Turn on the Input Signal
- ⑦ After Evaluation, Set the PDX switch to L, after set the MUTE switch to L.

## ●BOM List(Stereo BTL, Vcc=11~13V)

Type	num	Part Number	Remarks
Resister	1	R3A	Refer to the datasheet, "4) Power Limit Function"
	1	R3B	
	1	R6A	Refer to the datasheet, "2) Gain and Master/Slave Setting"
	1	R6B	
	1	R32	10kΩ, 1/16W, J(±5%)
	4	R17, R19, R22, R24 <sup>(Note 2)</sup>	5.6Ω, 1/10W, J(±5%)
Capacitor	4	C1, C2, C7, C8	1μF, 16V, B(±10%)
	1	C5 <sup>(Note 2)</sup>	1μF, 16V, B(±10%)
	3	C15A, C26A, C27A <sup>(Note 2)</sup>	0.1μF, 25V, B(±10%)
	2	C15B, C26B <sup>(Note 2)</sup>	10μF, 25V, B(±10%)
	4	C16, C20, C21, C25 <sup>(Note 2)</sup>	2.2μF, 16V, B(±10%)
	4	C17A, C19A, C22A, C24A	1μF, 25V, B(±10%)
	4	C17C, C19C, C22C, C24C <sup>(Note 2)</sup>	680pF, 25V, B(±10%)
	1	C27B <sup>(Note 2)</sup>	4.7μF, 25V, B(±10%)
	1	C29 <sup>(Note 2)</sup>	0.1μF, 16V, B(±10%)
Coil	4	L17A, L19A, L22A, L24A	15μH, 2.1A, ±20%

(Note 2) Please place it near pin as much as possible.

※In case of the BOM list of Stereo BTL(4.5V~11V), Monaural PBTL(4.5~11V) and Monaural PBTL(11~13V), refer to the datasheet.

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