



**THE DATASHEET OF
BU9480F-E2**



16-bit stereo D / A converter for audio applications

BU9480F

The BU9480F is a 16-bit stereo D / A converter designed for audio applications, and has an internal $2 \times$ oversampling circuit.

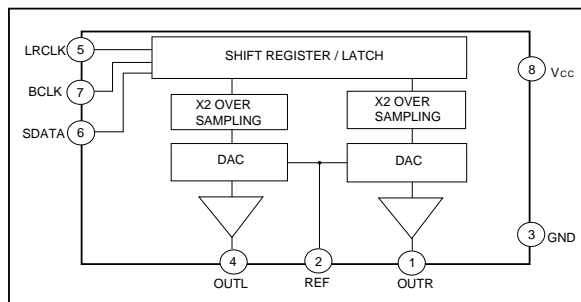
●Applications

16-bit stereo D / A converter for audio applications

●Features

- 1) 3.0 to 5.5V operating voltage.
- 2) Low current consumption because of the CMOS process.
- 3) Resistor strings method used.
- 4) 2-channel common phase output.
- 5) Internal $2 \times$ oversampling interpolator.
- 6) 8 - pin plastic package.
- 7) Supports 4fs. (200kHz operation)

●Block diagram



●Pin descriptions

Pin No.	Pin name	Function	I / O	Voltage
1	ROUT	Right channel analog signal output	Low-impedance output	$1 / 2V_{CC}$
2	REF	Connects the DA ref. voltage pin and ground	High-impedance input	$1 / 2V_{CC}$
3	GND	Ground	—	—
4	LOUT	Left channel analog signal output	Low-impedance output	$1 / 2V_{CC}$
5	LRCK	The signal that distinguishes between left and right channels for serial data (left channel = high level, right channel = low level).	Logic input	—
6	SDAT	Serial data input Input with 2' complement, MSB first.	Logic input	—
7	BCLK	Serial data shift clock input	Logic input	—
8	VCC	VCC	—	—

● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Applied voltage	V _{DDMax.}	7.0	V
Power dissipation	P _d	450*	mW
Operating temperature	T _{opr}	- 10 ~ + 70	°C
Storage temperature	T _{stg}	- 55 ~ + 125	°C
Input voltage	T _{opt}	- 0.3 ~ V _{DD} + 0.3	V

* When unmounted, reduced by 4.5mW for each increase in Ta of 1°C over 25°C.

● Recommended operating conditions

Parameter	Symbol	Limits	Unit
Power supply voltage	V _{DD}	3.0 ~ 5.5	V
Input low level voltage	V _{IL}	0.0 ~ 0.2 × V _{DD}	V
Input high level voltage	V _{IH}	0.8 × V _{DD} ~ V _{DD}	V

● Electrical characteristics (unless otherwise noted, Ta = 25°C, V_{DD} = + 5.0V)

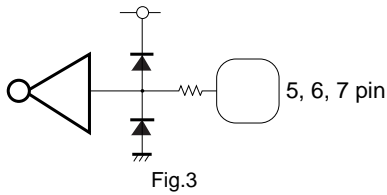
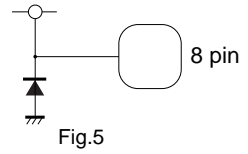
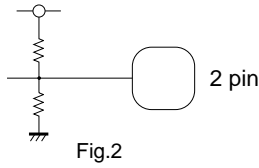
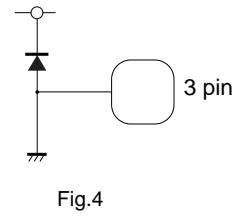
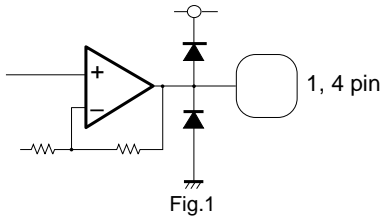
Analog unit characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measurement circuit
Current dissipation	I _{DD}	—	3.6	6	mA	f = 1kHz, 0dB	Fig.6,7
Resolution	RES	—	—	16	BIT	—	Fig.6,7
Noise distortion 1	THD1	—	0.05	0.12	%	f = 1kHz, 0dB	Fig.6,7
Noise distortion 2	THD2	—	0.07	0.4	%	f = 1kHz, - 20dB	Fig.6,7
Full-scale output voltage	V _{FS}	1.8	2	2.2	V _{P-P}	—	Fig.6,7
Crosstalk	C.T	—	- 92	- 85	dB	Unmeasured channel output = 0 dB, f = 1kHz. DIN audio filter	Fig.6,7
S / N ratio	S / N	86	93	—	dB	DIN audio filter	Fig.6,7
Output pin load resistance	RL	10	—	—	kΩ	—	Fig.6,7

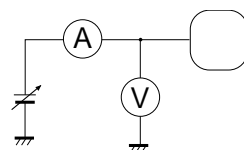
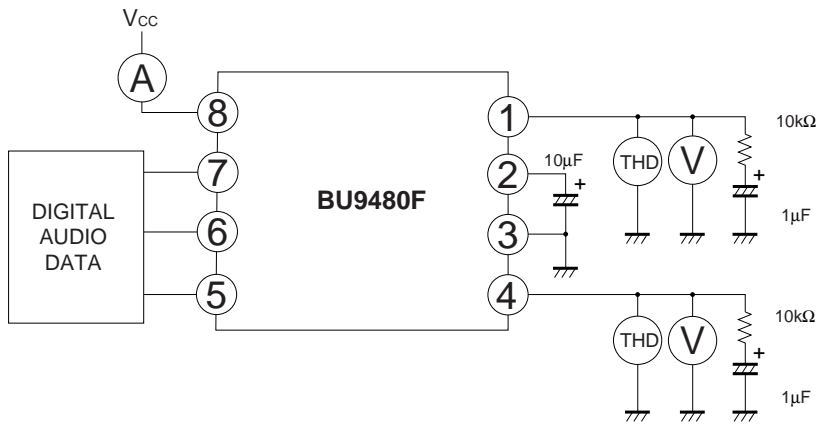
Logic input characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measurement circuit
Input high level voltage	V _{IH}	0.7 × V _{DD}	—	V _{DD}	V	Pins 5,6 and 7	Fig.6,7
Input low level voltage	V _{IL}	GND	—	0.3 × V _{DD}	V	Pins 5,6 and 7	Fig.6,7
Leakage current, high level	I _{IH}	—	—	- 10	μA	Pins 5,6 and 7 = V _{DD}	Fig.6,7
Leakage current, low level	I _{IL}	—	—	10	μA	Pins 5,6 and 7 = GND	Fig.6,7
DA conversion frequency	f _{SL}	—	—	200	kHz	—	Fig.6,7
BCLK period	T _{BCLK}	60	—	—	ns	—	Fig.6,7
SDAT.LRCK settling time	T _{ST}	60	—	—	ns	—	Fig.6,7
SDAT.LRCK holding time	T _{HD}	60	—	—	ns	—	Fig.6,7

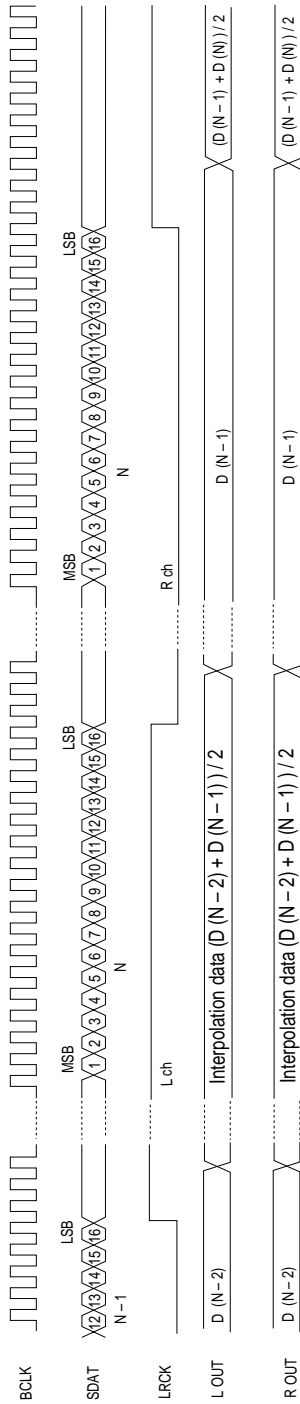
● Pin equivalent circuits



● Measurement circuits



● I / O signal timing chart



Note: Interpolation and original data output are timed respectively to the leading edge and leading edge of LRCK, and so LRCK should be set to a duty of 50%.

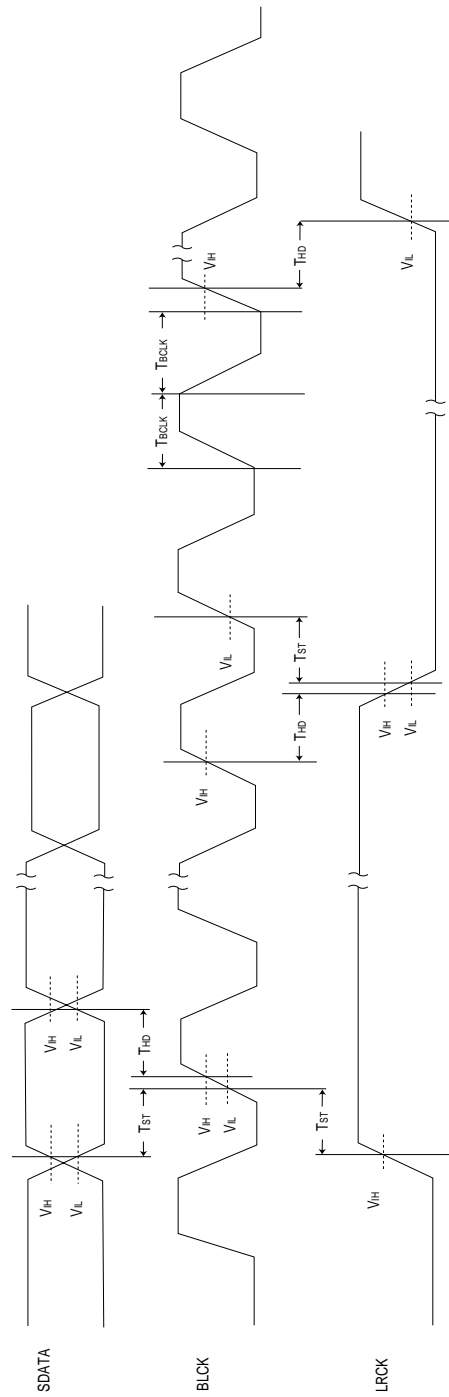
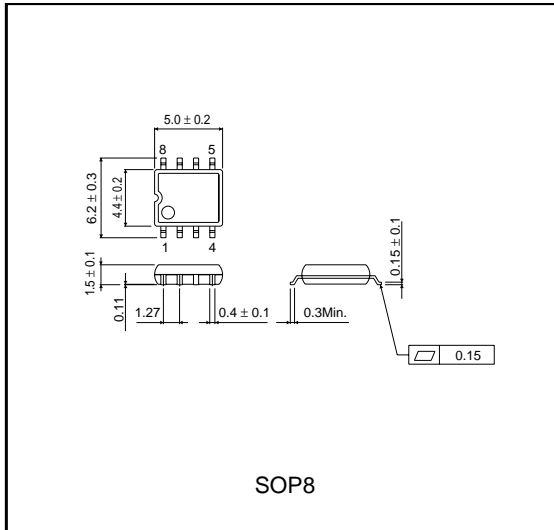


Fig. 8

● External dimensions (Units: mm)



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 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.



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.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View BU9480F-E2 on WIN SOURCE](#)
-  [Rohm Semiconductor Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management