

Philips Semiconductors

Data sheet	
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TDA1543

Dual 16-bit DAC (economy version) (I²S input format)

FEATURES

- Low distortion
- 16-bit dynamic range
- 4 x oversampling possible
- Single 5 V power supply
- No external components required
- No requirement for external deglitcher circuitry due to fast settling output current
- Adjustable bias current
- Internal timing and control circuits
- I²S input format: time multiplexed, two's complement, TTL

GENERAL DESCRIPTION

The TDA1543 is a monolithic integrated dual 16-bit digital-to-analog converter (DAC) designed as an economy version for use in hi-fi digital audio equipment such as

Compact Disc players, digital tape or cassette recorders, digital sound in TV sets and in digital amplifiers.

ORDERING INFORMATION

EXTENDED TYPE NUMBER	PACKAGE			
	PINS	PIN POSITION	MATERIAL	CODE
TDA1543	8	DIL	plastic	SOT97
TDA1543T	16	mini-pack	plastic	SO16L;SOT162A

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{DD}	supply voltage		3.0	5.0	8.0	V
I _{DD}	supply current		-	50	60	mA
I _{FS}	full scale output current		1.95	2.30	2.65	mA
THD	total harmonic distortion	including noise at 0 dB	-	-75	-70	dB
			-	0.018	0.032	%
THD	total harmonic distortion	including noise at -60 dB	-	-30	-23	dB
			-	3.2	7.9	%
t _{CS}	current settling time to ±1 LSB		-	0.5	-	µs
BR	input bit rate at data input		-	-	9.2	Mbits/s
f _{BCK}	clock frequency at clock input		-	-	9.2	MHz
S/N	signal-to-noise ratio	at bipolar zero	90	96	-	dB
TC _{FS}	full scale temperature coefficient	at analog outputs (AOL; AOR)	-	±500 x 10 ⁻⁶	-	K ⁻¹
T _{amb}	operating ambient temperature range		-30	-	+85	°C
P _{tot}	total power dissipation		-	250	-	mW
I _{bias}	bias current (adjustable)		-0.6	-	5.0	mA

FOR MORE DETAILED INFORMATION SEE THE LATEST ISSUE OF HANDBOOK IC01 OR DATA SHEET

TDA1543

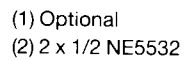


Fig.1 Block diagram.

Dual 16-bit DAC (economy version) (I²S input format)

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PINNING

SYMBOL	PIN	DESCRIPTION
BCK	1	bit clock input
WS	2	word select input
DATA	3	data input
GND	4	ground
V _{DD}	5	+5 V supply voltage
AOL	6	left channel voltage output
V _{ref}	7	reference voltage output
AOR	8	right channel output

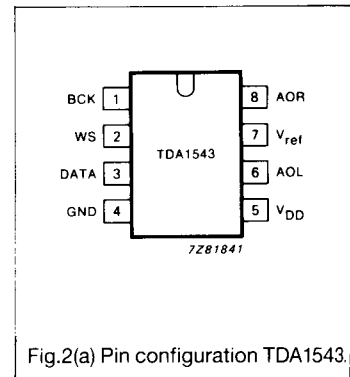


Fig.2(a) Pin configuration TDA1543.

PINNING

SYMBOL	PIN	DESCRIPTION
n.c.	1	not connected
n.c.	2	not connected
BCK	3	bit clock input
WS	4	word select input
DATA	5	data input
GND	6	ground
n.c.	7	not connected
n.c.	8	not connected
n.c.	9	not connected
n.c.	10	not connected
V _{DD}	11	+5 V supply voltage
AOL	12	left channel output
V _{ref}	13	reference voltage output
AOR	14	right channel output
n.c.	15	not connected
n.c.	16	not connected

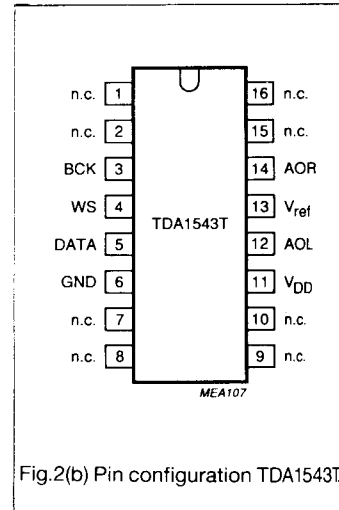


Fig.2(b) Pin configuration TDA1543T.