TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA1217AN, TA1217AF

TV-SOUND PROCESSOR

TA1217AN incorporates the following circuits :

- Four sound processor circuit channels Sound processor circuit for left channel of stereo Sound processor circuit for right channel of stereo Sound processor circuit for center channel of stereo Sound processor circuit for woofer channel of stereo
- I / O ports for controlling multiplex sound demodulation IC
- I / O ports for controlling sound IC

The IC comes in a 36-pin shrink DIP or 36-pin shrink SOP.

FEATURES

- Sound processor :
 - Volume control
 - Balance adjustment
 - Bass adjustment
 - Treble adjustment
 - Built-in woofer low-pass filter
- I / O port circuits :
 - Circuit for controlling IC used to demodulate
 - I²C bus line multiplex sound
 - Adjusts filters using bus line method
 - Circuit for controlling sound IC



SDIP36-P-500-1.78 : 2.98 g (Typ.) SSOP36-P-375-1.00 : 0.72 g (Typ.)

000707EBA1

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BLOCK DIAGRAM



<u>TOSHIBA</u>

TERMINAL FUNCTION

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT
1	C-ch LPF	Capacitor connecting pin for LPF for center channel bass. Connect capacitor between this pin and GND.	
27	R-ch LPF	Capacitor connecting pin for LPF for right channel bass. Connect capacitor between this pin and GND.	
32	L-ch LPF	Capacitor connecting pin for LPF for left channel bass. Connect capacitor between this pin and GND.	
2	C-ch Input	Input pin for center channel signal.	
30	R-ch Input	Input pin for right channel signal.	$\begin{array}{c} 30 \\ 34 \\ 34 \\ \end{array}$
34	L-ch Input	Input pin for left channel signal.	
3	W-ch Input	Input pin for woofer channel signal. Connect 1000pF capacitor between this pin and GND. Capacitor is for preventing oscillation.	
4 5 6	W-ch LPF	Input pins for woofer channel LPF. Connect capacitors between pin 4 and GND, 5 and GND, and 6 and GND.	

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT
7	W-ch Filter	Capacitor connecting pin for controlling current waveform smoothing. Connect capacitor between this pin and GND. Current on this pin is used to adjust woofer channel.	V _{CC} (9 V)
19	C-ch Filter	Capacitor connecting pin for control current waveform smoothing. Connect capacitor between this pin and GND. Current on this pin is used to adjust center channel.	7 19 23
23	Volume Filter	Capacitor connecting pin for control current waveform smoothing. Connect capacitor between this pin and GND. Current on this pin is used to adjust volume filter.	
8	Ripple Filter	Capacitor connecting pin used to reject ripples in supply voltage (9 V). Connect capacitor between this pin and GND.	
9	GND	GND pin	
10	W-ch Output	Output pin for woofer channel signal.	V _{CC} (9 V)
18	C-ch Output	Output pin for center channel signal.	
25	L-ch Output	Output pin for left channel signal.	
26	R-ch Output	Output pin for right channel signal.	

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT
11 12	Port 1 Port 2	Input pins (input ports) for peripheral IC control signals (digital signals). Apply (supply) to this pin output returned from peripheral ICs which are controlled by microcontroller via this IC. The return output contains data on operating status of peripheral ICs controlled by microcontroller (eg, operating status and operating mode set by microcontroller).	V _{CC} (9 V)
13	W-ch Offset	Rejects offset of woofer channel direct current bias voltage. Connect capacitor between this pin and GND.	V _{CC} (9 V)
14 15 16	Port 3 Port 4 Port 5	Output pins (output ports) for peripheral IC control signals (digital signals). Output microcontrol signals (I ² C bus line signals) to peripheral ICs from these pins. Microcontroller sets operating status (eg, operating mode) of peripheral ICs using these output signals. Pins are open-collector ; output levels are H and L.	V_{CC} (9 V) 14 15 16 16 100 Ω 1 ² C Bus Control
17	Port 6	Functions same as port 3 (pin 14), port 4 (pin 15) and port 5 (pin 16). Output levels are H, M and L.	$V_{CC} (9 V)$ (1) $V_{CC} (9 V)$ (2) (1) (1) (1) (2) (2) (2) (3)

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT
20	SDA	Input / output pin for I ² C bus line (SDA)	
21	SCL	Input pin for I ² C bus line (SCL)	
22	Balance Filter	Capacitor connecting pin for controlling current waveform smoothing. Connect capacitor between this pin and GND. Current on this pin adjusts balance.	V _{CC} (9 V)
24	Bass Filter	Capacitor connecting pin for control current waveform smoothing. Connect capacitor between this pin and GND. Current on this pin adjusts bass filter.	V_{CC} (9 V) \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow
31	Treble Filter	Capacitor connecting pin for control current waveform smoothing. Connect capacitor between this pin and GND. Current on this pin adjusts treble filter.	

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT
28	V _{CC}	Power supply pin. Apply (supply) externally direct voltage of 9 V \pm 0.9 V.	
36	C-ch HPF	Capacitor connecting pin for HPF for center channel treble. Connect capacitor between this pin and GND.	V_{CC} (9 V) 29 33 36 4 72×0
29	R-ch HPF	Capacitor connecting pin for HPF for right channel treble. Connect capacitor between this pin and GND.	
33	L-ch HPF	Capacitor connecting pin for HPF for left channel treble. Connect capacitor between this pin and GND.	
35	Address Switch	Input pin for slave address switch signal.Slave addresses of this IC are 80H and 82H. To set slave address to 80H, connect this pin to GND or leave pin open (not connected). To set slave address to 82H, connect this pin to V _{CC} .	V _{CC} (9 V) 35 60 kΩ G KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C KΩ C K C C K C C C K C C C C C C C C C C C C C

I²C BUS LINE CONTROL SIGNAL MAP

Listed below is a map of IC control signals transmitted from microcontroller via $\mathrm{I}^2\mathrm{C}$ bus line.

Control signal map in write mode

The control signals used to write (transmit) control data to this IC from the microcontroller are as mapped below.

SLAVE	SUB		CO	NTROL	SIGNAL /	ARRAY C	ONTEN	rs					
ADDRESS	ADDRESS	7	6	5	4	3	2	1	0				
	00H	*	Bass adj	ustment	32H (center of adjustment range)								
	01H	*	Treble ad	djustmer	32H (center of adjustment range)								
80H	02H	*	Volume a	adjustme		00H (smallest in adjustment range)							
(pin 35 = L) or 82H	03H	*	C-ch volu	ume leve	00H (smallest in adjustment range)								
(pin 35 = H)	04H	*	W-ch vol	ume leve		00H (smallest in adjustment range)							
	05H	*	Right and left volume balance adjustment 32				Right and left volume balance adjustment						
	06H	*	*	Po	rt 6	Port 5	Port 4	Port 3	*	20H			
	07H	*	*	W	FC	CTS	WLS	MT2	MT1	10H			

* : Unusable, H : hexadecimal

Details of sub addresses 06H and 07H

SYMBOL		CC	NTROL	SIGNA	L (SLAV	/E ADDI	RESS : 8	80H OR	82H)			
IN ABOVE	CONTROLLED DATA	CONTROL SIGNAL (SLAY SUB ADDRESS SUB ADDRESS CONTROL SIGNAL (SLAY CONTROL SIGNAL (SLAY ADDRESS (pin 14) output = L 7 6 5 (pin 14) output = H * * * * (pin 15) output = L * * * * (pin 16) output = H 06H * * * (pin 16) output = L 06H * * * (pin 17) output = 2.5 V 06H * * 0 (pin 17) output = 0.5 V * * 1 (pin 17) output = 5.0 V * * 1 r fo control : fo = 60 Hz * * 0 r fo control : fo = 80 Hz 07H * * 0	CONTROL SIGNAL ARRAY CONTENTS									
TABLE			4	3	2	1	0					
Port 3	Port 3 (pin 14) output = L		*	*					1	*		
1 011 0	Port 3 (pin 14) output = H		*	*					0	*		
Dort 4	Port 4 (pin 15) output = L		*	*				1		*		
	Port 4 (pin 15) output = H		*	*				0		*		
Port 5	Port 5 (pin 16) output = L	06H	*	*			1			*		
	Port 5 (pin 16) output = H		*	*			0			*		
	Port 6 (pin 17) output = 2.5 V		*	*	0	1				*		
Port 6	Port 6 (pin 17) output = 0.5 V		*	*	1	0				*		
	Port 6 (pin 17) output = 5.0 V		*	CONTROL SIGNAL ARRAY CONTENTS 6 5 4 3 2 1 0 * 1 * 1 * 0 * * 1 1 * 0 * * 1 1 * 0 * * 1 1 * 0 * * 1 1 * * 0 * * 1 1 * * 0 * * 0 1 1 * * * * 0 1 * * * * * 0 1 * * * * * 1 0 * * * * * * 1 1 *	*							
	Woofer fo control : fo = 60 Hz		*	*	0	0						
WEC	Woofer fo control : fo = 80 Hz	074	*	*	0	1						
VVFC	Woofer fo control : fo = 100 Hz	0/П	*	*	1	0						
	Woofer fo control : fo = 120 Hz		*	*	1	1						

SYMBOL		CONTROL SIGNAL (SLAVE ADDRESS : 80H OR 82H)									
IN ABOVE	CONTROLLED DATA	SUB ADDRESS	CONTROL SIGNAL ARRAY CONTENTS								
TABLE			7	6	5	4	3	2	1	0	
CTS	Center channel tone control off		*	*			1				
	Center channel tone control on		*	*			0				
WIS	Woofer LPF off		*	*				1			
WL3	Woofer LPF on		*	*				0			
МТ1	All-channel mute	07H	*	*						1	
	All-channel mute off		*	*						0	
MT2	Center-channel mute Woofer-channel mute		*	*					1		
	Center-channel mute off Woofer-channel mute off		*	*					0		

* : Unusable

CONTROL SIGNAL MAP IN READ MODE

The control signals used to return operating status (eg, operating mode) of the peripheral ICs to the microcontroller are as mapped below.

SLAVE	SUB ADDRESS	CONTROL SIGNAL ARRAY CONTENTS								
ADDRESS		7	6	5	4	3	2	1	0	INITIAL VALUE
81H (pin 35 = L) or 83H (pin 35 = H)		POR	*	*	*	*	*	Port 2	Port 1	

* : Unusable

SYMBOL		CONTROL SIGNAL (SLAVE ADDRESS : 80H OR 82H)										
IN ABOVE	CONTROLLED DATA	SUB ADDRESS	CONTROL SIGNAL ARRAY CONTENTS									
TABLE			7	6	5	4	3	2	1	0		
POR	Power-on-reset		1	*	*	*	*	*				
Port 2	Port 2 (pin 12) output = H			*	*	*	*	*	0			
FOIL 2	Port 2 (pin 12) output = L			*	*	*	*	*	1			
Port 1	Port 1 (pin 11) output = H			*	*	*	*	*		0		
	Port 1 (pin 11) output = L			*	*	*	*	*		1		

* : Unusable

MAXIMUM RATINGS (TA1217AN)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{CCMax.}	14.0	V
Power Dissipation	PD	1670	mW
Operating Temperature	T _{opr}	-20~65	°C
Storage Temperature	T _{stg}	-55~150	°C

MAXIMUM RATINGS (TA1217AF)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{CCMax.}	14.0	V
Power Dissipation	PD	1136	mW
Operating Temperature	T _{opr}	-20~75	°C
Storage Temperature	T _{stg}	-55~150	°C



RECOMMENDED OPERATING CONDITIONS (pin 28)

CHARACTERISTIC	SYMBOL	MIN	TYP.	MAX	UNIT	REMARKS
Supply Voltage	V _{CC}	8.9	9.0	9.9	V	—
Current Consumption	ICC	35	48	65	mA	At power-on-reset
Power Consumption	P _C	315	434	585	mW	At power-on-reset

ELECTRICAL CHARACTERISTICS DC CHARACTERISTICS Pin voltage

PIN No.	PIN NAME	SYMBOL	TEST CIR- CUIT	MIN	TYP.	MAX	UNIT	REMARKS
1	C-ch LPF	V1		4.4	4.9	5.4		—
2	C-ch Input	V2	_	4.4	4.9	5.4		—
3	Woofer Input	V3		4.4	4.9	5.4		—
4	W-ch LPF	V4		5.1	5.6	6.1		—
5	W-ch LPF	V5	_	5.1	5.6	6.1		—
6	W-ch LPF	V6	_	5.1	5.6	6.1		_
7	Woofer Filter	V7		_	0.0	-		When W-ch level = 00H
8	Ripple Filter	V8		5.1	5.6	6.1		—
9	GND	V9		_	-	-		—
10	Woofer Output	V10		3.7	4.2	4.7		At power-on-reset
11	Port 1	V11	_	_	_	_		_
12	Port 2	V12	_	_	_	_		_
13	W-ch Offset Filter	V13	_	4.4	4.9	5.4		_
14	Port 3	V14	_	—	-	-		Open-collector output
15	Port 4	V15	_	_	_	_		Open-collector output
16	Output Port	V16	—	—	—	—		Open-collector output
17	Output Port	V17		_		0.5		3-value output (at low output)
18	C-ch Output	V18	_	3.7	4.2	4.7	V	At power-on-reset
19	C-ch Filter	V19	_	_	0.0	_	v	When C-ch level = 00H
20	SDA	V20	_	_	_	_		_
21	SCL	V21	—	—	—	—		—
22	Balance Filter	V22	—	4.4	4.9	5.4		When balance = 32H
23	Volume Filter	V23	_	—	0.0	-		When volume = 00H
24	Bass Filter	V24	_	4.4	4.9	5.4		When bass = 32H
25	L-ch Output	V25	—	3.7	4.2	4.7		At power-on-reset
26	R-ch Output	V26	—	3.7	4.2	4.7		At power-on-reset
27	R-ch LPF	V27	_	4.4	4.9	5.4		—
28	V _{CC}	V28	_	_	9.0	-		—
29	R-ch HPF	V29	_	4.4	4.9	5.4		—
30	R-ch Input	V30	—	4.4	4.9	5.4		—
31	Treble Filter	V31	_	4.4	4.9	5.4		When treble = 32H
32	L-ch LPF	V32	—	4.4	4.9	5.4		—
33	L-ch HPF	V33	—	4.4	4.9	5.4		—
34	L-ch Input	V34	—	4.4	4.9	5.4		_
35	Address Switch	V35	—	_	_	_		Slave address switching pin
36	C-ch HPF	V36	—	4.4	4.9	5.4		_

AC CHARACTERISTICS

CHARACTER	RISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	TEST PIN	MIN	TYP.	MAX	UNIT
		Gv.L			Pin 25				
Gain		Gv.R	2	(Note 1)	Pin 26	-0.2	1.8	3.8	dB
Gain		Gv.C	2		Pin 18				u.D
		Gv.W			Pin 10	9.0	12.0	15.0	
		THD.L			Pin 25				
Total Harmonia Distart	lion	THD.R		(Nata 2)	Pin 26		0.25	1 1	0/
Total Harmonic Diston	THD.C		(Note 2)	Pin 18	_	0.25	1.1	70	
		THD.W			Pin 10				
		SN.L			Pin 25				dB
0 (N		SN.R		() -+- 0)	Pin 26		_	-70	
57N		SN.C	2	(Note 3)	Pin 18	_			
		SN.W			Pin 10				
		V _{NO} .L			Pin 25				uV
		V _{NO} .R			Pin 26				
Residual Noise	V _{NO} .C	2	(Note 4)	Pin 18	_		50	μν _{p-p}	
		V _{NO} .W			Pin 10				
		FC _L .L			Pin 25				
Frequency Characteris	stic	FC _L .R	2	(Note 5)	Pin 26	-2	0	2	dB
(100112)		FC _L .C			Pin 18				
		FC _H .L			Pin 25		0	2	
Frequency Characteris	stic	FC _H .R	2	(Note 6)	Pin 26	-2			dB
		FC _H .C			Pin 18				
	fc = 60Hz	FCo.W1				-11	-7	-4	
LPF Frequency	fc = 80Hz	FCo.W2				-8	-5	-2	
Characteristic (160Hz)	fc = 100Hz	FCo.W3	2	(Note 7)	Pin 10	-7	-4	-1	dB
	fc = 120Hz	FCo.W4				-16	-9	-1	
Balance Center		ΔV_{L-R}	2	(Note 8)	Pin 25, Pin 26	-2	0	2	dB
		V _{LMIN}	_		Pin 25				15
Balance Minimum		V _{RMIN}	2	(Note 9)	Pin 26	_	_	-60	dВ
		V _{TMAX} L			Pin 25				
Treble Maximum	V _{TMAX} R	2	(Note 10)	Pin 26	6.0	8.0	10.0	dB	
		V _{TMAX} C			Pin 18				
	V _{TMIN} L			Pin 25			-6.0	dB	
Treble Minimum	V _{TMIN} R	2	(Note 11)	Pin 26	-10.0	-8.0			
		V _{TMIN} C	1		Pin 18				

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	TEST PIN	MIN	TYP.	MAX	UNIT
	V _{BMAX} L			Pin 25				
Bass Maximum	V _{BMAX} R	2	(Note 12)	Pin 26	6.0	8.0	10.0	dB
	V _{BMAX} C			Pin 18				
	V _{BMIN} L			Pin 25				dB
Bass Minimum	V _{BMIN} R	2	(Note 13)	Pin 26	-10.0	-8.0	-6.0	
	V _{BMIN} C			Pin 18				
	V _{VCEN} L			Pin 25				1
Volumo Contor	V _{VCEN} R	2	(Noto 14)	Pin 26	_10	10	-13	
volume Center	V _{VCEN} C	2	(INDLE 14)	Pin 18	-10	-10	-13	uв
	V _{VCEN} W			Pin 10				
Level Center	V _{LCEN} C	2	(Noto 15)	Pin 18	-0.0	-7.0	-5.0	dD
	V _{LCEN} W	2	(11010-15)	Pin 10	-9.0	-7.0	-5.0	aв
	V _M .L			Pin 25			100	μV _{p-p}
Posidual Naisa	V _M .R	2	(Noto 16)	Pin 26				
	V _M .C	2		Pin 18		_	100	
	V _M .W			Pin 10				
	CR _{L-R}			Pin 26				
	CR _{R-L}			Pin 25				
	CR _{L-C}			Pin 18				dB
	CR _{R-C}		(Note 17)	Pin 18		_	80	
	CR _{C-L}			Pin 25				
Cross Talk	CR _{C-R}	2		Pin 26				
CIUSS Taik	CR _{L-W}	2		Pin 10				
	CR _{R-W}			Pin 10				
	CR _{C-W}			Pin 10	—	-	60	
	CR _{W-L}			Pin 25				
	CR _{W-R}			Pin 26	—	—	80	
	CR _{W-C}			Pin 18				
	RR.L			Pin 25				
Ripple Rejection Ratio (Minimum Volume)	RR.R	2	(Note 18)	Pin 26	—	—	-30	dB
	RR.C			Pin 18				
	RR' L			Pin 25				
Ripple Rejection Ratio (Maximum Volume)	RR'.R	2	(Note 19)	Pin 26	—	_	-30	dB
	RR'.C			Pin 18				
	V _{OUT} .L			Pin 25				
Output Dynamic Range	V _{OUT} .R	2	(Note 20)	Pin 26	6.5	_	-	V
Supar Dynamic Nange	V _{OUT} .C		(11010 20)	Pin 18	0.0			
	V _{OUT} .W			Pin 10				

CHARACTERISTICS	SYMBOL	TEST CIR- CUIT	TEST CONDITION	TEST PIN	MIN	TYP.	MAX	UNIT
	V _{IN} .L			Pin 34				
Innut Dunamia Danga	V _{IN} .R	2	(Noto 21)	Pin 30	5.0	5.4	—	V
Input Dynamic Range	V _{IN} .C		(11018 21)	Pin 2				v
	V _{IN} .W			Pin 3	3.5	3.5 4.4		
	ΔV _{BAS}							
	ΔV_{TRB}			Pin 25, Pin26		110		
Offect	ΔV _{VCL}		(Noto 22)				350	m\/
Onset	ΔV _{CL}		(11018 22)	Pin 18	_			mV
	ΔV _{WL}			Pin 10				
	ΔV _{BAL}			Pin 25, Pin26				
	MU.M			Pin 25				
Mute Residual Sound	MU.C	2	(Note 23)	Pin 18	—	—	100	µVp-p
	MU.W			Pin 10				
LPF Off Mode	SW. _{L-}	2	(Note 24)	Pin 10	-2	0	2	dB
Port 1, Port 2 Low-Level Input		2	(Noto 25)	Pin 11			1.0	V
Voltage	V1L	2	(11018-25)	Pin 12	_			v
Port 1, Port 2 High-Level Input	Maria	2	(Noto 26)	Pin 11	3.5	_	V _{CC}	V
Voltage	¥1H	2	(11018 20)	Pin 12	_	—	—	v
Port 6 Low-Level Output Voltage	V _{6Lo}	2	(Note 27)	Pin 17	_	_	0.5	V
Port 6 Medium-Level Output Voltage	V _{6Mid}	2	(Note 28)	Pin 17	2.0	2.5	3.0	V
Port 6 High-Level Output Voltage	V _{6Hi}	2	(Note 29)	Pin 17	4.5	5.0	_	V
Port 6 Source Current	I _{HiP6}	2	(Note 30)	Pin 17	_	_	2	mA
Port 6 Sink Current	I _{LoP6}	2	(Note 31)	Pin 17	_	_	300	μA
Port 3, Port 4, Port 5 Sink Current	Ι _{Lo}	2	(Note 32)	Pin 14, Pin 15, Pin 16	_	_	1	mA

TEST CONDITION

NOTE	СЦАРАСТІ	EDIGI			SET	VALL				DATA		INPUT		
No.	CHARACTI		iic	00H	01H	02H	03H	04H	05H	06H	07H	SIGNAL	TEST METHOD	
1	Gain		L-ch	32H	32H	64H	64H	64H	32H	20H	10H	1kHz, 500mV	Measure gain	
			R-ch										output.	
			C-ch											
			W-ch									80Hz, 500mV		
2	Total Harmonic		L-ch	↑	Ť	Ť	Ŷ	Ť	Ť	↑	Ť	1kHz, 500mV	Measure distortion	
	Distortion		R-ch											
			C-ch											
			W-ch									80Hz, 500mV		
3	S / N		L-ch	↑	↑	Ŷ	Ŷ	Ŷ	↑	↑	↑	1kHz, 500mV	When signal level is A	
			R-ch										B, determine	
			C-ch										20 ℓog (A / B).	
			W-ch									80Hz, 500mV	Use 15 kHz LPF.	
4	Residual Noise		L-ch	↑	¢	î	î	00H	î	Ŷ	Ŷ	AC ground	Use LPF of 15 kHz,	
			R-ch									(non-signal)	minimum volume.	
			C-ch											
			W-ch											
5	Frequency		L-ch	Ŷ	Ť	î	1	64H	î	Ť	Ŷ	100Hz,	Output level is 0dB	
	(100Hz)		R-ch									500mV	input.	
			C-ch											
6	Frequency		L-ch	Ŷ	Î	î	î	î	î	Ť	Ŷ	10kHz,	Ditto	
	(10kHz)		R-ch									500mV		
			C-ch											
7	LPF Frequency	fc =	60Hz	¢	Î	î	ſ	Î	î	¢	00H	500mV	Difference from fo = 80Hz	
	(160 Hz)	fc =	80Hz								10H		Difference from fo = 100Hz	
		fc =	100Hz								20H		Difference from fo = 120Hz	
		fc =	120Hz								30H		Difference from LPF off	
8	Balance Center			Ţ	Î	Ţ	Ţ	Ţ	¢	Ţ	10H	1kHz, 500mV	Measure gain difference between L and R.	
9	Balance Minimu	m	L-ch	Ť	¢	Ŷ	¢	Ŷ	64H	¢	¢	1kHz, 500mV	Measure residual sound at minimum	
			R-ch						00H				balance. Use 1kHz BPF.	

TA1217AN/AF

NOTE				SET	VALU	IE OF	CONT	ROL E				
No.	CHARACTERIS	STIC			FRC		BUSI		0.011	0711	SIGNAL	TEST METHOD
40	Table Maximum		00H	01H	02H	03H	04H	05H	06H	07H		
10	I redie Maximum	L-Ch R-ch	Ť	64H	ſ	ſ	Ĩ	3211	ſ	ĵ	10kmz, 500mV	when 1 kHz signal is
		Cach	1									Input with tone hat.
11	Treble Minimum	L-ch	32H	00H	64H	64H	64H	32H	20H	10H	10kHz,	Output level is 0dB
		R-ch		•-	•	•					500mV	when 1 kHz signal is
		C-ch	-									Input with tone hat.
12	Bass Maximum	L-ch	64H	32H	↑	↑	↑	↑	↑	↑	100Hz,	
		R-ch	1								500mV	Ditto
		C-ch	1									
13	Bass Minimum	L-ch	00H	¢	1	↑	↑	↑ (↑	↑	40011-7	
		R-ch	1								100HZ,	Ditto
		C-ch	1								50000	
14	Volume Center	L-ch	32H	¢	32H	¢	¢	1	¢	¢	80Hz, 500mV	0 dB at maximum
		R-ch										volume.
		C-ch									80Hz, 500mV	
		W-ch										
15	Level Center	C-ch	¢	¢	64H	32H	32H	1	Ŷ	¢	1kHz. 500mV	0 dB at maximum
		W-ch									····· · , ····	
16	Residual Noise	L-ch	↑	1	00H	00H	00H	1	Î	1	80Hz, 500mV	Measure output
		R-ch										
		C-ch										minimum volume.
		W-ch	ļ									
17	Cross Talk	L→R	¢	1	64H	64H	64H	1	1	↑	1kHz, 500mV	R output at L input.
		R→L										L output at R input
		L→C										C output at L input
		R→C									80Hz, 500mV	C output at R input
		C→L										L output at C input
		C→R]									R output at C input
		L→W										W output at L input
		R→W										W output at R input.
		C→W										W output at L input
		W→L										L output at W input
		W→R]									R output at W input
		W→C										C output at W input
18	Ripple Rejection Ratio	L-ch	↑	↑	↑	↑	Î	Î	↑	Î	60Hz, 500mV	Apply V_{CC} via 51 Ω and input signal from
	(Minimum Volume)	R-ch										pin 28.
		C-ch										

NOTE	CUADACT			SET	VALU	E OF (INPUT					
No.	CHARACTE	-RISI		00H	01H	02H	03H	04H	05H	06H	07H	SIGNAL	TEST METHOD
19	Ripple Rejection		L-ch	32H	32H	64H	64H	64H	32H	20H	10H	60 Hz, 500 mV	Apply V_{CC} via 51 Ω
	Maximum Volum	e)	R-ch										from pin 28.
			C-ch										
			W-ch										
20	Output Dynamic Range		L-ch	64H	64H	↑	ſ	î	Ŷ	ſ	Î	100 Hz, 10kHz	Output amplitude at
	i tango		R-ch	_									(THD = 1%)
			C-ch										(,.,
			W-ch									80 Hz	
21	Input Dynamic Range		L-ch	32H	32H	32H	ſ	Ŷ	¢	ſ	Ť	1 kHz	Input amplitude at output distortion
			R-ch	_									(THD = 1%)
			C-ch										
		1	W-ch									80 Hz	
22	22 Offset BA		6	*						Î	Î	AC ground	DC change according to bass
		TRE	}		*								control.
	VOL C LE		-			*							* : Arbitrary data
			EV				*						
		WL	EV					*					
		BAL							*				
23	Mute Residual Sc	ound	L-ch	32H	32H	64H	64H	64H	32H	ſ	11H	1kHz, 500mV	—
			C-ch								12H		-
			W-ch									80Hz, 500mV	
24	LPF Off Mode		W-ch	Ť	Ť	↑	↑	↑	Î	Î	14H	1kHz, 500mV	—
25	Port1, Port2 Low- Level Input Voltag	je	—	—	—	—	—	—	—	—	—	—	_
26	Port 1, Port 2 Hig Level Input Voltag	h- je	_	—	_	_	_	_	_	_	_	_	_
27	Port 6 Low-Level Output Voltage		-	_	_	-	_	_	20H	_	_	_	_
28	Port 6 Medium-Le Output Voltage	evel	_	-	_	_	_	_	10H	_	_	_	_
29	Port 6 High-Level Output Voltage		_	-	_	_	_	_	30H	_	_	_	_
30	Port 6 Source Cu	rrent	—	—	—	-	—	—	20H	—	—	—	_
31	Port 6 Sink Curre	nt	_	—	—	-	_	—	10H	_	—	—	_
32	Port 3, Port 4, P Sink Current	ort 5	_	-	_	_	_	_	1FH	_	_	_	_

TEST CIRCUIT

DC Characteristic



AC Characteristic



APPLICATION CIRCUIT



PACKAGE DIMENSIONS

SDIP36-P-500-1.78

Unit : mm



Weight: 2.98g (Typ.)

PACKAGE DIMENSIONS

SSOP36-P-375-1.00

Unit : mm



Weight: 0.72 g (Typ.)