

SOP-8 DIP-8

Pin Definition: 1. Output A 8. Vcc 2. Input A (-) 7. Output B 3. Input A (+) 6. Input B (-) 4. Ground 5. Input B (+)

General Description

The TS4558 is dual general purpose operational amplifier, and provide the high common-mode input voltage range and the absence of latch-up make these amplifiers ideal for voltage follower application.

The devices are short circuit protected and the internal frequency compensation ensures stability without external components. The TS4558 is offered in 8 pin SOP-8 and DIP-8 package.

Features

- Short circuit protection
- Wide common-mode and differential ranges
- No frequency compensation required
- Low power consumption
- No latch-up
- 3MHz unity gain bandwidth guaranteed
- Gain and phase match between amplifiers

Applications

- DVD player
- Audio application

Ordering Information

Part No.	Package	Packing
TS4558CD C3	DIP-8	50pcs / Tube
TS4558CS RL	SOP-8	2.5Kpcs / 13" Reel

Schematic (each amplifier)

Block Diagram







Absolute Maximum Rating

Parameter	Symbol	Value	Unit		
Supply Voltage		Vcc +	18	V	
Supply Voltage		Vcc -	-18	V	
Differential Input Voltage		VIDR	±30	V	
Input Voltage	Vin	30	V		
	DIP-8	Aia	97	°C/W	
Fackage memai impedance	SOP-8	Oja	85		
Operating Junction Temperature Range		TJ	0 ~ +70	°C	
Storage Temperature Range		TSTG	-65 ~ +150	°C	
Lead Temperature 1.6mm(1/16") from case for 10Sec.		TLEAD	260	°C	

Note: Maximum ratings are those values beyond which damage to the device may occur, and functional operation should be restricted to the recommended operating condition.

Recommended Operating Conditions

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc +	15	V
Supply Voltage	Vcc -	-15	V

Electrical Specifications (V_{CC} = ±15V, Ta =25°C; unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Тур	Max	Unit
Input Offset Current	lio			20	±200	nA
Input Bias Current	lib			150	500	nA
Input Resistance	Ri		0.3	5		MΩ
Unity Gain Bandwidth	B1			3		MHz
Large-Signal Voltage Gain	Av	RL ≥ 2kΩ, Vc = ±10V	20	300		V/mV
Output Voltago Swing	Vom	RL ≥ 10kΩ	±12	±14		
Output voltage Swing	VOIII	RL ≥ 2kΩ	±10	±14		v
Input Common-Mode Voltage Range	Vicr		±12	±13		V
Common-Mode Rejection Ratio	CMRR	Rs ≤ 10kΩ	70	90		dB
Supply Voltage Rejection Ratio	PSRR	Rs ≤ 10kΩ		30	150	uV/V
Slew Rate	SR	RL = 2kΩ, Vin=10V, L=100pF	0.8	1.6		V/uS
Supply Current	I+, I -			2.5	5.6	mA
Power Consumption	Pc	RL = ∞		75	170	mV
Input Noise Voltage	Vn	Rs = 1kΩ, f = 30Hz~30KHz			3.5	uVrms
Source Current	Isource		-20			mA
Sink Current	Isink		20			mA

Note : All characteristics are measured under open-loop conditions with zero common-mode input voltage, unless otherwise specified.



Electrical Characteristics Curve









Figure 3. Output Noise vs. Source Resistance





Figure 4. Spectral Noise Density



Unlike conventional peak reading or RMS meters, this system was especially designed to provide the quick response time essential to burst (popcorn) noise testing.

The test time employed is 10 sec and the 20 μ V peak limit refers to the operational amplifier input thus eliminating errors in the closed loop gain factor of the operational amplifier.

Figure 5. Burst Noise Test Citcuit



Electrical Characteristics Curve









Figure 7. Phase Margin vs. Frequency















SOP-8 Mechanical Drawing

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SOP-8 DIMENSION					
DIM	MILLIMETERS		INCHES		
	MIN	MAX	MIN	MAX.	
А	4.80	5.00	0.189	0.196	
В	3.80	4.00	0.150	0.157	
С	1.35	1.75	0.054	0.068	
D	0.35	0.49	0.014	0.019	
F	0.40	1.25	0.016	0.049	
G	1.27BSC		0.05	BSC	
К	0.10	0.25	0.004	0.009	
М	0°	7°	0°	7°	
Р	5.80	6.20	0.229	0.244	
R	0.25	0.50	0.010	0.019	



DIP-8 Mechanical Drawing





DIP-8 DIMENSION					
DIM	MILLIM	ETERS	INCHES		
	MIN	MAX	MIN	MAX	
А	9.07	9.32	0.357	0.367	
В	6.22	6.48	0.245	0.255	
С	3.18	4.45	0.125	0.135	
D	0.35	0.55	0.019	0.020	
G	2.54 (typ)		0.10	(typ)	
J	0.29	0.31	0.011	0.012	
Κ	3.25	3.35	0.128	0.132	
L	7.75	8.00	0.305	0.315	
М	-	10 [°]	-	10 [°]	



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