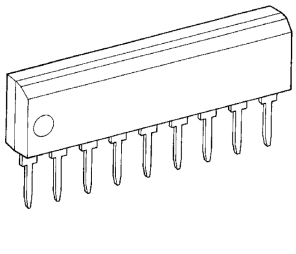
TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

TA8193S

Dual Line Output Amplifier

The TA8193S is dual line output amplifier designed for audio use.

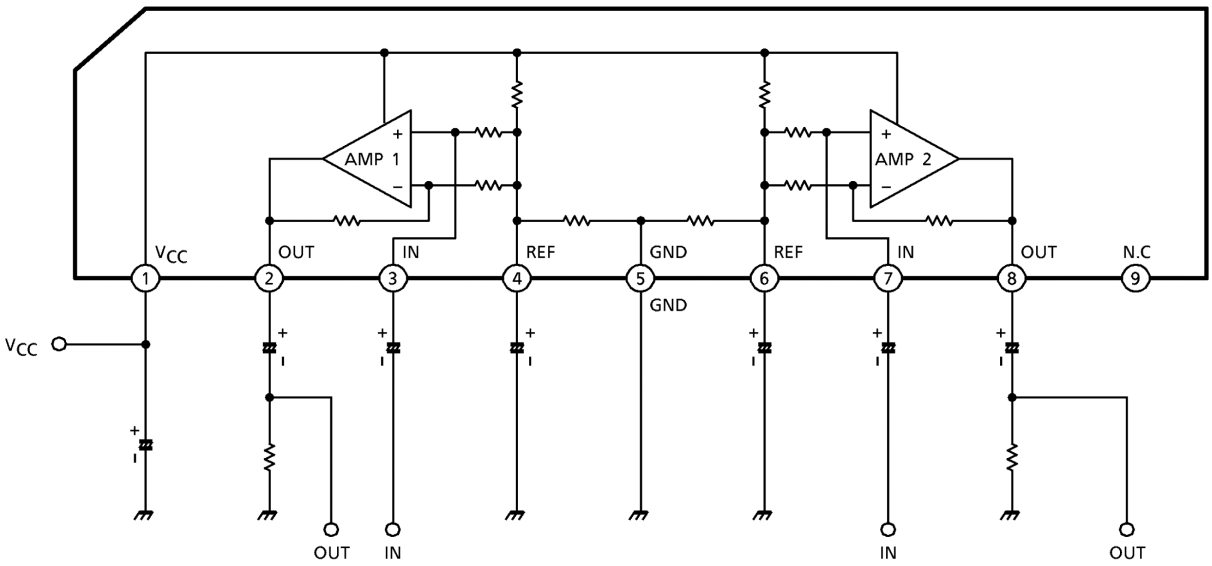


Weight: 0.65g (typ.)

Features

- Suitable for line output amplifier
- Built−in feedback resistor
- Few external parts
- Fixed voltage gain: G_V = 20dB (typ.)
- Low noise: V_{NO} = 30μV_{rms} (typ.)
  (R_g = 10kΩ, DIN audio)
- Small package: Slim SIP 9pin
- Operating supply voltage range: $V_{CC\ (opr.)}$ = 5~16V (Ta = 25°C)

Block Diagram



Maximum Ratings (Ta = 25°C)

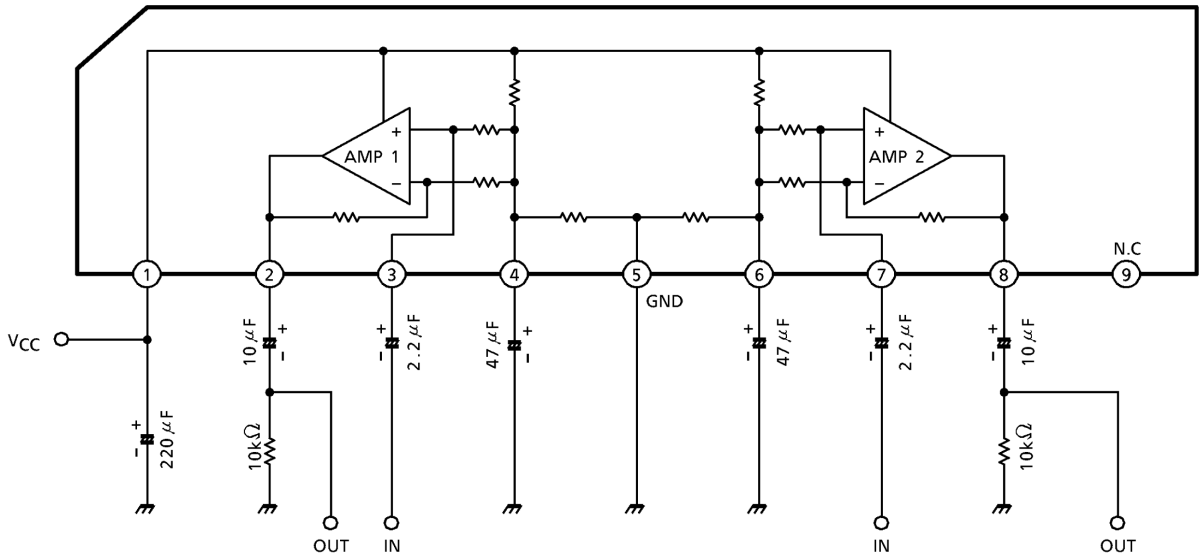
Characteristic	Symbol	Rating	Unit
Supply voltage	V_{CC}	18	V
Power dissipation	P_D (Note)	500	mW
Operating temperature	T_{opr}	−30~85	°C
Storage temperature	T_{stg}	−55~150	°C

(Note) Derated above Ta = 25°C in the proportion of 4 mW / °C.

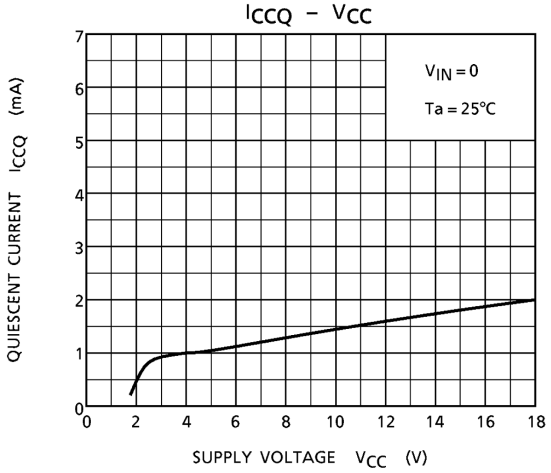
Electrical Characteristics (unless otherwise specified, V_{CC} = 8V, f = 1kHz, R_L = 10kΩ, Ta = 25°C)

Characteristic	Symbol	Test Cir−cuit	Test Condition	Min.	Typ.	Max.	Unit
Quiescent current	I_{CCQ}	—	V_{IN} = 0	—	1.5	2.5	mA
Maximum output voltage	V_{OM}	—	THD = 1%	1.4	2.0	—	V_{rms}
Closed loop voltage gain	G_V	—	—	18.5	20	21.5	dB
Total harmonic distortion	THD	—	V_{OUT} = 300mV_{rms}	—	0.02	0.3	%
Output noise voltage	V_{NO}	—	R_g = 10kΩ, BPF = 20~20kHz	—	30	60	μV_{rms}
Cross talk	C.T	—	R_g = 10kΩ	—	−75	—	dB

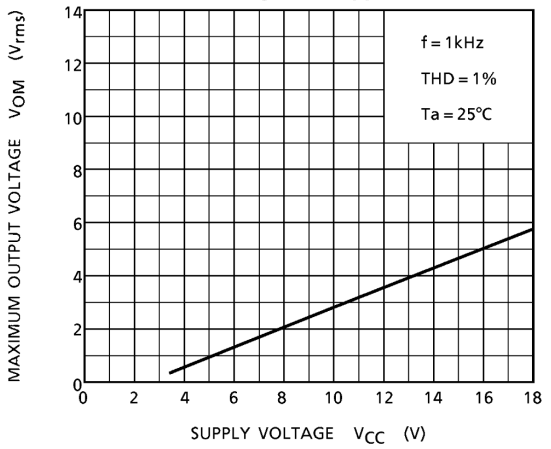
Test Circuit



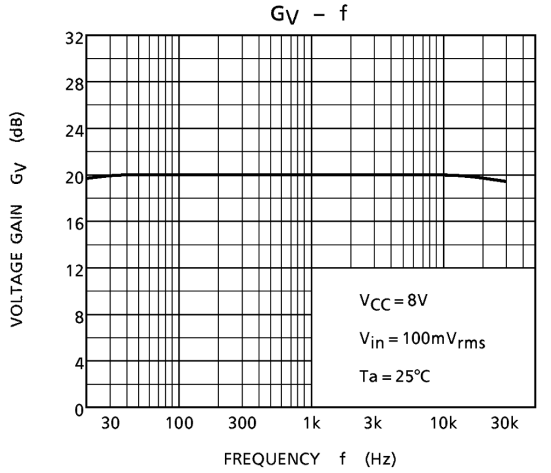
I_{CCQ} – V_{CC}



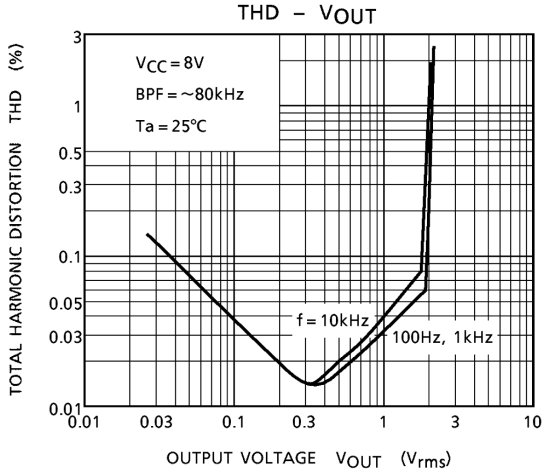
V_{OM} – V_{CC}



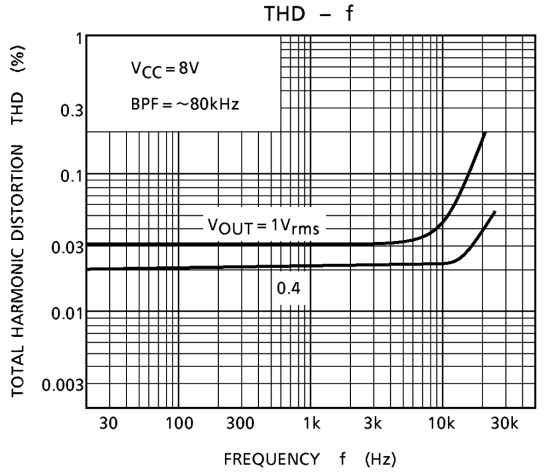
G_V – f



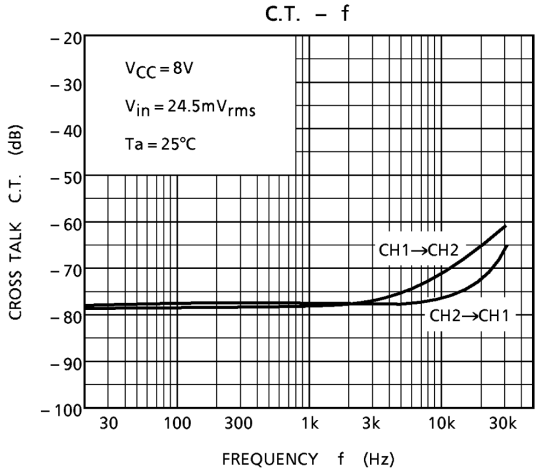
THD – V_{OUT}

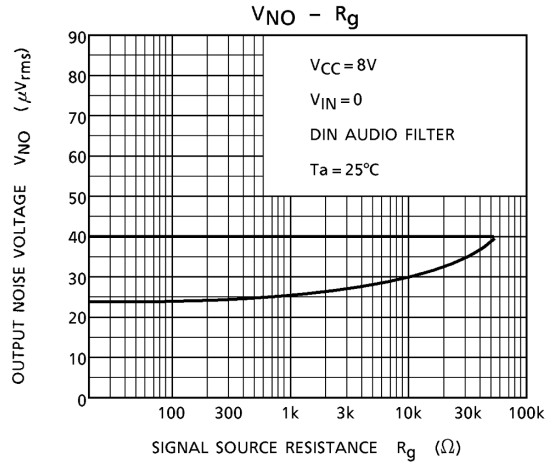


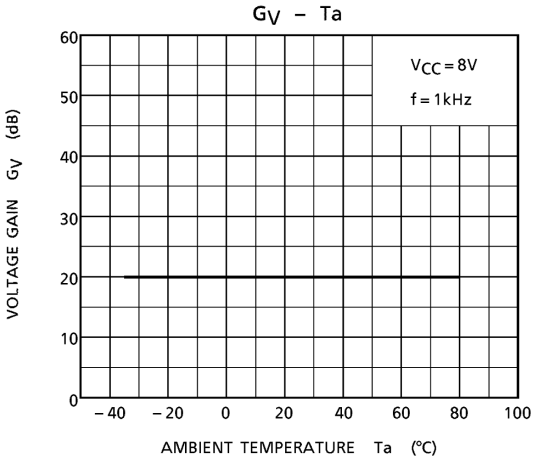
THD – f

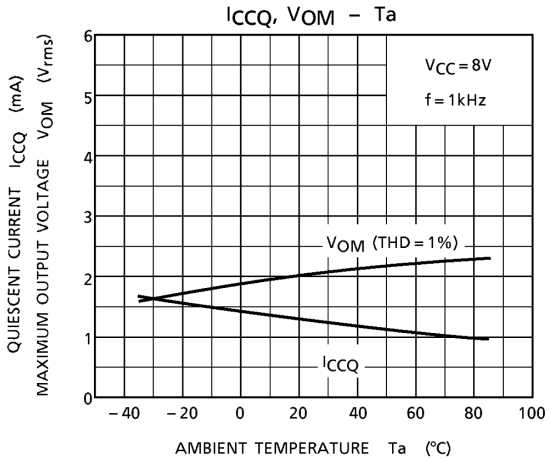


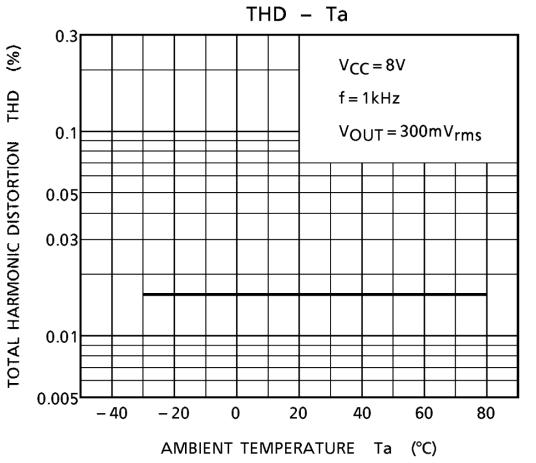
C.T. – f




V_{NO} – R_g
OUTPUT NOISE VOLTAGE V_{NO} (μV_{rms})
V_{CC} = 8V
V_{IN} = 0
DIN AUDIO FILTER
Ta = 25°C
SIGNAL SOURCE RESISTANCE R_g (Ω)

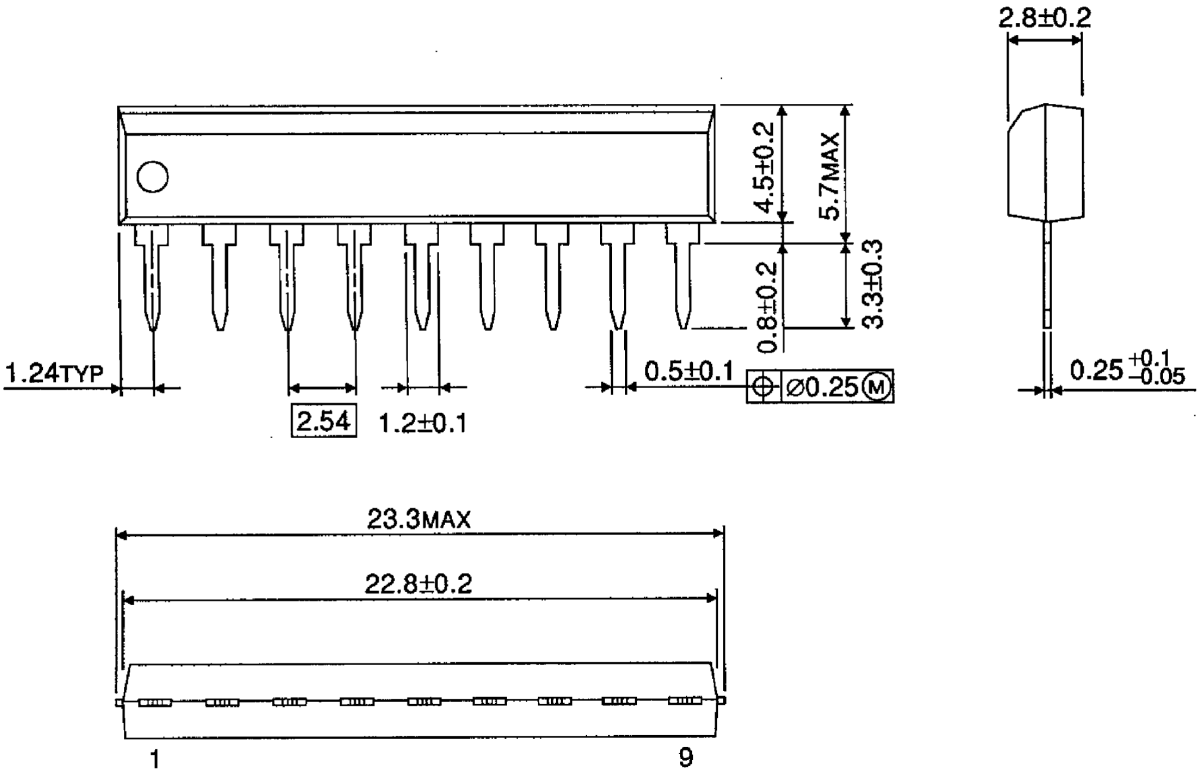

G_V – Ta
VOLTAGE GAIN G_V (dB)
V_{CC} = 8V
f = 1kHz
AMBIENT TEMPERATURE Ta (°C)


I_{CCQ}, V_{OM} – Ta
QUIESCENT CURRENT I_{CCQ} (mA)
MAXIMUM OUTPUT VOLTAGE V_{OM} (V_{rms})
V_{CC} = 8V
f = 1kHz
V_{OM} (THD = 1%)
I_{CCQ}
AMBIENT TEMPERATURE Ta (°C)


THD – Ta
TOTAL HARMONIC DISTORTION THD (%)
V_{CC} = 8V
f = 1kHz
V_{OUT} = 300mV_{rms}
AMBIENT TEMPERATURE Ta (°C)

Package Dimensions

SIP9-P-2.54C Unit : mm



Weight: 0. 65g (typ.)

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