

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

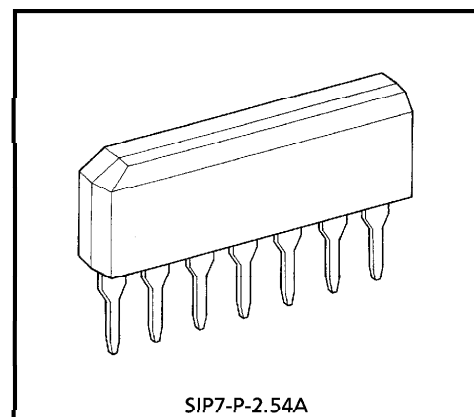
# TA2011S

## MIC AMP IC

TA2011S is suitable for audio mic amplifier of portable cassette tape recorder and karaoke.

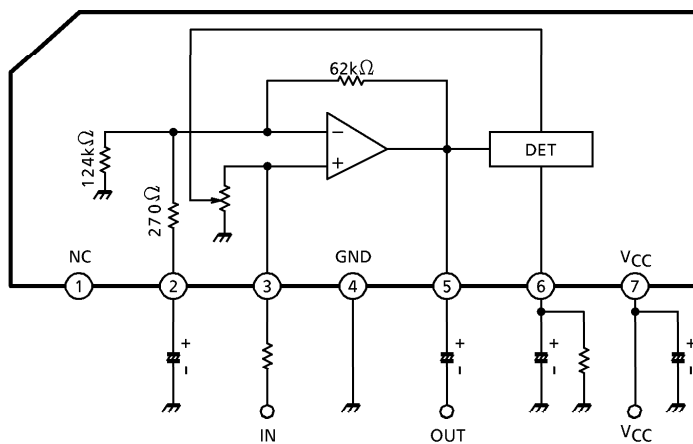
### FEATURES

- Built in ALC DET Circuit.
- Built in NFB resistance. (Voltage gain is fixed)  
 $G_V = 47\text{dB}$  (Typ.)  
 :  $f = 1\text{kHz}$ , ALC OFF
- ALC Level  
 :  $V_{\text{out}}(\text{ALC}) = 0.6V_{\text{rms}}$  (Typ.)
- ALC Range  
 :  $R_{\text{ALC}} = 58\text{dB}$  (Typ.)
- Operating Supply Voltage Range  
 :  $V_{\text{CC}}(\text{opr}) = 4\sim 14\text{V}$  ( $T_a = 25^\circ\text{C}$ )



Weight : 0.7g (Typ.)

### BLOCK DIAGRAM



980910EBA2

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**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V <sub>CC</sub>	14	V
Power Dissipation	P <sub>D</sub> (Note)	900	mW
Operating Temperature	T <sub>opr</sub>	- 25~75	°C
Storage Temperature	T <sub>stg</sub>	- 55~150	°C

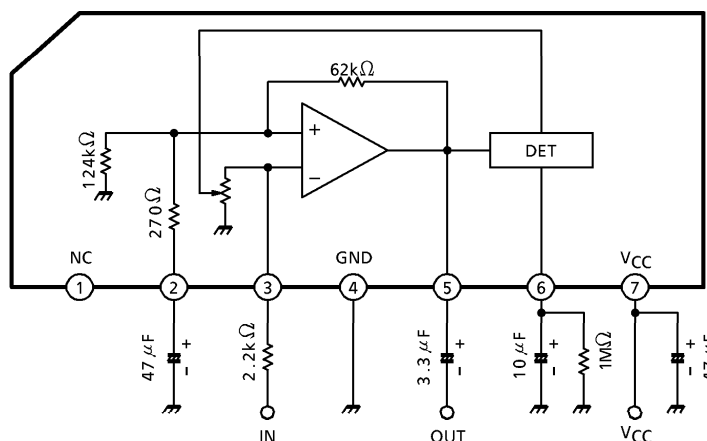
(Note) Derated above Ta = 25°C in the proportion of 7.2mW/°C.

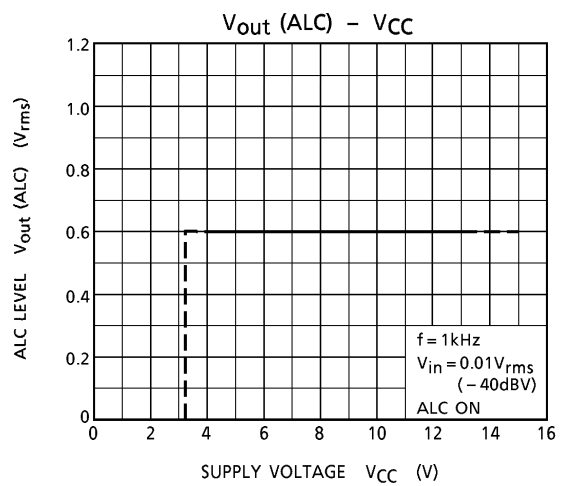
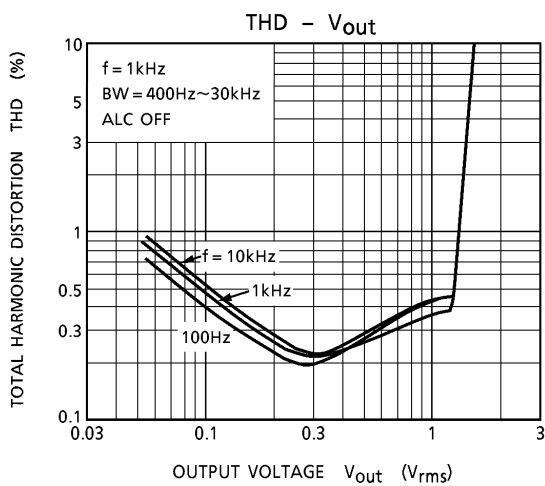
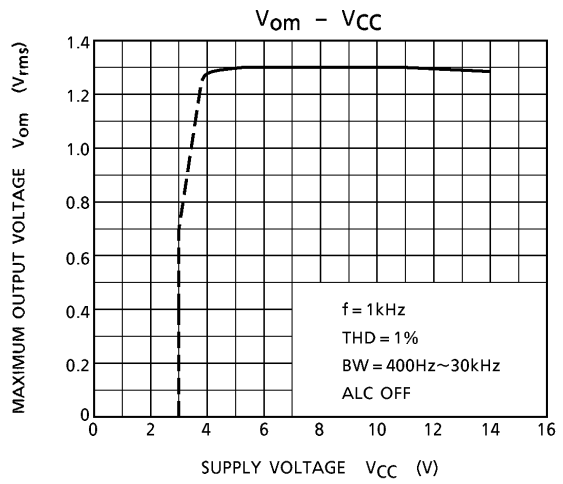
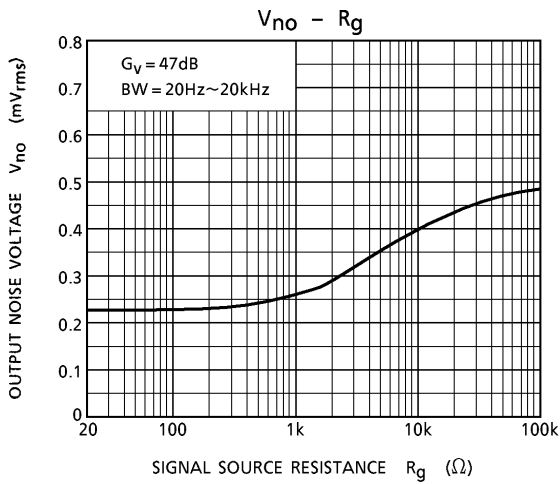
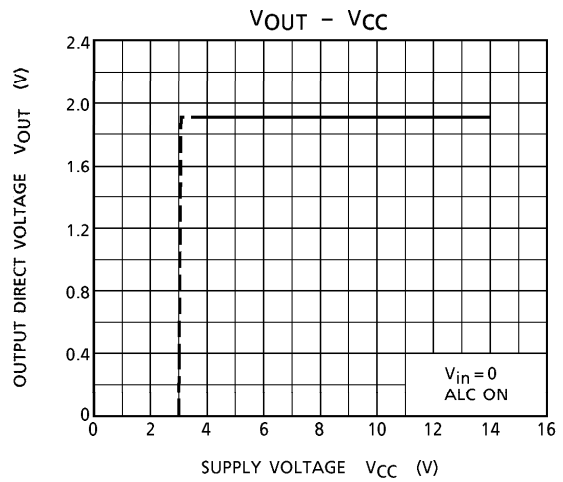
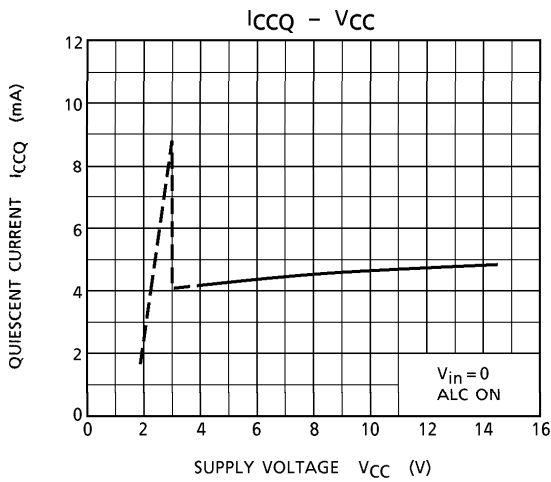
**ELECTRICAL CHARACTERISTICS**

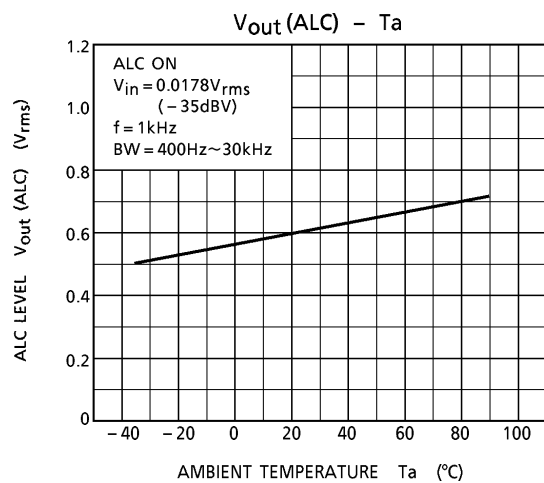
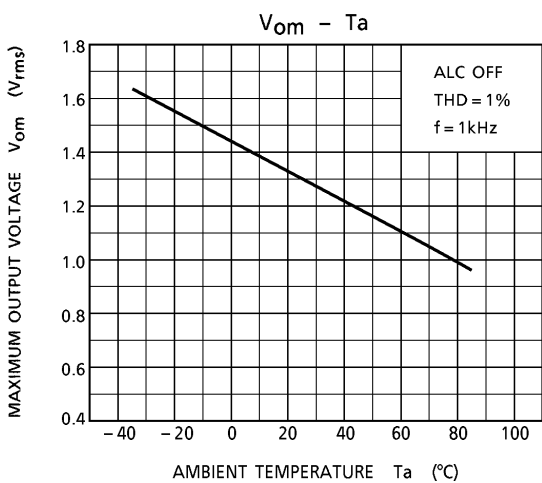
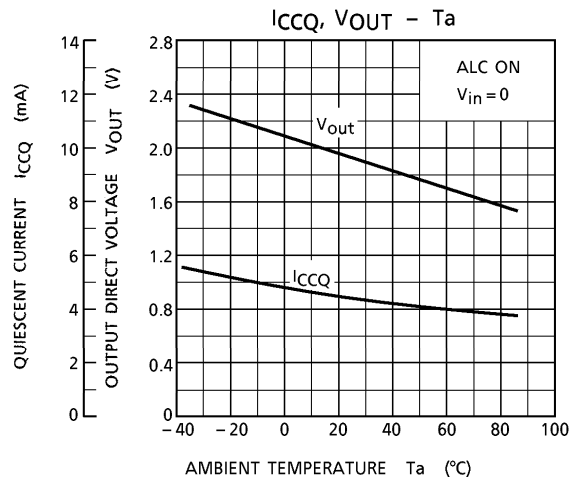
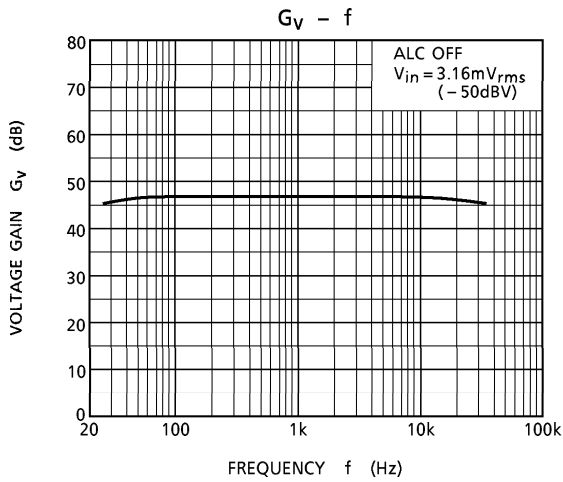
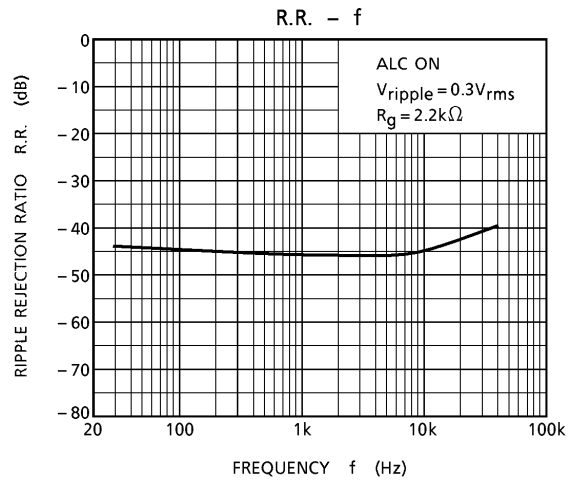
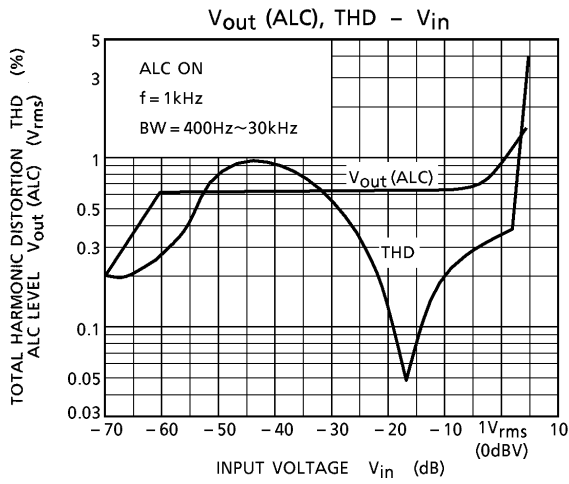
(Unless otherwise specified, V<sub>CC</sub> = 7V, f = 1kHz, R<sub>L</sub> = 10kΩ, ALC = OFF, Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I <sub>CCQ</sub>	—	V <sub>in</sub> = 0, ALC ON	—	4.4	8.0	mA
Voltage Gain	G <sub>V</sub>	—	—	45.5	47	48.5	dB
Maximum Output Voltage	V <sub>om</sub>	—	THD = 1%	1.0	1.3	—	V <sub>rms</sub>
Total Harmonic Distortion	THD	—	V <sub>out</sub> = 0.3V <sub>rms</sub> BW = 400Hz~30kHz	—	0.2	0.5	%
ALC Level	V <sub>out</sub> (ALC)	—	V <sub>in</sub> = 0.0178V <sub>rms</sub> (- 35dBV)	0.5	0.6	0.7	V <sub>rms</sub>
ALC Range	R <sub>ALC</sub>	—	3dB up	40	58	—	dB
Attack Time	T <sub>ATK</sub>	—	V <sub>in</sub> = 1.41mV <sub>rms</sub> (- 57.0dBV) →0.014V <sub>rms</sub> (- 37.0dBV)	—	0.05	—	s
Recovery Time	T <sub>RCV</sub>	—	V <sub>in</sub> = 0.014V <sub>rms</sub> (- 37.0dBV) →0.447mV <sub>rms</sub> (- 67.0dBV)	—	2	—	s
Ripple Rejection Ratio	R.R.	—	f = 100Hz, V <sub>ripple</sub> = 0.1V <sub>rms</sub>	- 30	- 46	—	dB
Input Resistance	R <sub>IN</sub>	—	—	—	20	—	kΩ
Equivalent Input Noise Voltage	V <sub>ni</sub>	—	BW = 20Hz~20kHz G <sub>V</sub> = 47dB, R <sub>g</sub> = 2.2kΩ	—	1.4	3.0	μV

**TEST CIRCUIT**

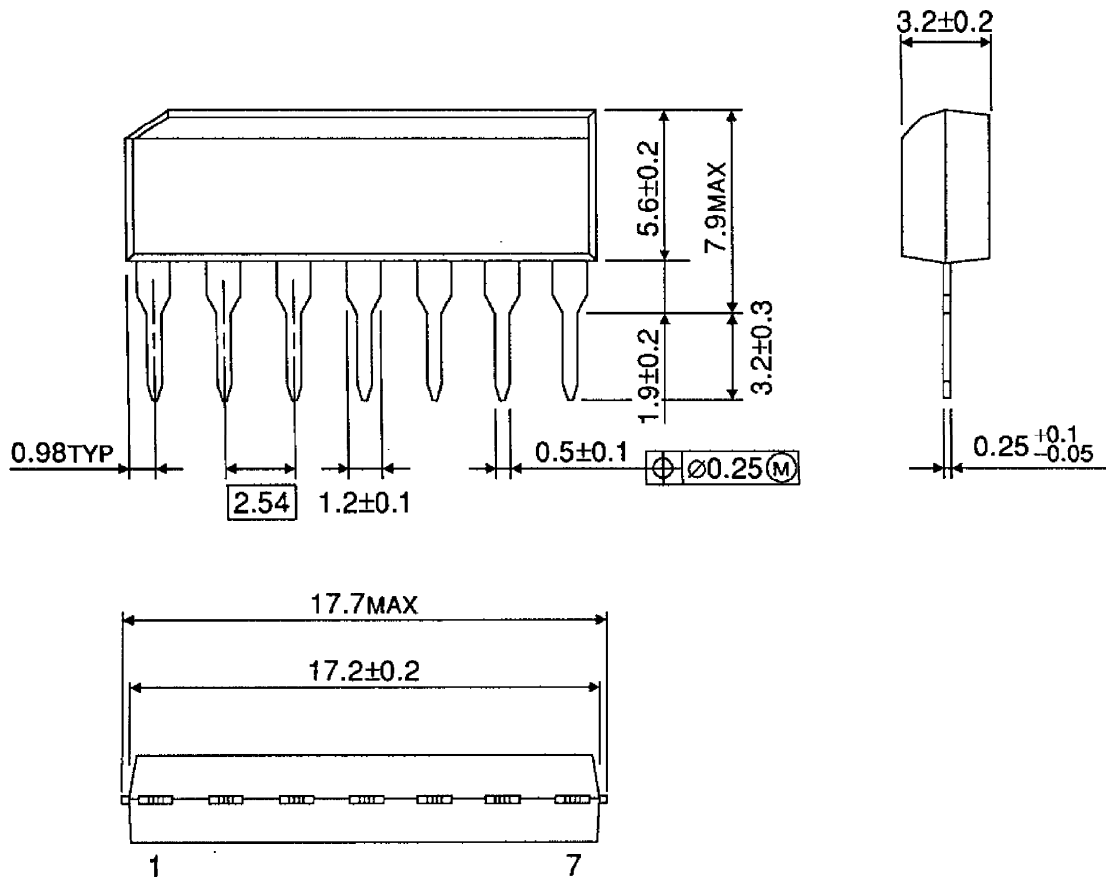






**OUTLINE DRAWING**  
SIP7-P-2.54A

Unit : mm



Weight : 0.7g (Typ.)