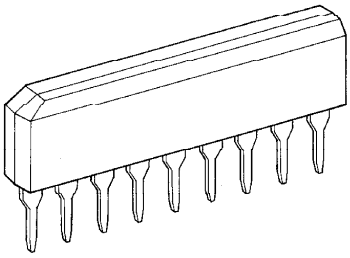
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA8125S

## DUAL PRE-AMPLIFIER

The TA8125S is dual output preamplifier designed for car or home use.



SIP9-P-2.54A

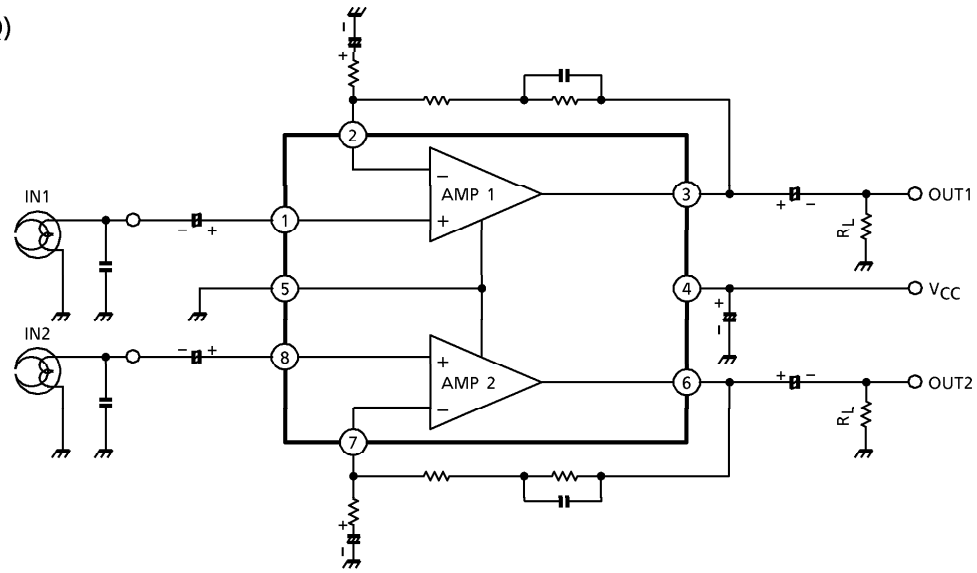
Weight : 0.92g (Typ.)

### FEATURES

- High Open Loop Voltage Gain
  : $G_{VO}$ = 100dB (Typ.) at f = 1kHz
- Excellent Channel Separation and High Ripple Rejection
  : $CH_{sep}$ = 65dB (Typ.)
  (f = 10kHz, $R_g$ = 2.2kΩ, $V_{OUT}$ = 0.775$V_{rms}$ (0dBm))
  : R.R. = 50dB (Typ.)
  ($f_{ripple}$ = 100Hz, $R_g$ = 2.2kΩ, $V_{OUT}$ = 0.775$V_{rms}$ (0dBm))
- Low Noise
  : $V_{NI}$ = 1.0$\mu V_{rms}$ (Typ.) at $R_g$ = 2.2kΩ, BW = 20Hz~20kHz, NAB EQ
- Wide Operating Supply Voltage Range : $V_{CC\ (opr.)}$ = 6~16V (Ta = 25°C)

### BLOCK DIAGRAM

(NAB EQ)

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**MAXIMUM RATINGS** (Ta = 25°C)

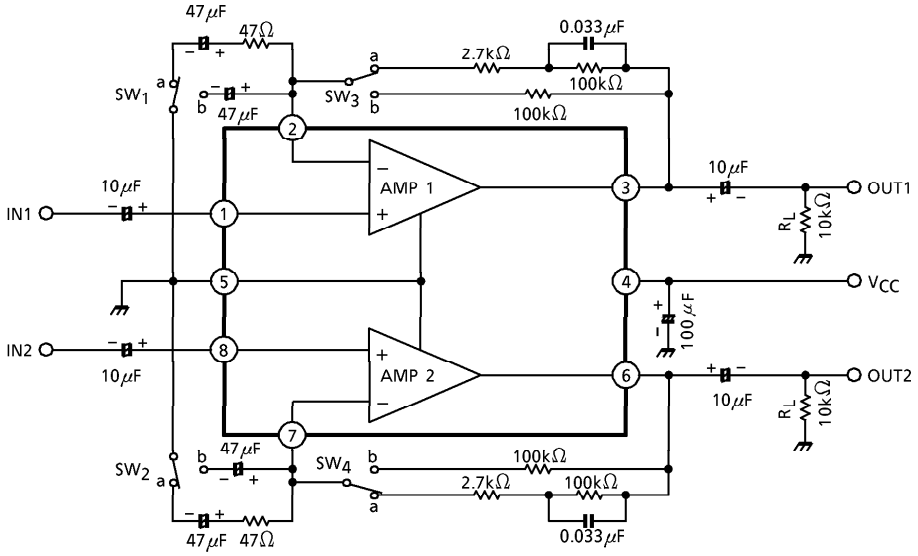
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 16 | V |
| Power Dissipation (Note) | $P_D$ | 700 | mW |
| Operating Temperature | $T_{opr}$ | − 30~80 | °C |
| Storage Temperature | $T_{stg}$ | − 55~150 | °C |

(Note) Derated above Ta = 25°C in the proportion of 5.6mW / °C.

**ELECTRICAL CHARACTERISTICS**
(Unless otherwise specified, $V_{CC}$ = 6V, f = 1kHz, $R_g$ = 600Ω, $R_L$ = 10kΩ, Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CIR-CUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|
| Quiescent Current | $I_{CCQ}$ | — | $V_{IN}$ = 0 | — | 3 | 6 | mA |
| Voltage Gain | $G_{VO}$ | — | $V_{OUT}$ = 7.75μ$V_{rms}$ ( − 100dBm) | 75 | 100 | — | dB |
| | $G_V$ | — | $V_{OUT}$ = 0.775$V_{rms}$ (0dBm) | 38.5 | 41.5 | 44.5 | |
| Maximum Output Voltage | $V_{OM}$ | — | THD = 1% | 1.0 | 1.8 | — | V |
| Equivalent Input Noise Voltage | $V_{NI}$ | — | $R_g$ = 2.2kΩ, B.W = 20Hz~20kHz | — | 1.0 | 1.7 | μ$V_{rms}$ |
| Input Resistance | $R_{IN}$ | — | — | 50 | 150 | — | kΩ |
| Total Harmonic Distortion | THD | — | $V_{OUT}$ = 0.775$V_{rms}$ (0dBm) | — | 0.04 | 0.25 | % |
| Channel Separation | $CH_{sep}$ | — | f = 10kHz, $V_{OUT}$ = 0.775$V_{rms}$ (0dBm) | — | 65 | — | dB |
| Ripple Rejection Ratio | R.R. | — | f = 100Hz, $R_g$ = 2.2kΩ | — | 50 | — | dB |

**TEST CIRCUIT** (⑨pin open or GND)




PIN⑨ : NC
(*) $G_{VO}$ : $SW_1$~$SW_4$→b SIDE