

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8162SN

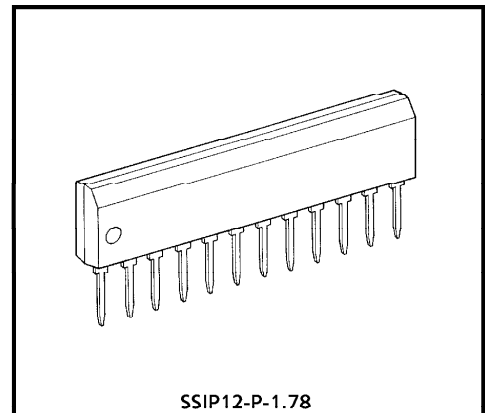
DUAL PREAMPLIFIER

The TA8162SN is dual preamplifier designed for car stereo tape deck.

This IC contains dual preamplifier and metal / normal tape equalizer control switches.

FEATURES

- High Open Loop Voltage Gain
: $G_{VO} = 98\text{dB}$ (Typ.) ($V_{CC} = 9\text{V}$, $f = 1\text{kHz}$)
- Low Distortion
: $\text{THD} = 0.035\%$ (Typ.) ($G_V = 40\text{dB}$, $f = 1\text{kHz}$, $V_{OUT} = 0.5V_{\text{rms}}$)
- Low Noise (Equivalent Input Noise Voltage)
: $V_{NI} = 0.9\mu\text{V}_{\text{rms}}$ (Typ.)
($R_g = 620\Omega$, $\text{BW} = 20\text{Hz} \sim 20\text{kHz}$, NAB EQ)
- No Input Coupling Capacitor
- Small Package : Shrink Pitch (1.78mm) Single In-line 12pin
- Operating Supply Voltage Range : $V_{CC}(\text{opr.}) = 6 \sim 16\text{V}$



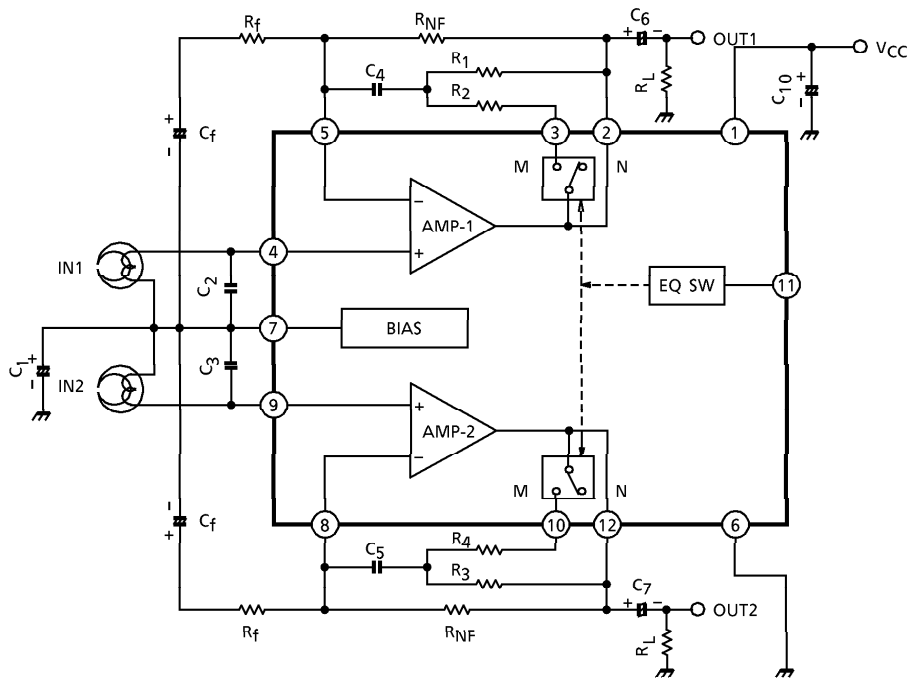
SSIP12-P-1.78

Weight : 0.65g (Typ.)

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BLOCK DIAGRAM



APPLICATION INFORMATION

(1) Equalizer control switch

Pin① is coupled to the base of Q₁ (PNP-Tr) as shown in Fig.1.

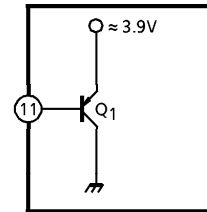
The emitter potential of Q₁ is 3.9Vdc.

Threshold voltage (pin①)

| | |
|--------|---------------------|
| Metal | 3.2~V _{CC} |
| Normal | 0~2.4V |

(2) C₂~3

Capacitor C₂/C₃ may be required for preventing a instability caused by the pattern layout or interference of external high frequency signal.



(Fig.1)

MAXIMUM RATINGS (T_a = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------|-----------------------|----------|------|
| Supply Voltage | V _{CC} | 16 | V |
| Power Dissipation | P _D (Note) | 750 | mW |
| Operating Temperature | T _{opr} | - 30~75 | °C |
| Storage Temperature | T _{stg} | - 55~150 | °C |

(Note) Derated above T_a = 25°C in the proportion of 6mW/°C.

TYP. DC VOLTAGE OF EACH TERMINAL

($V_{CC} = 9V$, $T_a = 25^\circ C$, Dual mode test circuit)

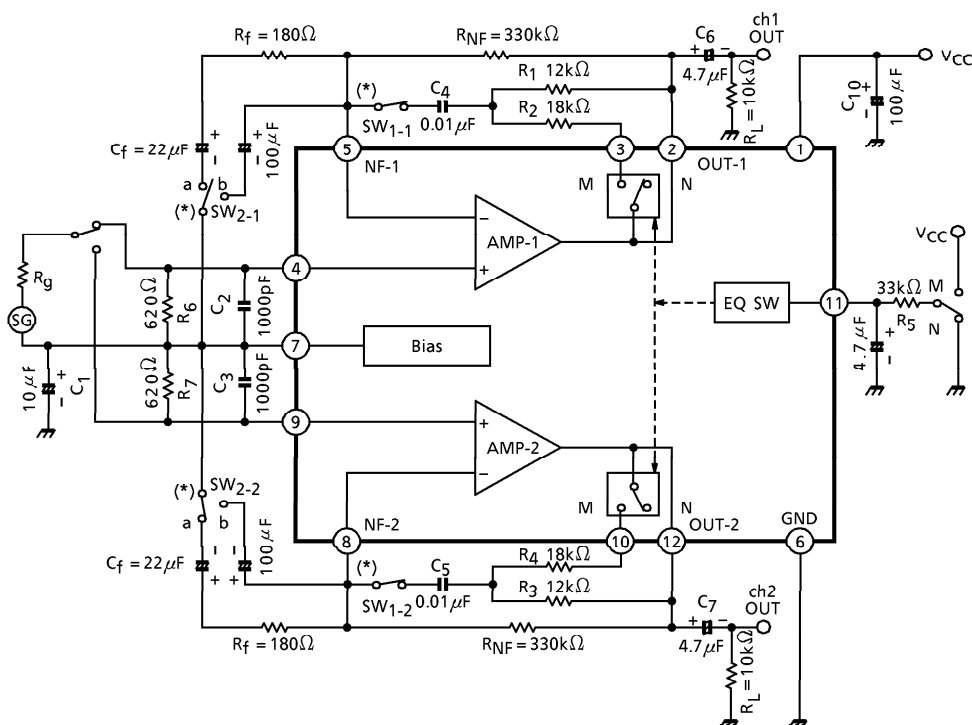
| TERMINAL No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DC-Voltage (V) | V_{CC} | 3.0 | 3.0 | 3.0 | 3.0 | GND | 3.0 | 3.0 | 3.0 | 3.0 | 3.5 | 3.0 |

ELECTRICAL CHARACTERISTICS

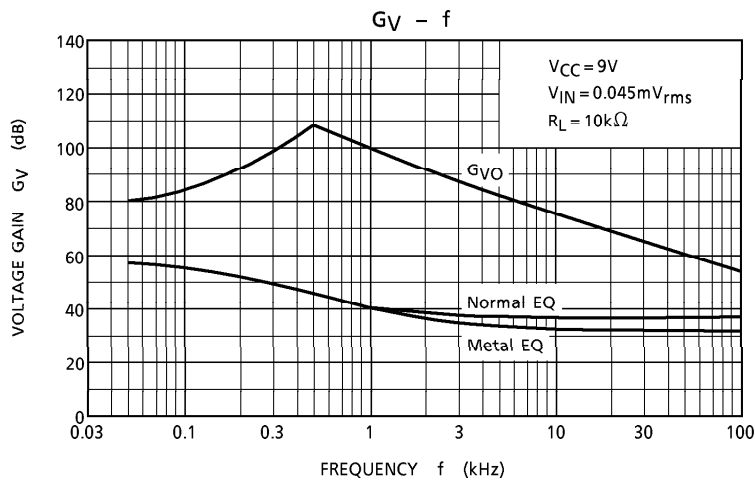
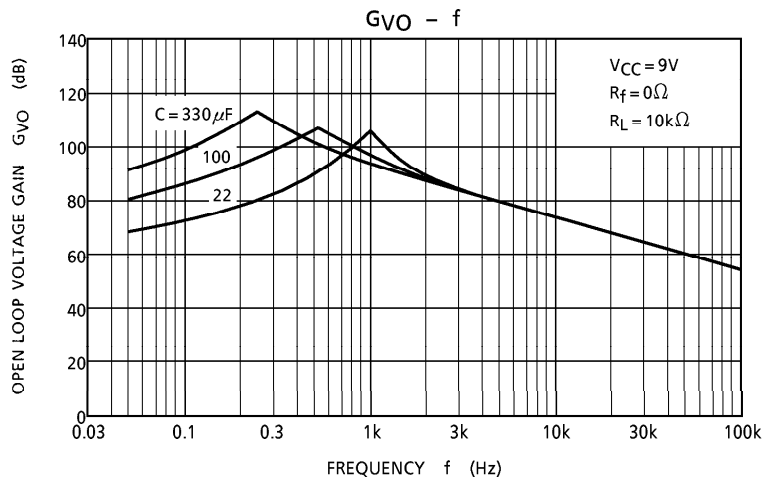
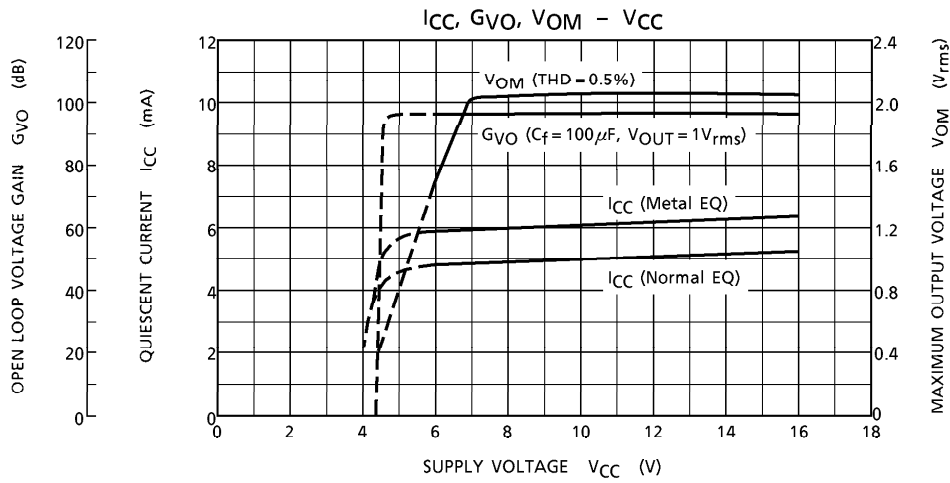
(Unless otherwise specified, $V_{CC} = 9V$, $f = 1kHz$, $R_L = 10k\Omega$, $R_g = 600\Omega$, $T_a = 25^\circ C$, Normal EQ)

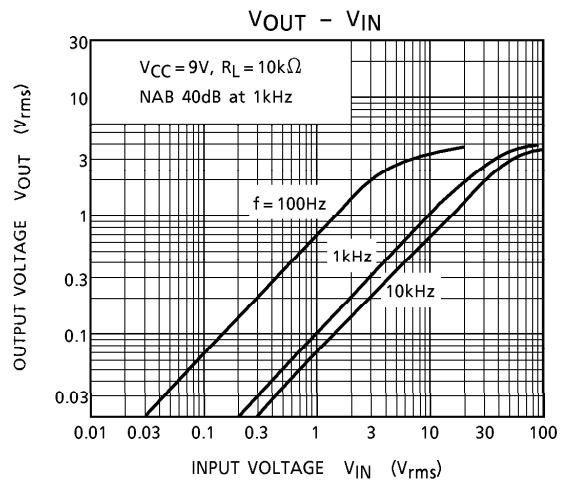
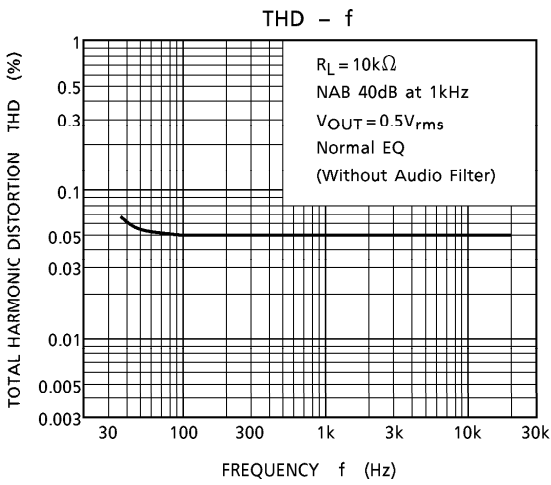
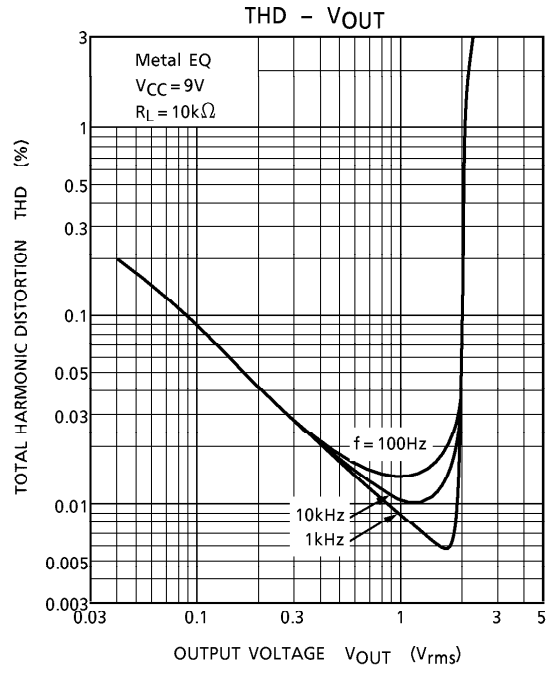
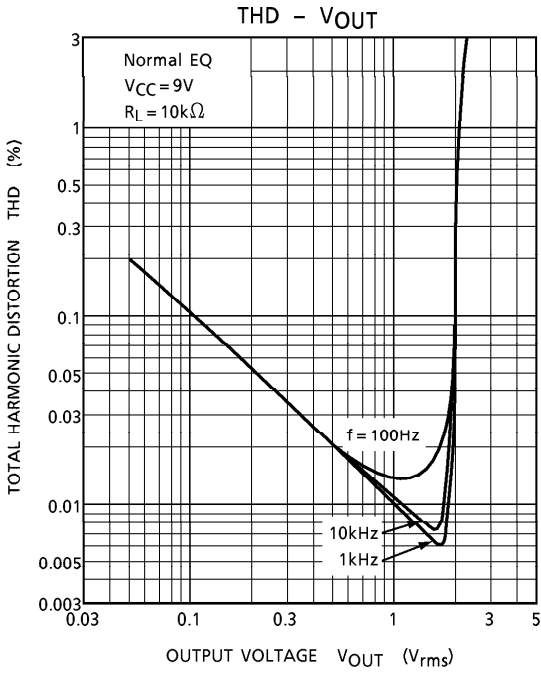
| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------|--------------|--------------|--|------|-------|------|---------------|
| Quiescent Current | $I_{CCQ(1)}$ | — | $V_{IN} = 0$, Normal EQ | — | 5.0 | — | mA |
| | $I_{CCQ(2)}$ | — | $V_{IN} = 0$, Metal EQ | — | 6.0 | 9.0 | |
| Open Loop Voltage Gain | G_{VO} | — | $C_f = 100\mu F$, $R_f = 0$ | — | 98 | — | dB |
| Maximum Output Voltage | V_{OM} | — | THD = 0.5% | 1.5 | 2.0 | — | V_{rms} |
| Total Harmonic Distortion | THD | — | $V_{OUT} = 0.5V_{rms}$ | — | 0.035 | 0.12 | % |
| Equivalent Input Noise Voltage | V_{NI} | — | $R_g = 620\Omega$, NAB BW = 20Hz~20kHz | — | 0.9 | 1.7 | μV_{rms} |
| Input Resistance | R_{IN} | — | — | — | 500 | — | $k\Omega$ |
| Ripple Rejection Ratio | R.R. | — | $f_{ripple} = 100Hz$, $V_{IN} = 1V_{rms}$ | — | 55 | — | dB |

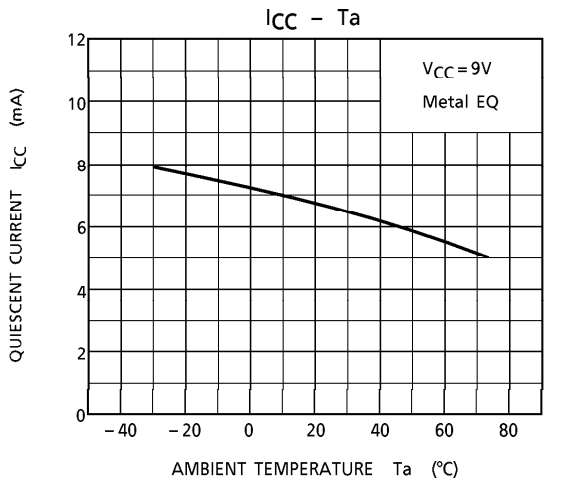
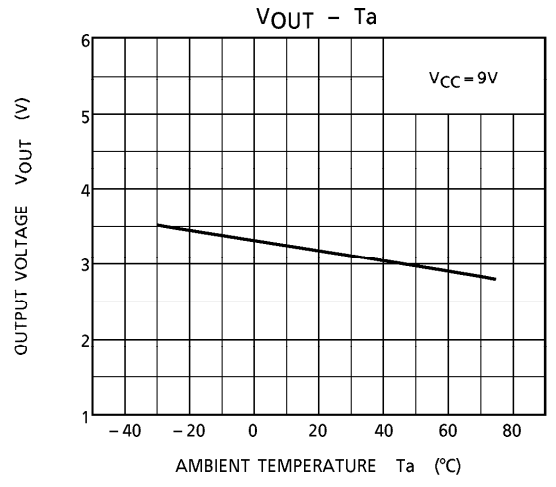
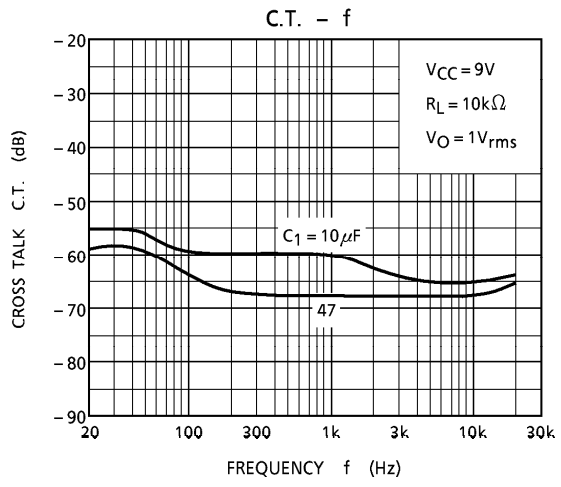
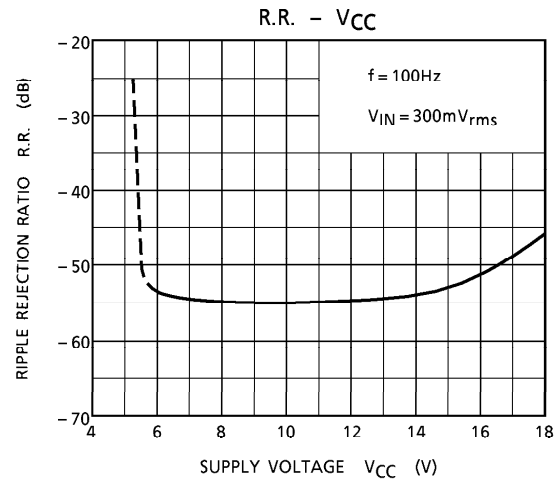
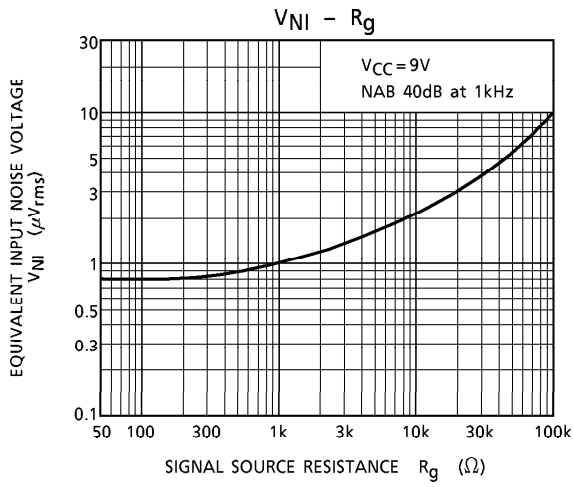
TEST CIRCUIT



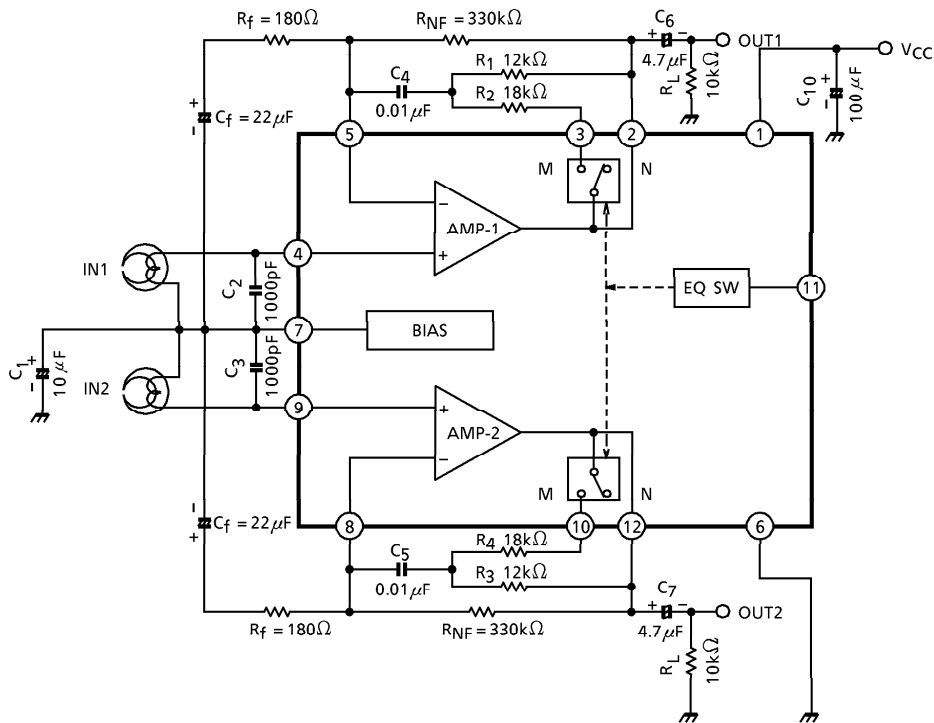
(*) G_{VO} Test : SW1-1, 2 = OFF, SW2-1, 2 = b





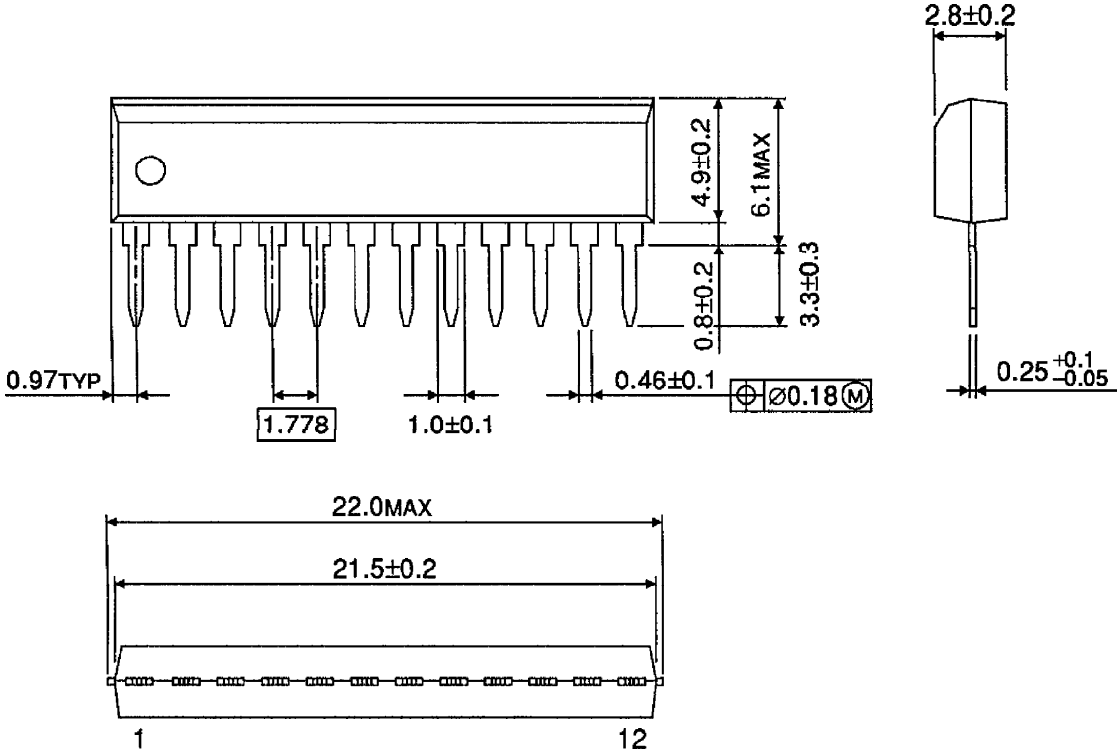


APPLICATION CIRCUIT



OUTLINE DRAWING
SSIP12-P-1.78

Unit : mm



Weight : 0.65g (Typ.)

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