

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8162SN

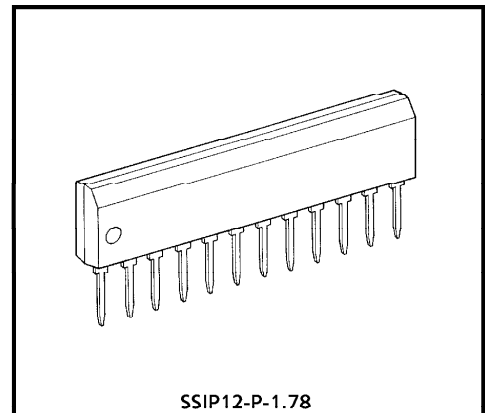
DUAL PREAMPLIFIER

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 : $V_{CC}(\text{opr.}) = 6 \sim 16\text{V}$



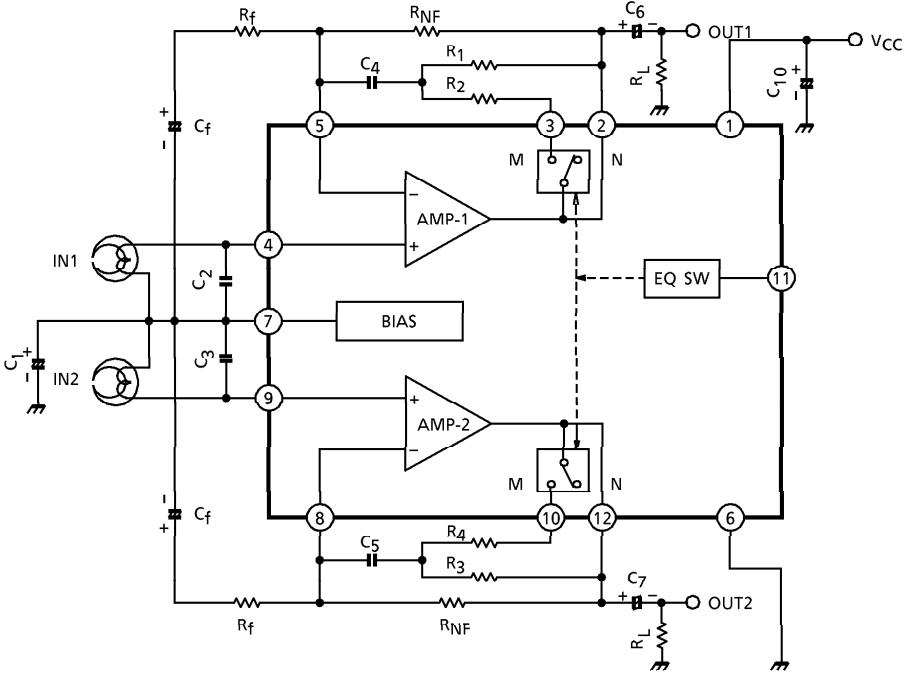
SSIP12-P-1.78

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.

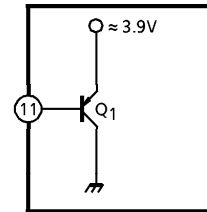
The emitter potential of Q₁ is 3.9Vdc.

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)

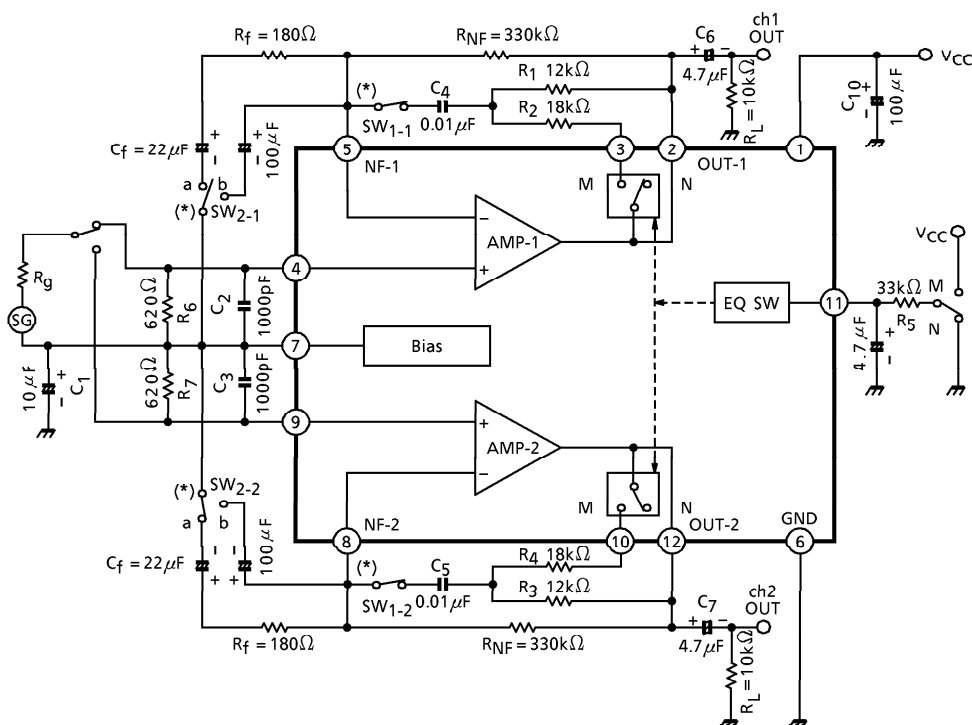
TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12
DC-Voltage (V)	V_{CC}	3.0	3.0	3.0	3.0	GND	3.0	3.0	3.0	3.0	3.5	3.0

ELECTRICAL CHARACTERISTICS

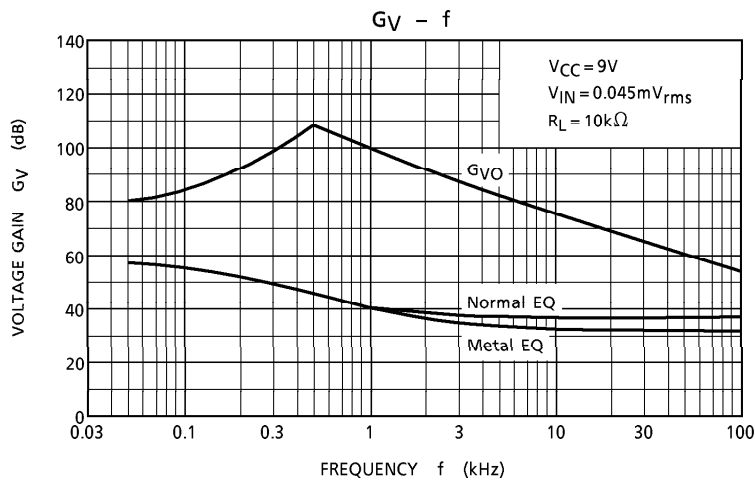
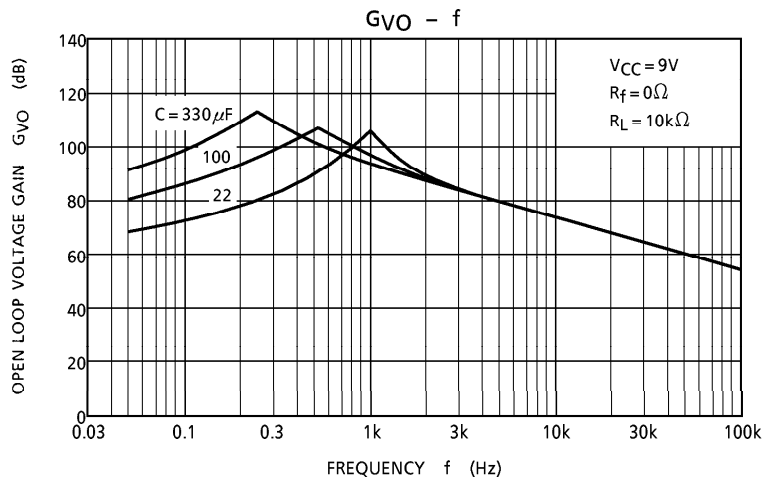
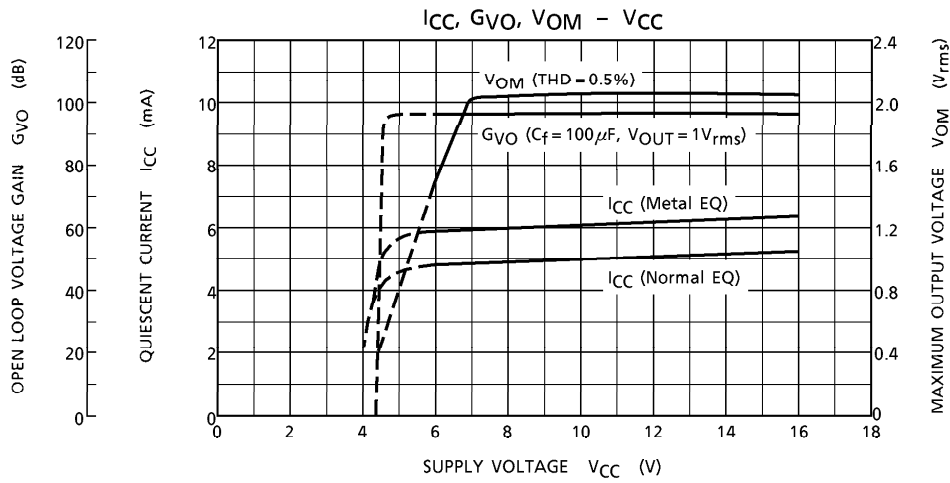
(Unless otherwise specified, $V_{CC} = 9V$, $f = 1kHz$, $R_L = 10k\Omega$, $R_g = 600\Omega$, $T_a = 25^\circ C$, Normal EQ)

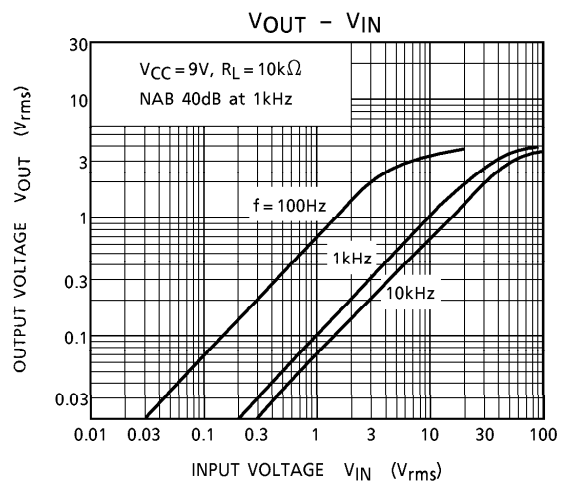
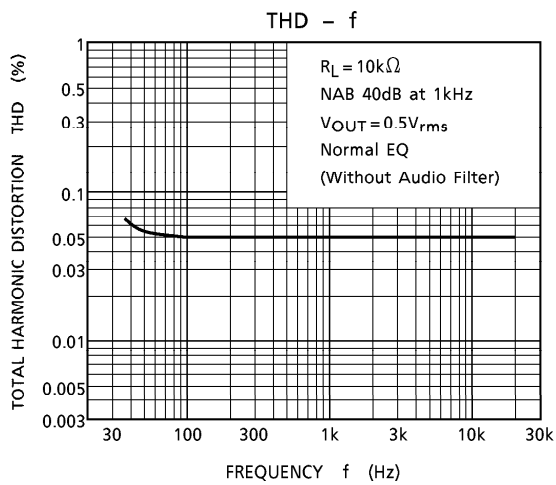
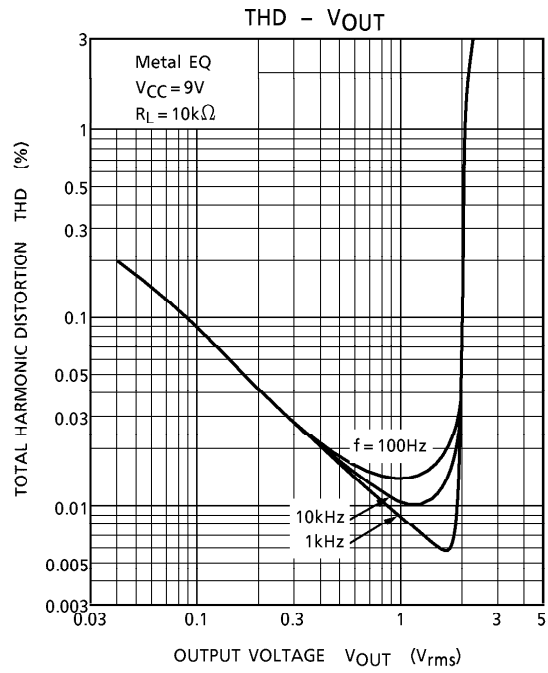
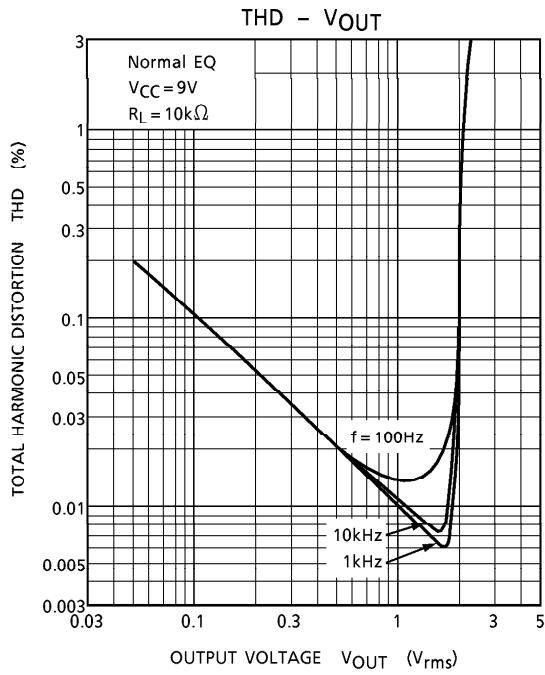
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	$I_{CCQ(1)}$	—	$V_{IN} = 0$, Normal EQ	—	5.0	—	mA
	$I_{CCQ(2)}$	—	$V_{IN} = 0$, Metal EQ	—	6.0	9.0	
Open Loop Voltage Gain	G_{VO}	—	$C_f = 100\mu F$, $R_f = 0$	—	98	—	dB
Maximum Output Voltage	V_{OM}	—	THD = 0.5%	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

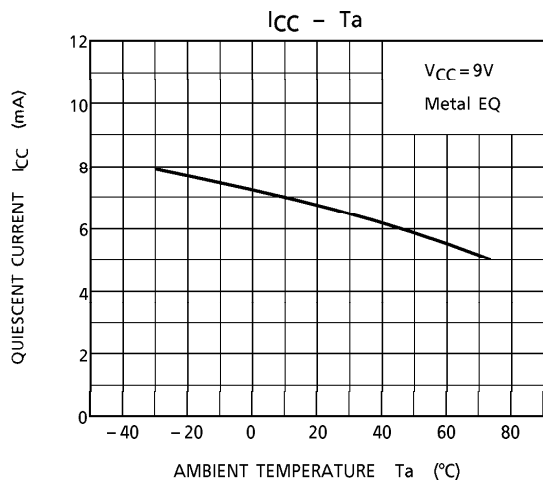
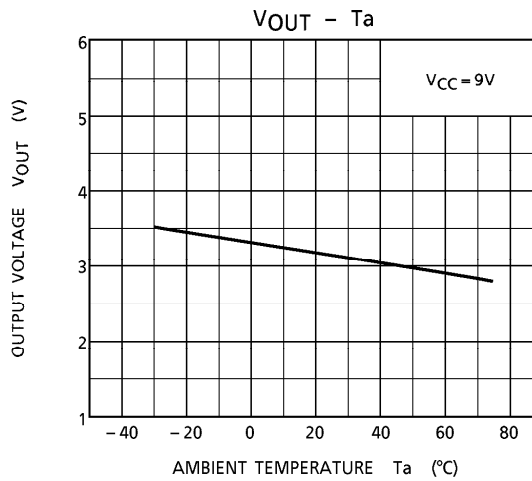
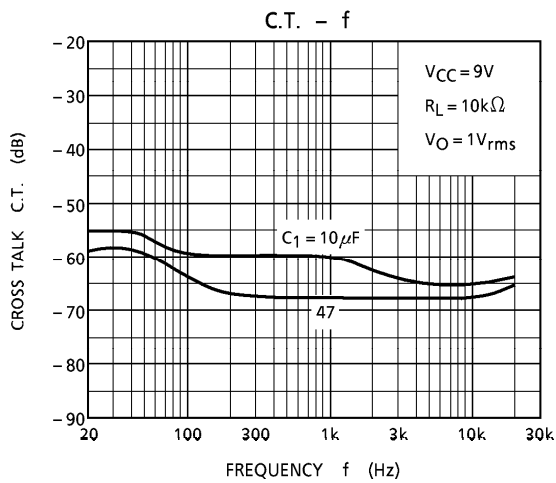
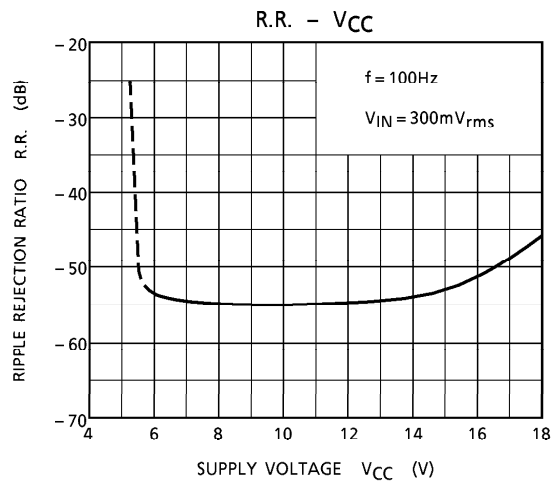
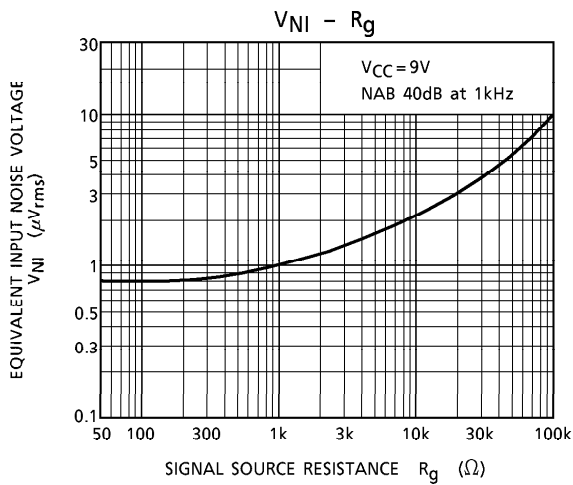
TEST CIRCUIT



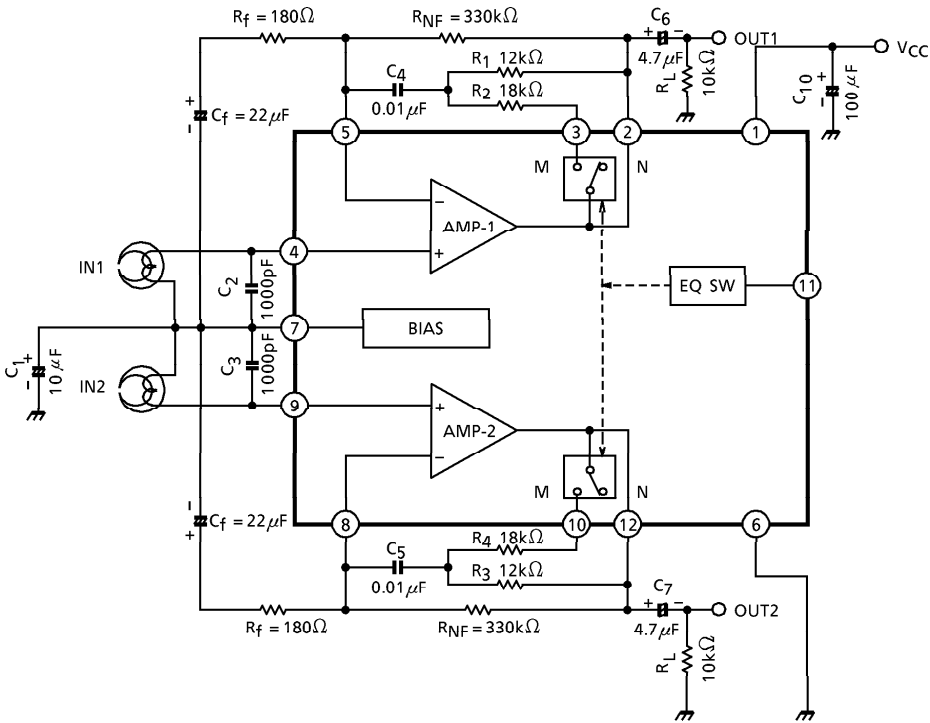
(*) G_{VO} Test : $SW_{1-1}, 2 = OFF$, $SW_{2-1}, 2 = b$





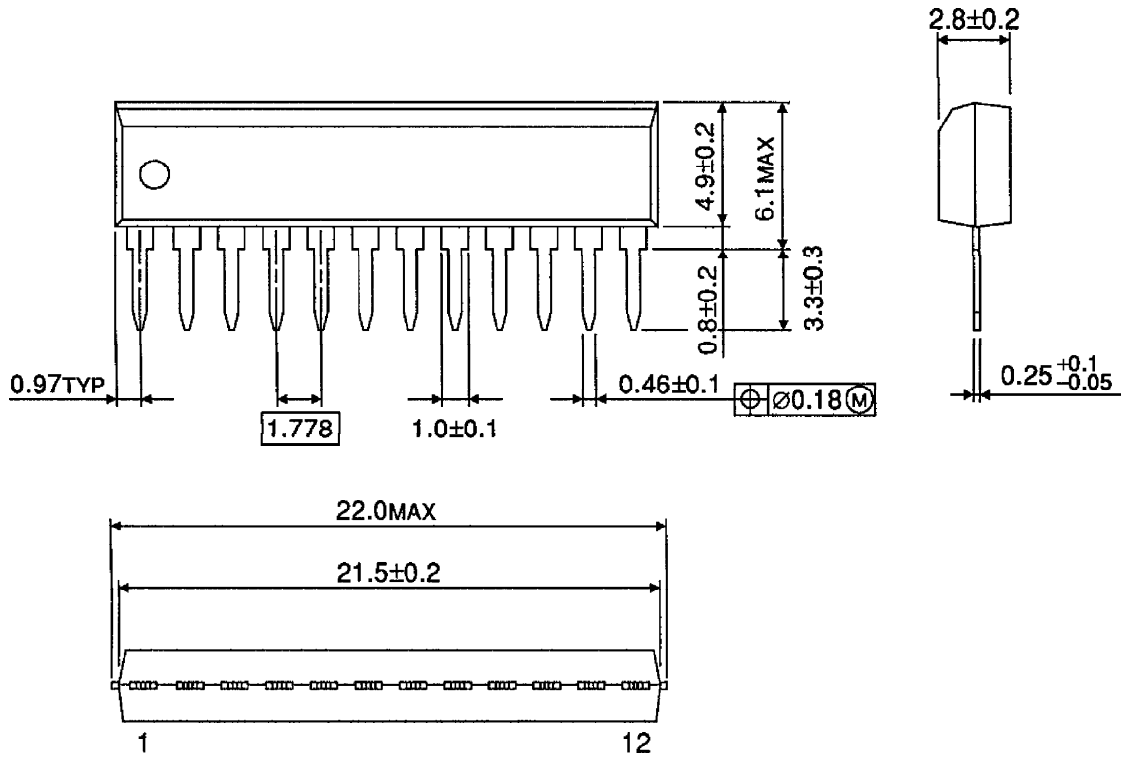


APPLICATION CIRCUIT



OUTLINE DRAWING
SSIP12-P-1.78

Unit : mm



Weight : 0.65g (Typ.)