

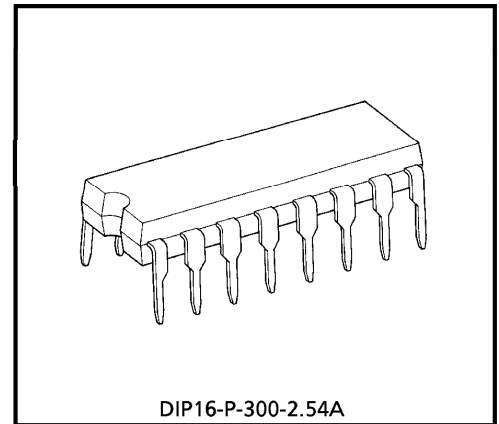
TA8142AP

REC / PLAY PRE AMP SYSTEM FOR DOUBLE CASSETTE

The TA8142AP is a Quad Pre Amplifier Designed for Use in Record / Play back Pre amplifier of Tape Recorder. It is Suitable for a Double Radio Cassette Recorder.

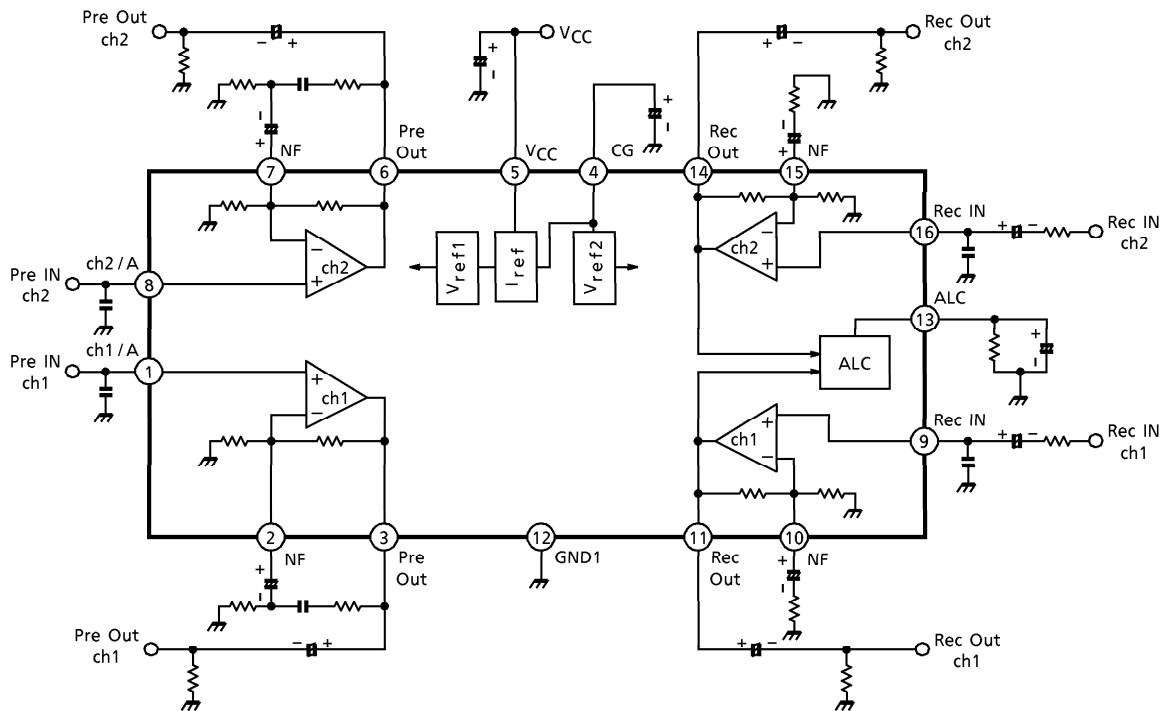
FEATURES

- Built in play back Amplifier
- Built in Recording Amplifier
- ALC Detector Circuit
- Operating Supply Voltage Range : $V_{CC(opr)} = 4 \sim 13.5V$ ($T_a = 25^\circ C$)



DIP16-P-300-2.54A
Weight : 1.00g (Typ.)

BLOCK DIAGRAM



MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------|-----------------------|---------|------|
| Supply Voltage | V _{CC} | 14.5 | V |
| Power Dissipation | P _D (Note) | 750 | mW |
| Operating Temperature | T _{opr} | -20~75 | °C |
| Storage Temperature | T _{stg} | -55~150 | °C |

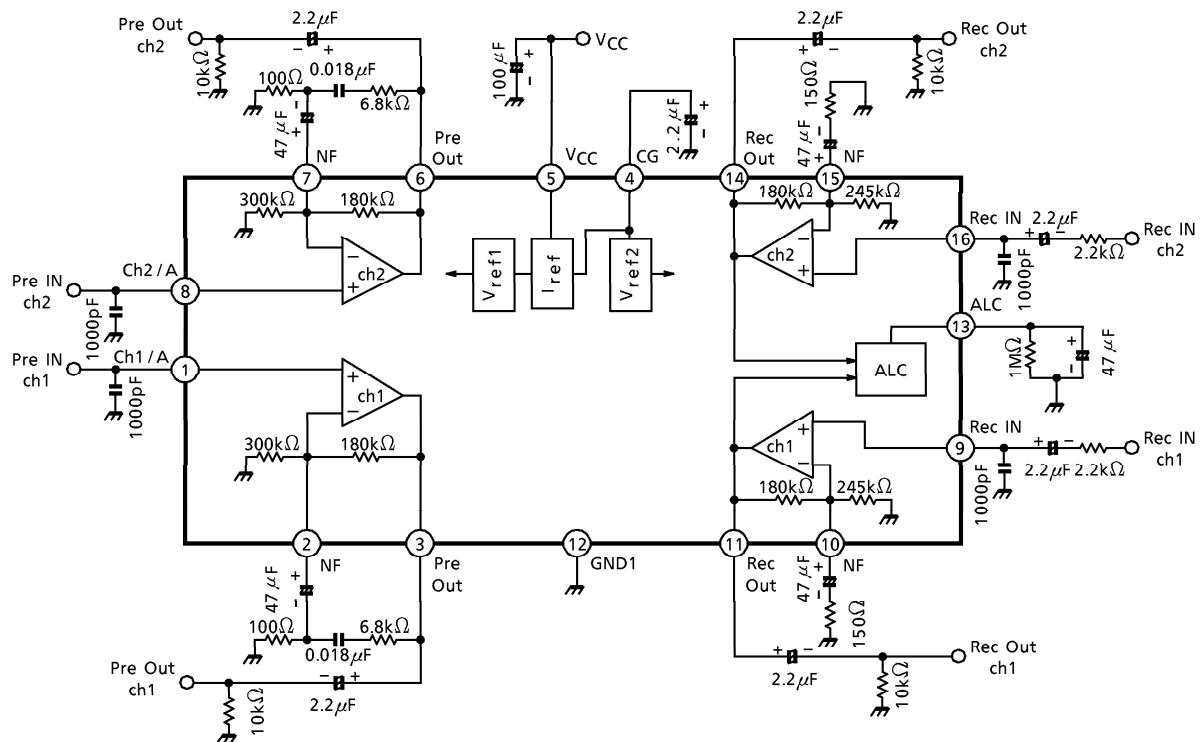
(Note) Derated above Ta = 25°C in the proportion of 6mW/°C.

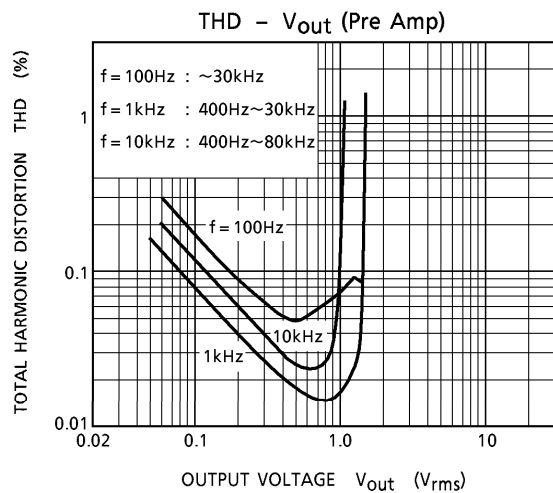
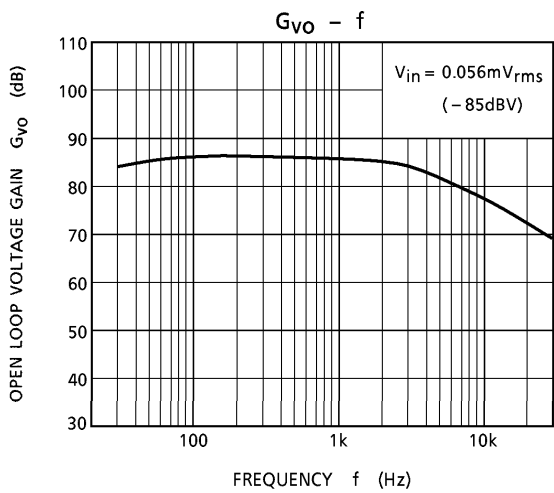
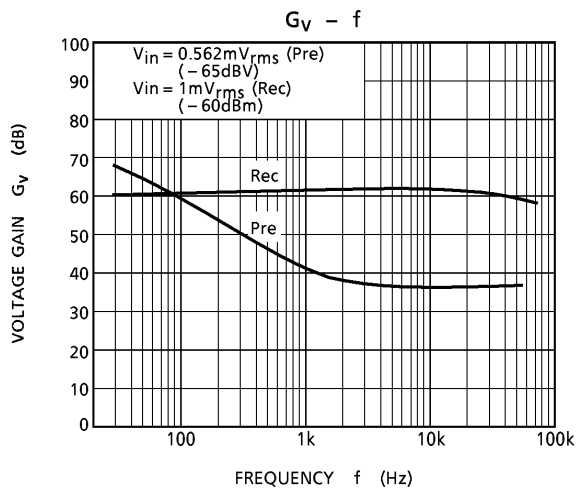
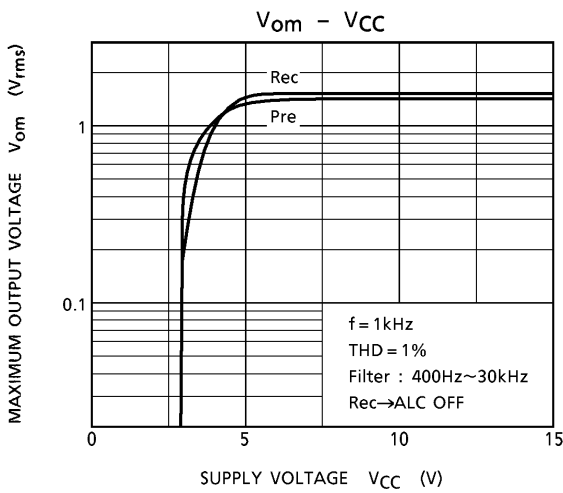
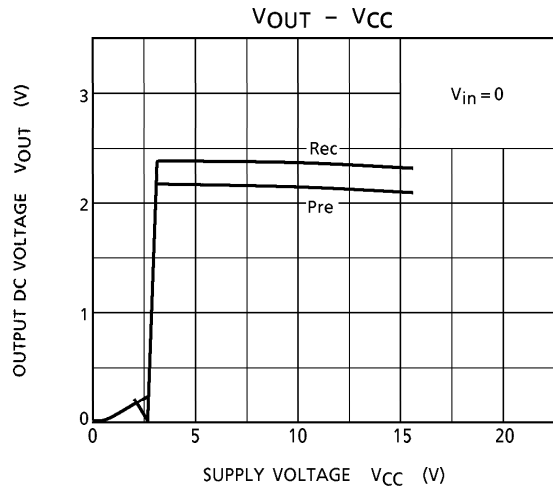
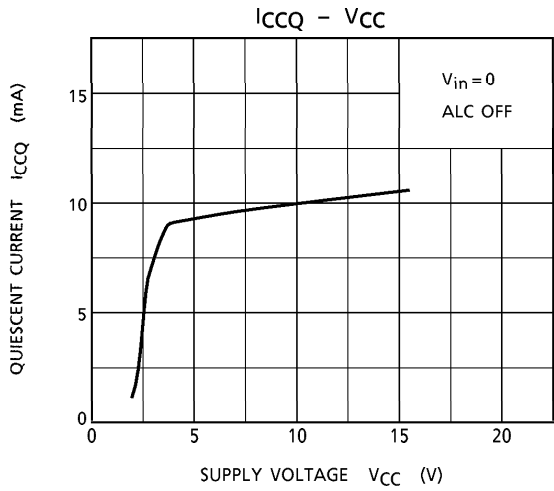
ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V_{CC} = 6V, f = 1kHz, B.P.F = 400Hz~30kHz)

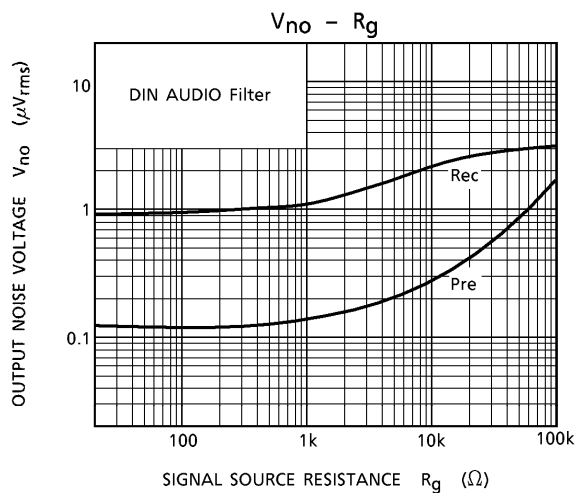
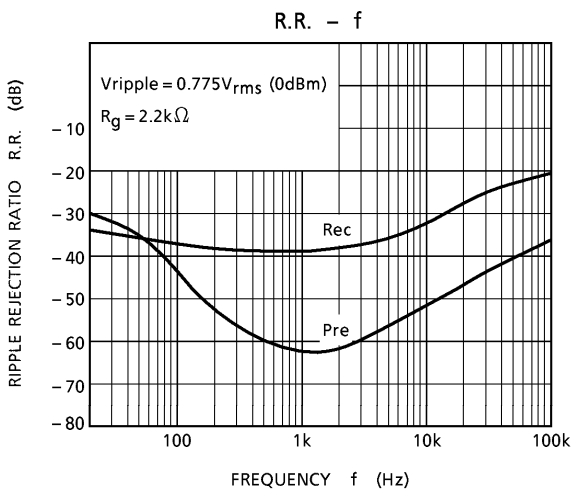
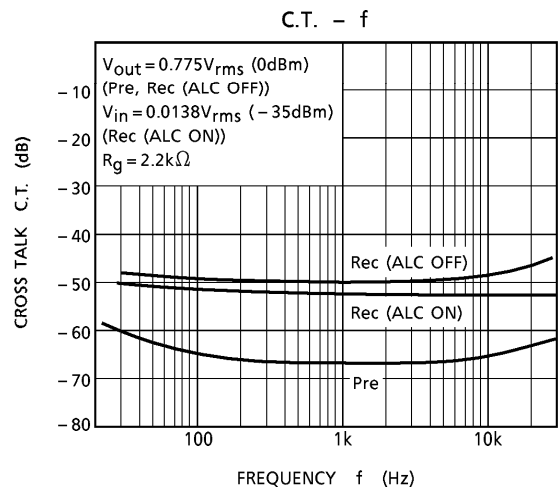
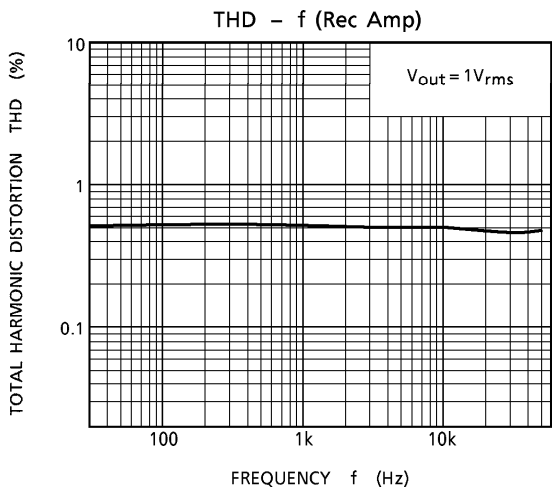
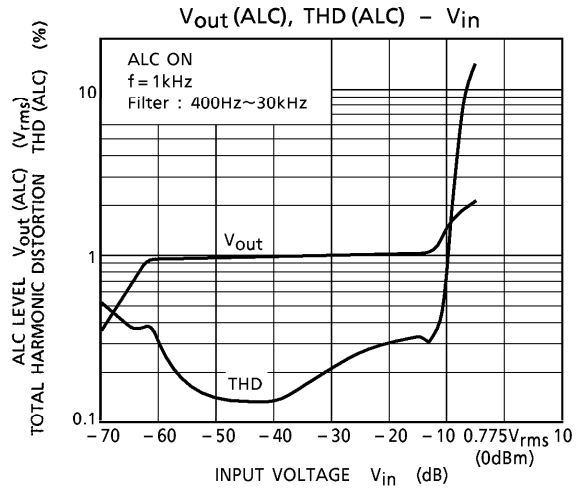
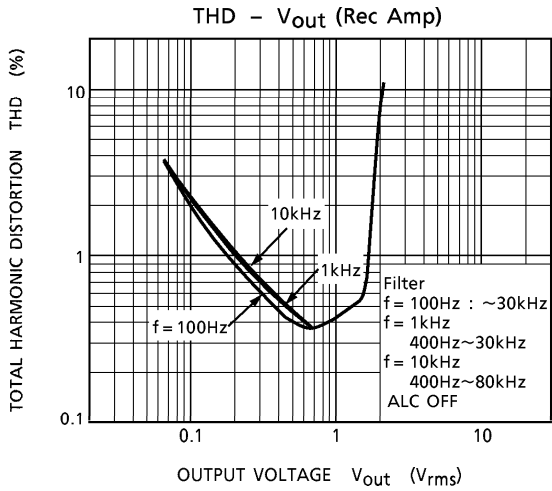
| CHARACTERISTIC | SYMBOL | TEST CIR-CUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------|---------------------------|-----------------------|--|--------|-------|------|-------------------|
| Quiescent Current | I _{ccq} | — | — | — | 9.5 | 15 | mA |
| Play Back Amp. | Output Noise Voltage | V _{no} (Pre) | Normal Mode, R _g = 2.2kΩ, NAB EQ BW = 20Hz~20kHz, G _v = 40dB | — | 150 | 350 | μV _{rms} |
| | Total Harmonic Distortion | THD (Pre) | V _{out} = 0.2V _{rms} , f = 1kHz Normal Mode | — | 0.05 | 0.1 | % |
| | Maximum Output Voltage | V _{om} (Pre) | THD = 1.0%, R _L = 10kΩ, f = 1kHz Normal Mode | 0.9 | 1.4 | — | V _{rms} |
| | Open Loop Voltage Gain | G _{vo} (Pre) | f = 1kHz, R _L = 10kΩ V _{in} = 13.8μV _{rms} (-95dBm) | 80 | 93 | — | dB |
| | Cross Talk | C.T. (ch) (Pre) | V _{out} = 0.775V _{rms} (0dBm), f = 1kHz R _g = 2.2kΩ, Normal Mode | -70 | -77 | — | dB |
| | Ripple Rejection Ratio | R.R. (Pre) | V _{ripple} = 0.775V _{rms} (0dBm) fripple = 100Hz, Normal Mode R _g = 2.2kΩ, LPF = ~30kHz | — | -40 | — | dB |
| | Voltage Gain | G _{vn} (Pre) | V _{in} = 7.75mV _{rms} (-40dBm) f = 1kHz, Normal NAB, R _L = 10kΩ | — | 40 | — | dB |
| Pre Amp → Rec Amp C.T. | C.T. (P/R) | — | f = 1kHz, V _{out} (Pre) = 0.775V _{rms} (0dBm), Normal (Pre) | — | -53.5 | — | dB |
| Rec Amp → Pre Amp C.T. | C.T. (R/P) | — | f = 1kHz, V _{out} (Rec) = 0.775V _{rms} (0dBm), Normal (Pre) | — | -77.5 | — | dB |
| Recording Amp. | Output Noise Level | V _{no} (Rec) | R _g = 2.2kΩ, BW = 20Hz~20kHz ALC OFF, G _v = 60dB | — | 1.3 | 2.7 | mV _{rms} |
| | Total Harmonic Distortion | THD (Rec) | V _{out} = 0.5V _{rms} , f = 1kHz ALC OFF, R _L = 10kΩ | — | 0.35 | 0.9 | % |
| | Maximum Output Level | V _{om} (Rec) | THD = 1%, R _L = 10kΩ, f = 1kHz ALC OFF | 1.2 | 1.5 | — | V _{rms} |
| | Open Loop Voltage Gain | G _{vo} (Rec) | f = 1kHz, R _L = 10kΩ, V _{in} = 3.16μV _{rms} (-110dBV) | 76 | 86 | — | dB |
| | ALC Range | R (ALC) | — | 3dB up | — | 50 | — |

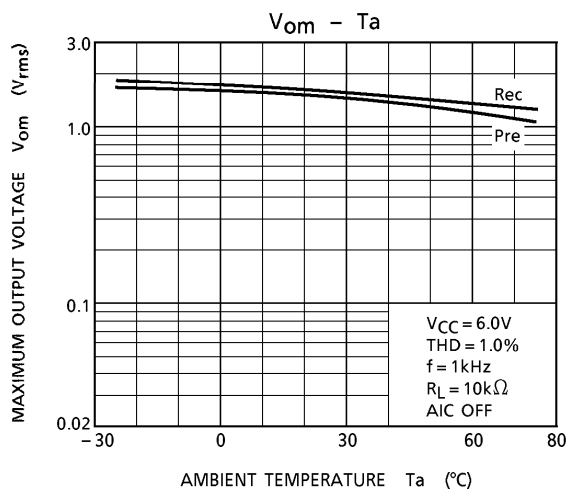
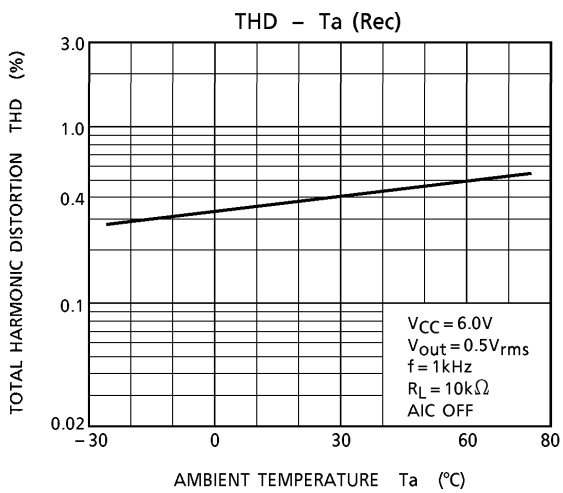
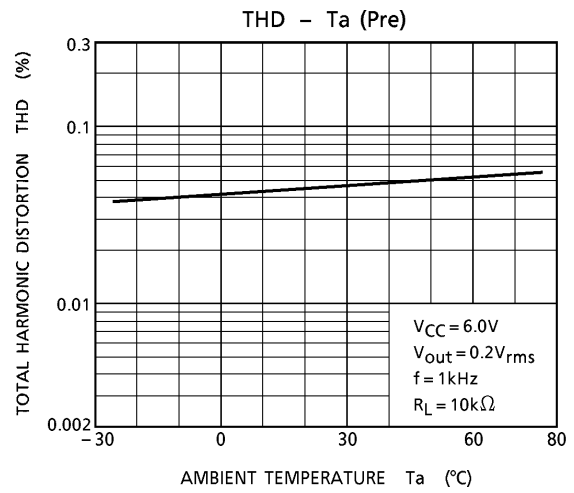
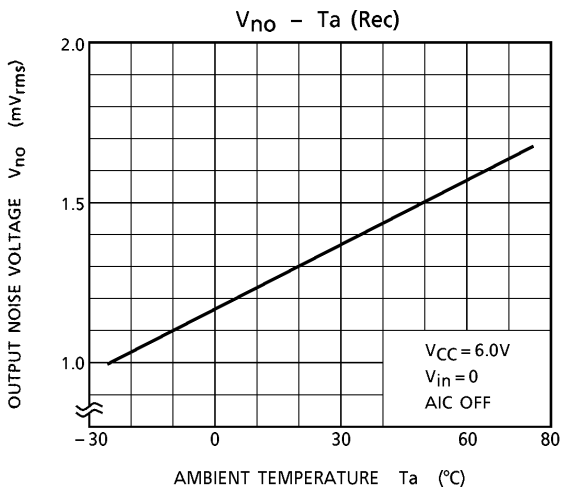
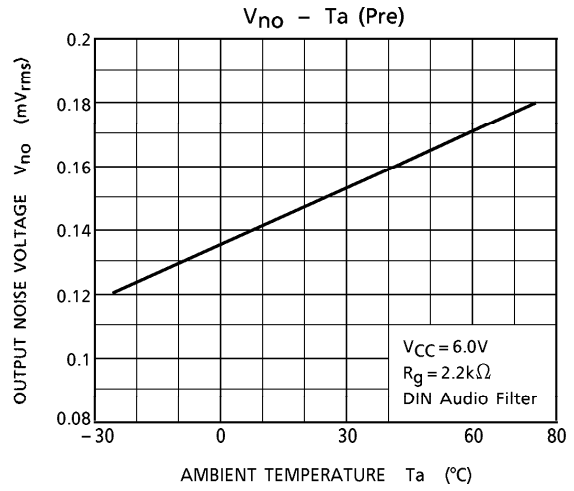
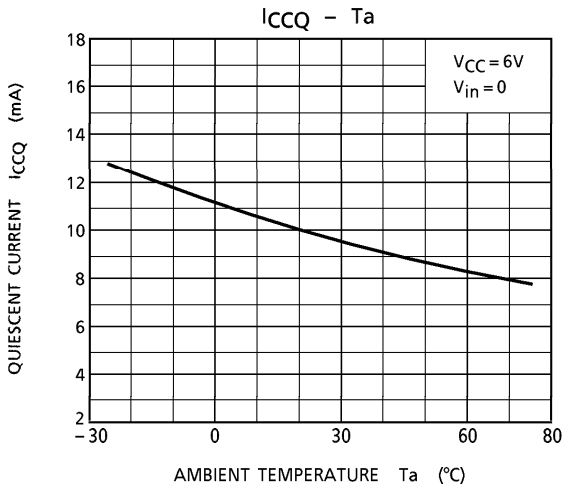
| CHARACTERISTIC | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|----------------|---------------------------------|----------------|----------------|--|------|------|------|-----------|
| Recording Amp. | Total Harmonic Distortion (ALC) | THD (ALC) | — | $V_{in} = 0.0775V_{rms}$ (-20dBm), $f = 1\text{kHz}$, dual input, $R_L = 10\text{k}\Omega$ | — | 0.3 | 0.9 | % |
| | ALC Balance | B (ALC) | — | $V_{in} = 0.0775V_{rms}$ (-20dBm), dual input, $f = 1\text{kHz}$, $R_L = 10\text{k}\Omega$ | -2 | 0 | +2 | dB |
| | ALC Level | V (ALC) | — | $V_{in} = 0.0775V_{rms}$ (-20dBm), $f = 1\text{kHz}$, $R_L = 10\text{k}\Omega$ | 0.75 | 1.0 | 1.2 | V_{rms} |
| | Ripple Rejection Ratio | R.R. (Rec) | — | $V_R = 0.775V_{rms}$ (0dBm), $f = 100\text{Hz}$ $R_g = 2.2\text{k}\Omega$, LPF = $\sim 30\text{kHz}$ | — | 38 | — | dB |
| | Voltage Gain | G_{VN} (Rec) | — | $f = 1\text{kHz}$ (FLAT), $R_L = 10\text{k}\Omega$ $V_{in} = 1\text{mV}_{rms}$ (-60dBV) | — | 61 | — | dB |
| | Cross Talk (ALC OFF) | C.T. (ch) | — | $V_{out} = 0.775V_{rms}$ (0dBm), $f = 1\text{kHz}$ $R_g = 2.2\text{k}\Omega$, ALC OFF | 40 | 54 | — | dB |
| | Cross Talk (ALC ON) | C.T. (ch) | — | $f = 1\text{kHz}$, $R_g = 2.2\text{k}\Omega$, ALC ON $V_{in} = 0.0775V_{rms}$ (-20dBm) | 40 | 52 | — | dB |

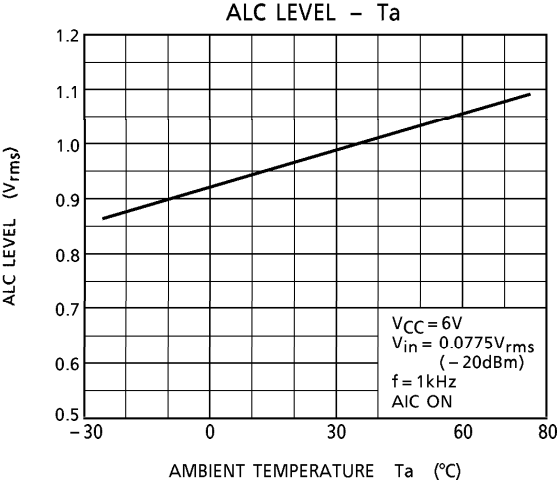
TEST CIRCUIT





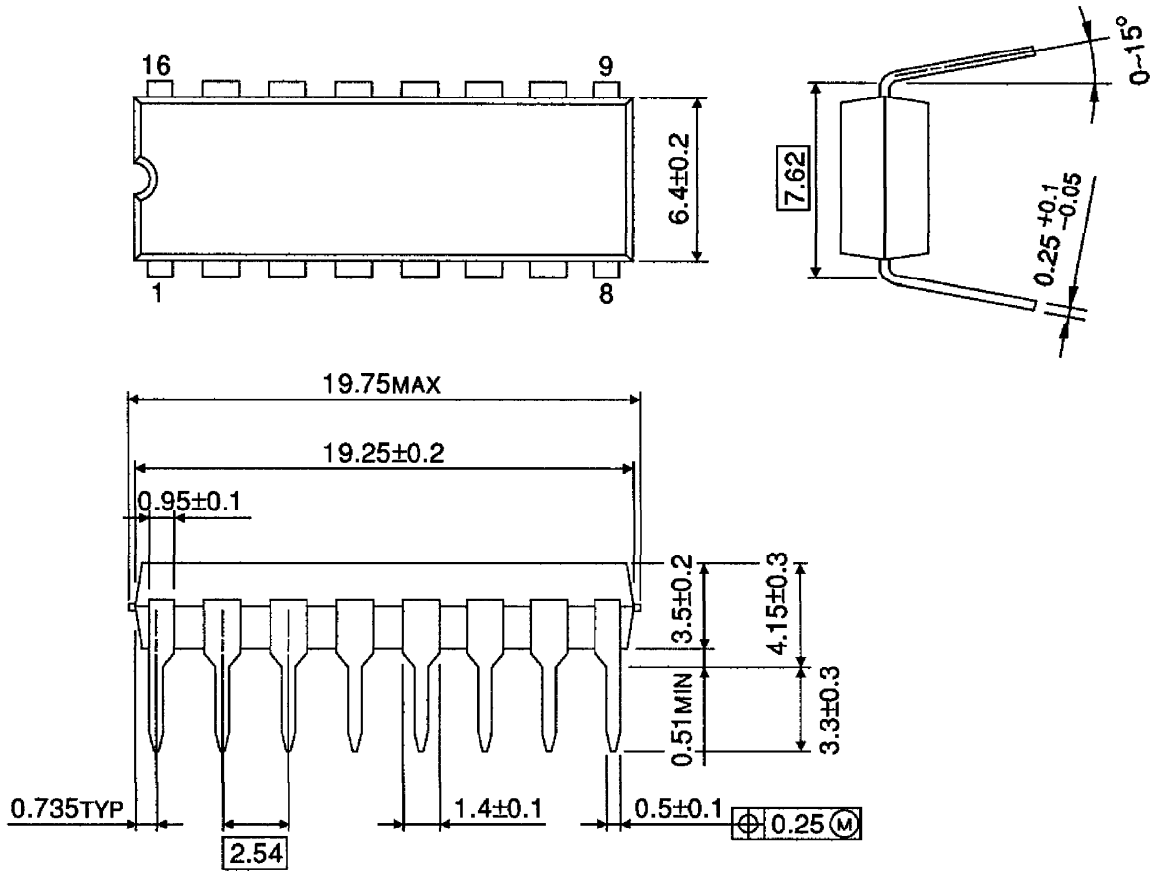






PACKAGE DIMENSIONS
DIP16-P-300-2.54A

Unit : mm



Weight : 1.00g (Typ.)

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000707EBA

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