

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

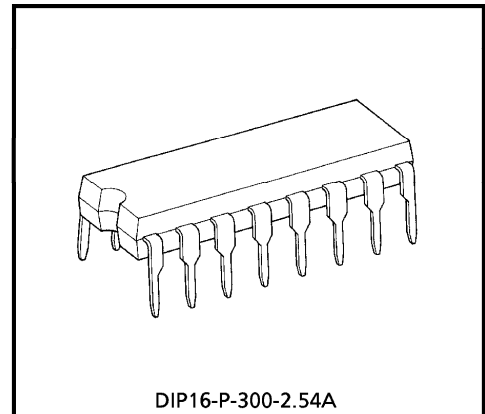
TA8142AP

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.

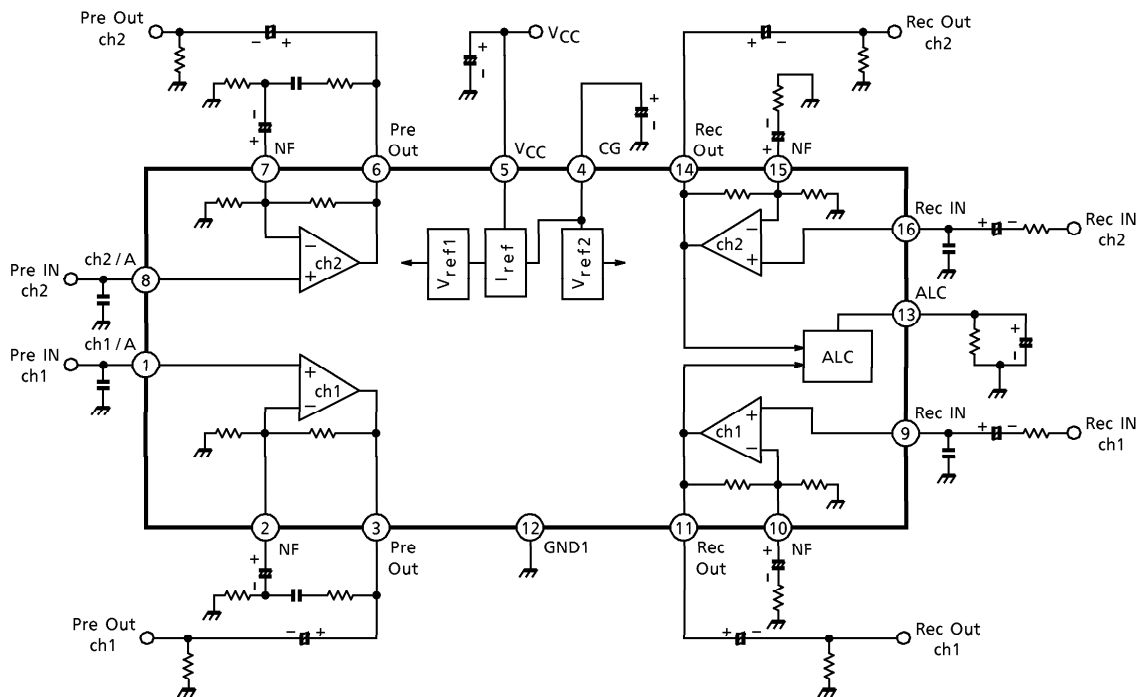
FEATURES

- 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



961001EBA2

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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)

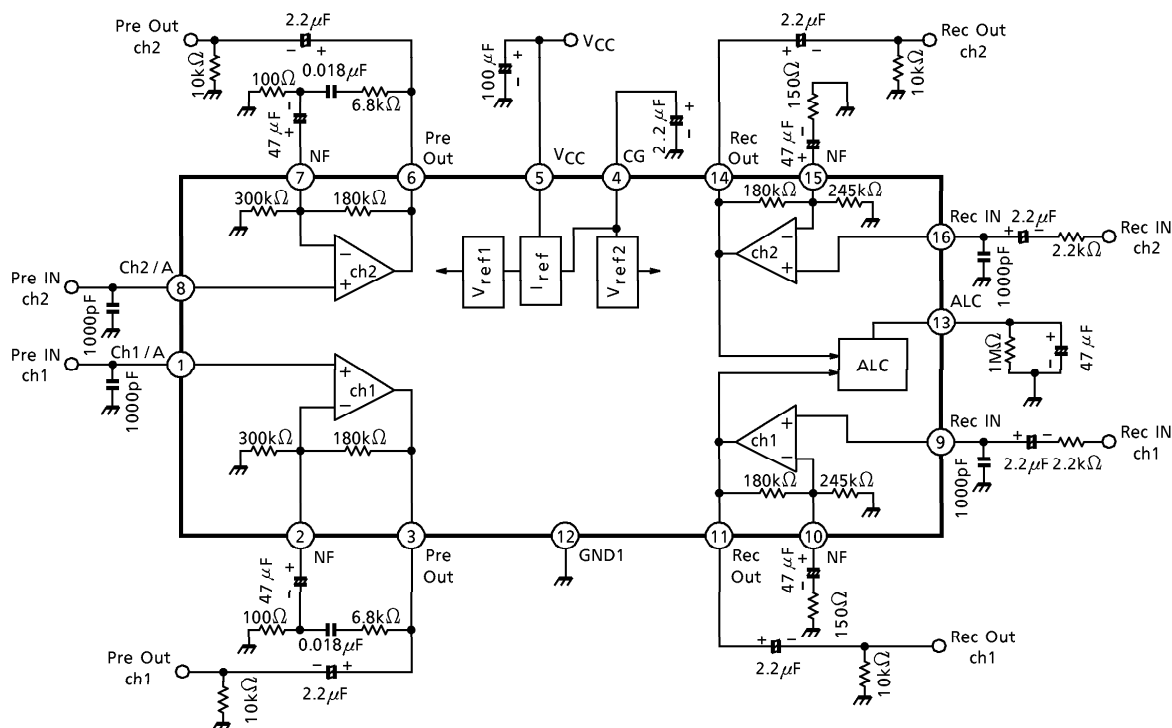
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I _{ccq}	—	—	—	9.5	15	mA
Play Back Amp.	Output Noise Voltage	V _{no} (Pre)	Normal Mode, R _g = 2.2kΩ, NAB EQ BW = 20Hz~20kHz, G _v = 40dB	—	150	350	μV _{rms}
	Total Harmonic Distortion	THD (Pre)	V _{out} = 0.2V _{rms} , 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	—

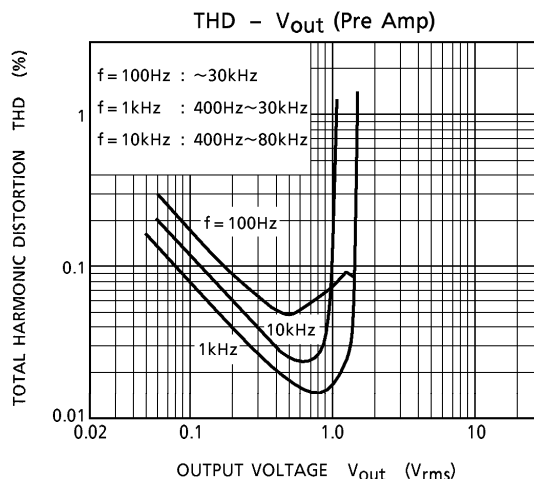
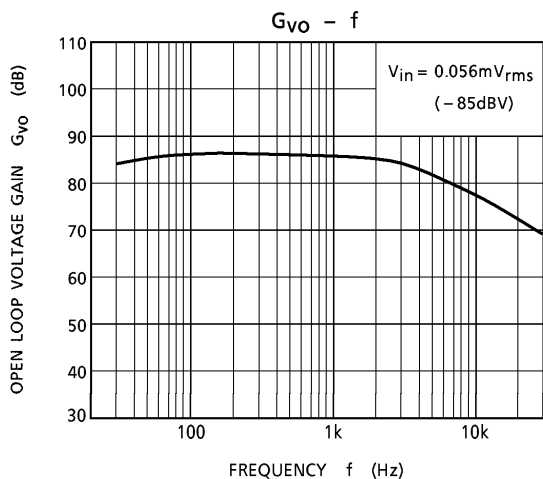
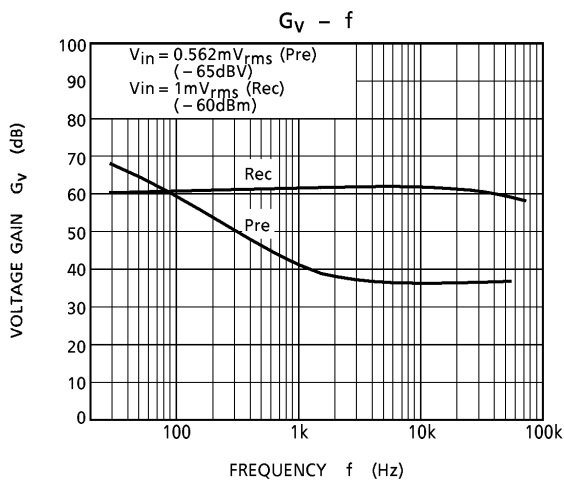
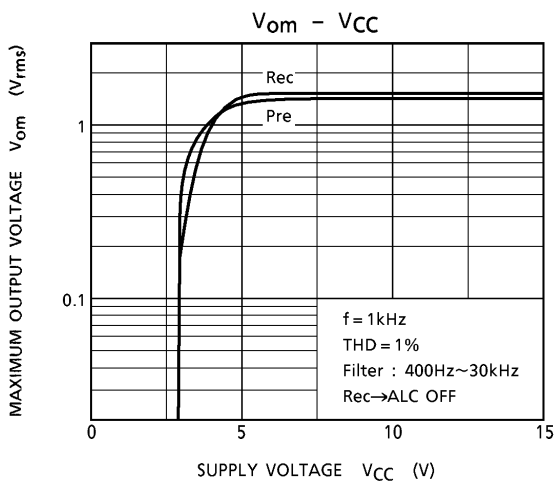
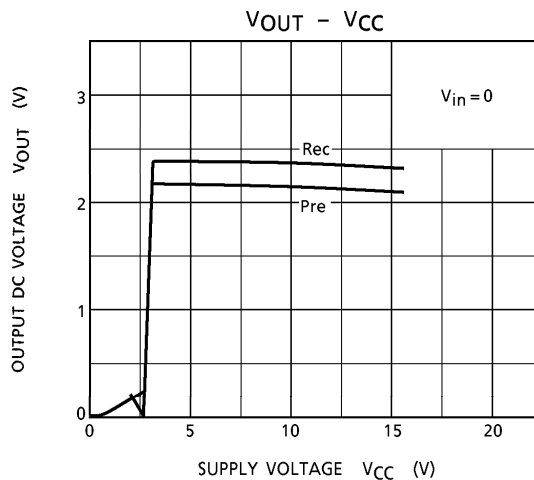
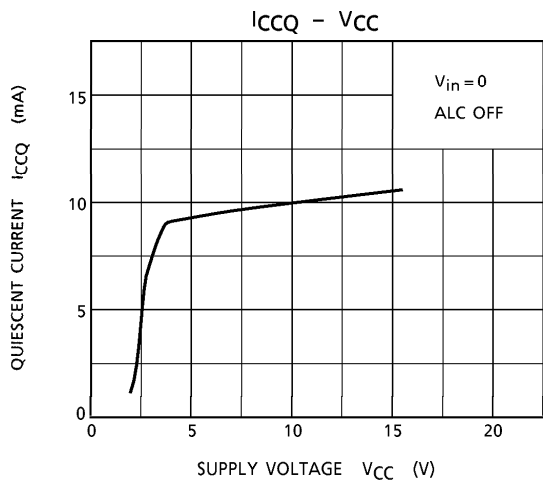
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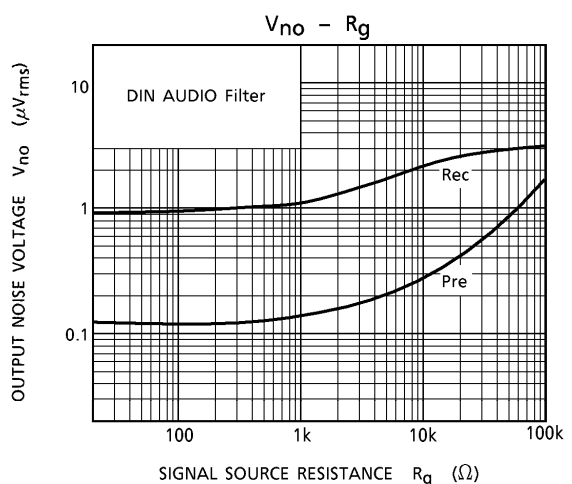
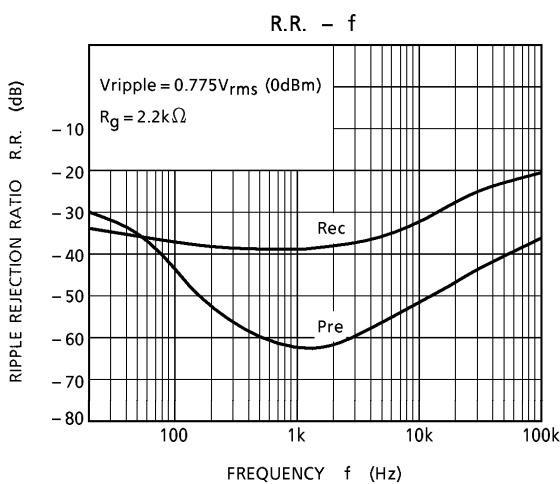
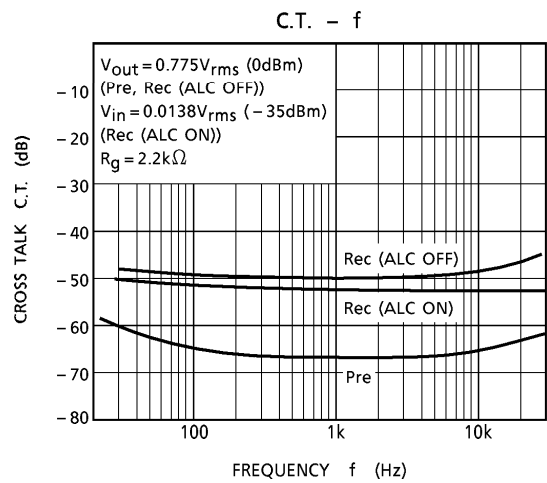
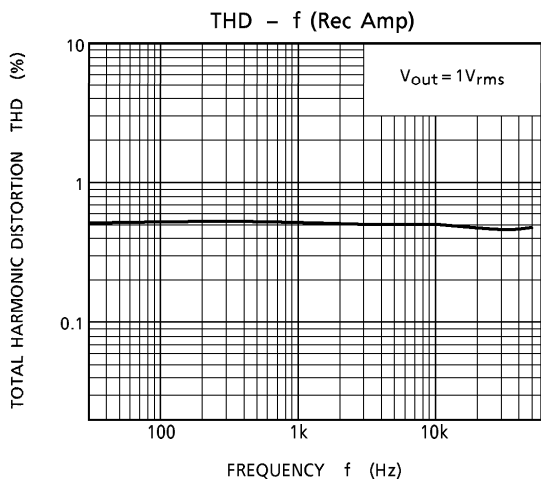
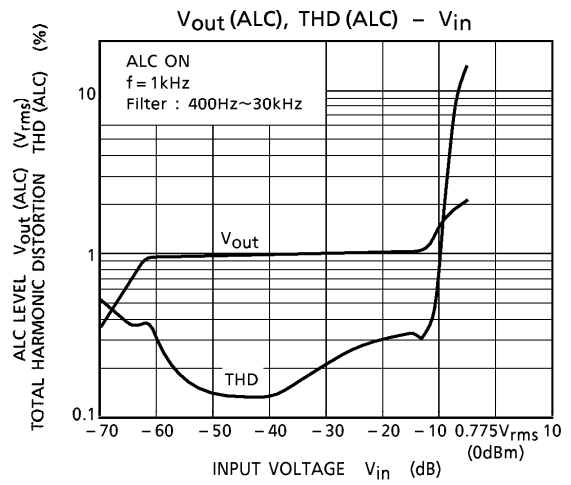
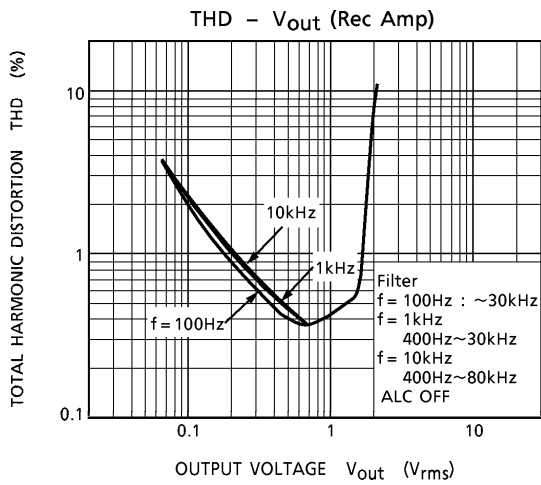
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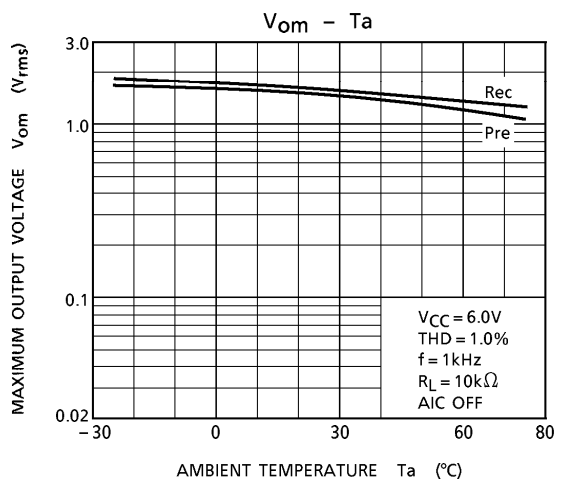
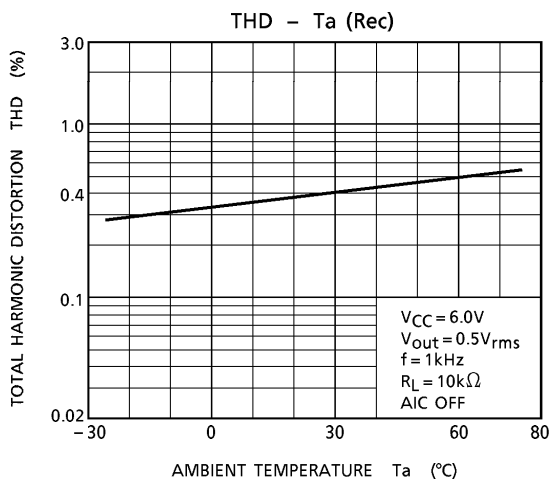
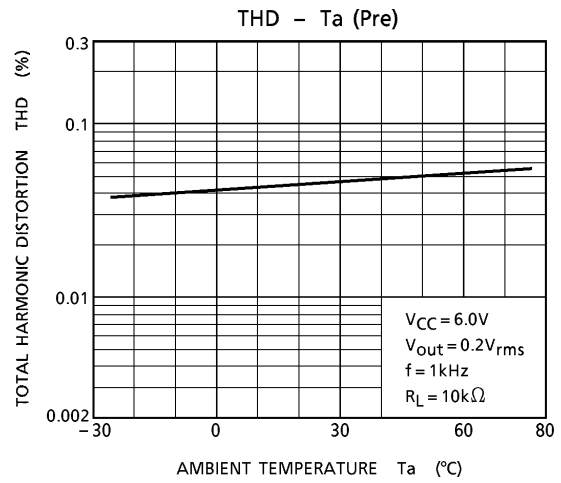
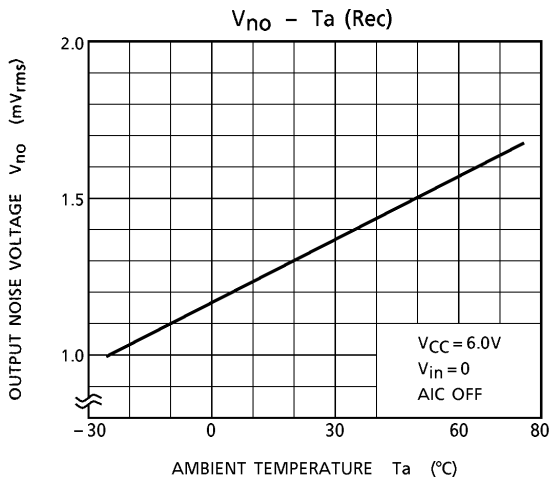
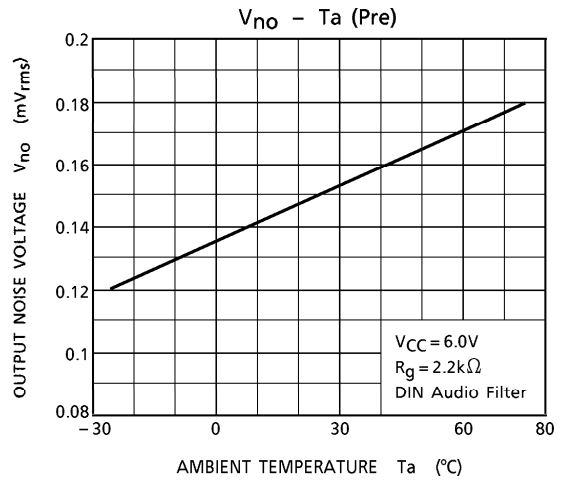
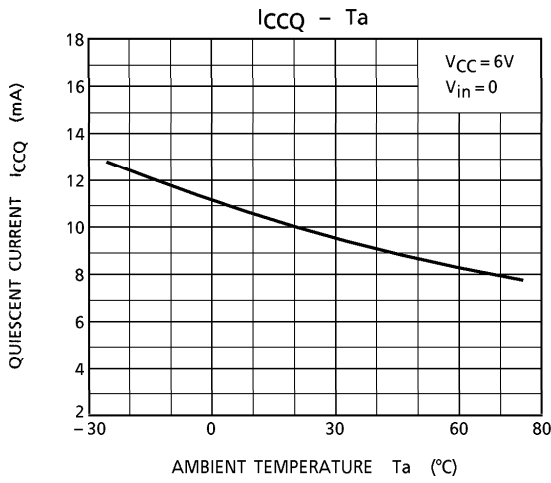
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Recording Amp.	Total Harmonic Distortion (ALC)	THD (ALC)	$V_{in} = 0.0775V_{rms}$ (-20dBm), $f = 1\text{kHz}$, dual input, $R_L = 10\text{k}\Omega$	—	0.3	0.9	%
	ALC Balance	B (ALC)	$V_{in} = 0.0775V_{rms}$ (-20dBm), dual input, $f = 1\text{kHz}$, $R_L = 10\text{k}\Omega$	-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 = ~30kHz	—	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

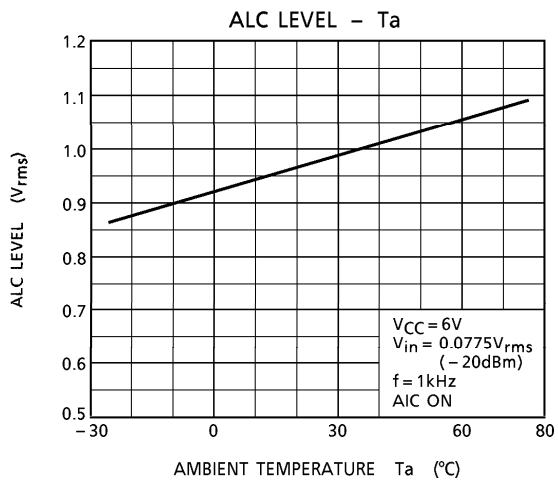
TEST CIRCUIT





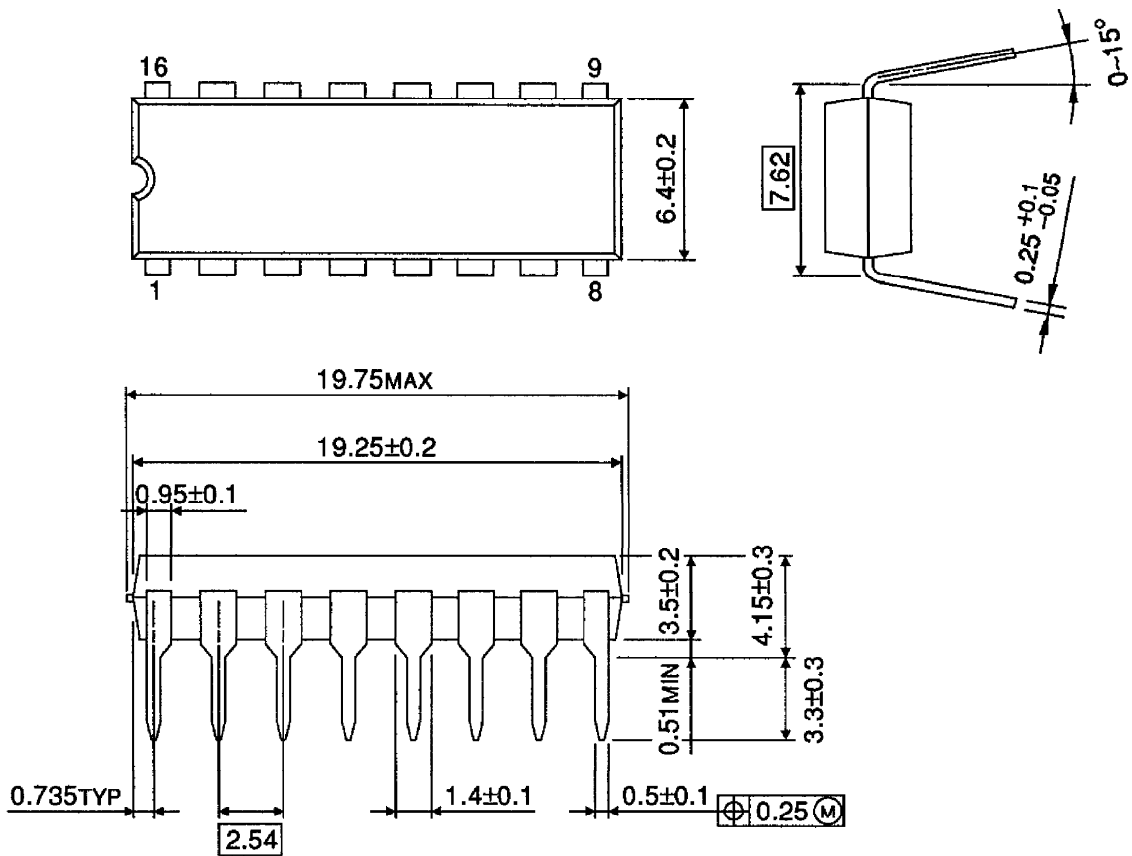






OUTLINE DRAWING
DIP16-P-300-2.54A

Unit : mm



Weight : 1.00g (Typ.)