

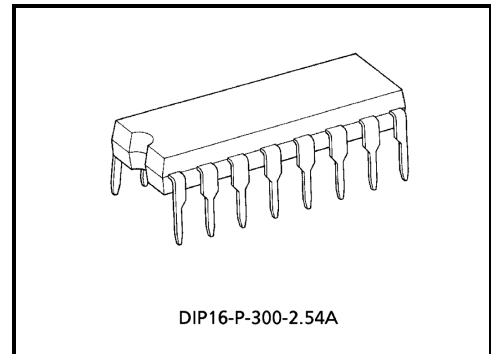
# TA8142AP

## 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.

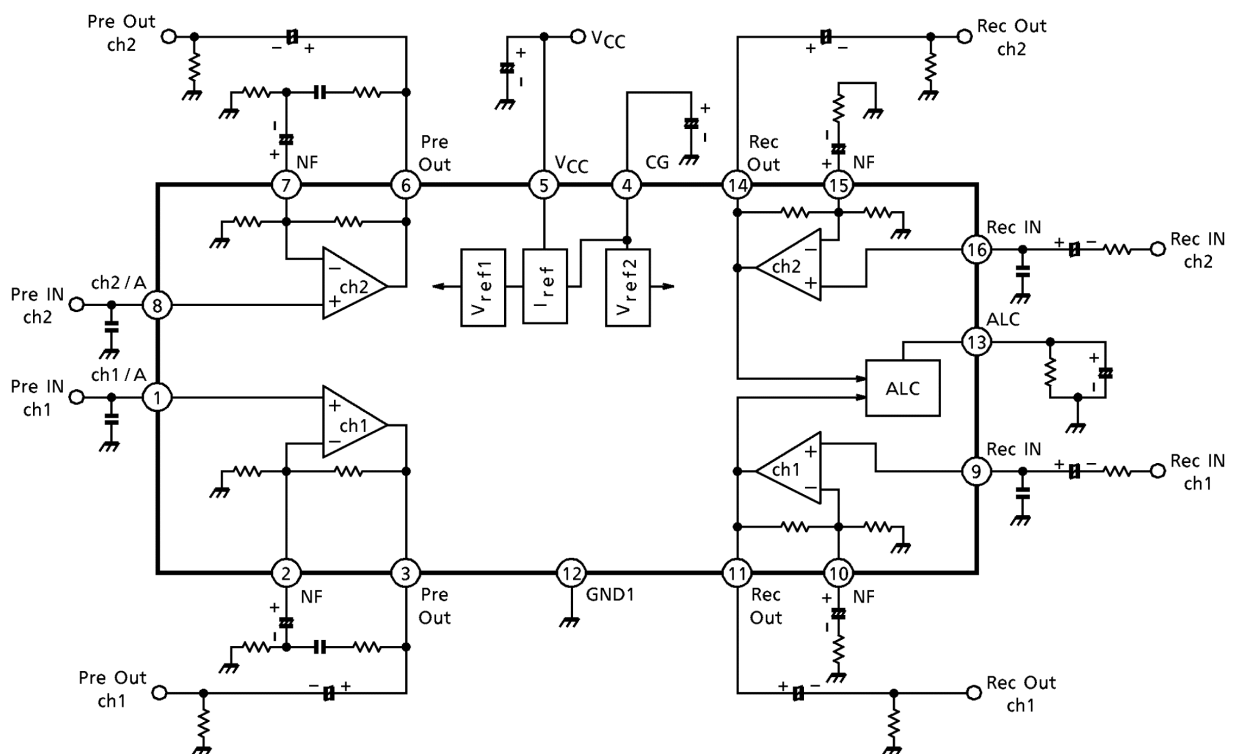
### Features

- Built in play back amplifier
- Built in recording amplifier
- ALC detector circuit
- Operating supply voltage range  
:  $V_{CC(opr)} = 4\sim 13.5V$  ( $T_a = 25^\circ C$ )



Weight: 1.00g (typ.)

### Block Diagram



## Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	14.5	V
Power dissipation	P <sub>D</sub> (Note)	750	mW
Operating temperature	T <sub>opr</sub>	-20~75	°C
Storage temperature	T <sub>stg</sub>	-55~150	°C

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

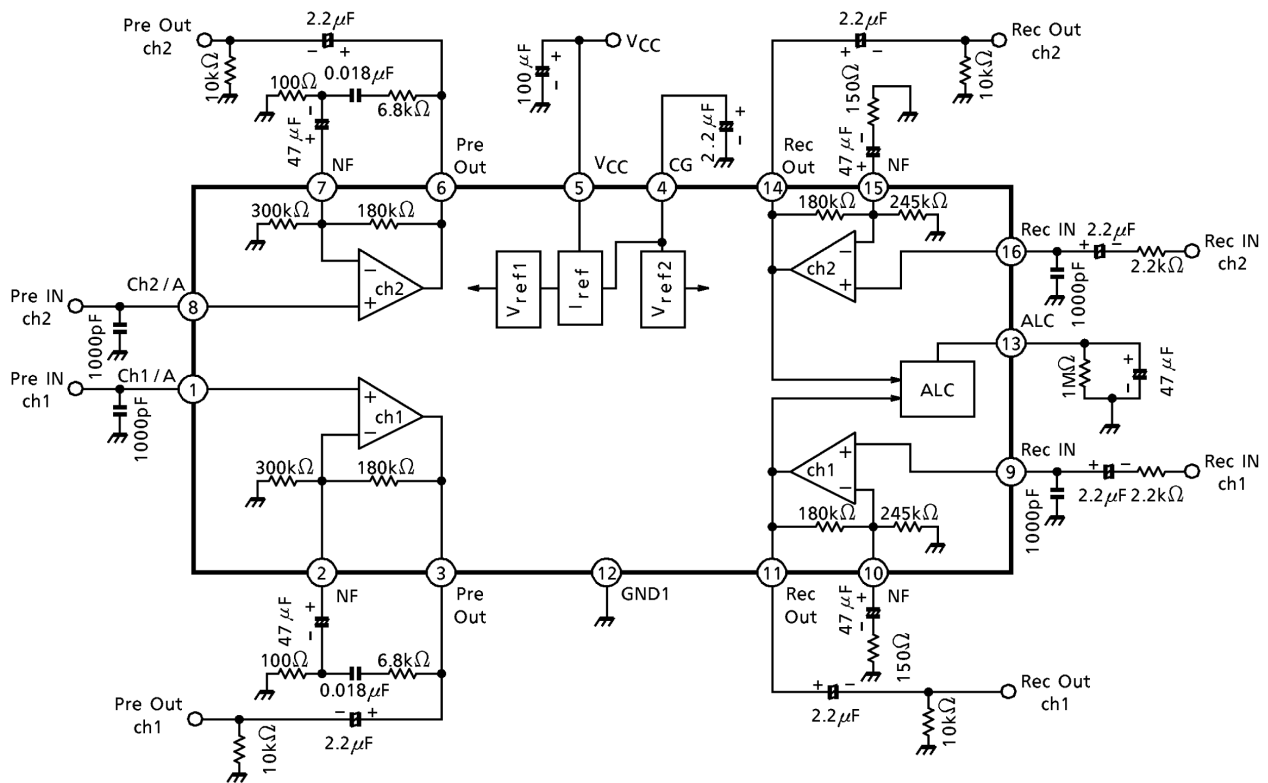
## Electrical Characteristics

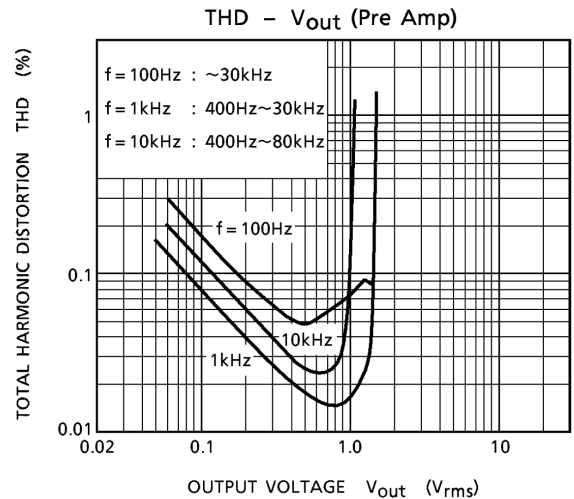
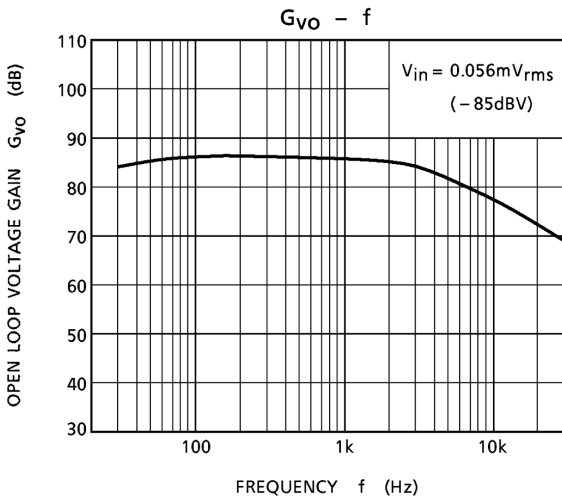
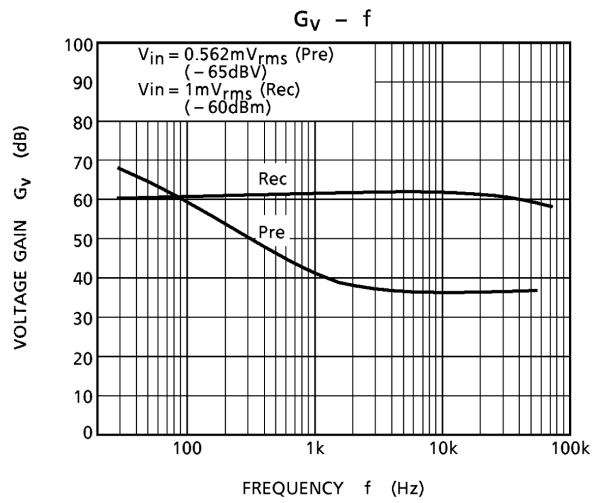
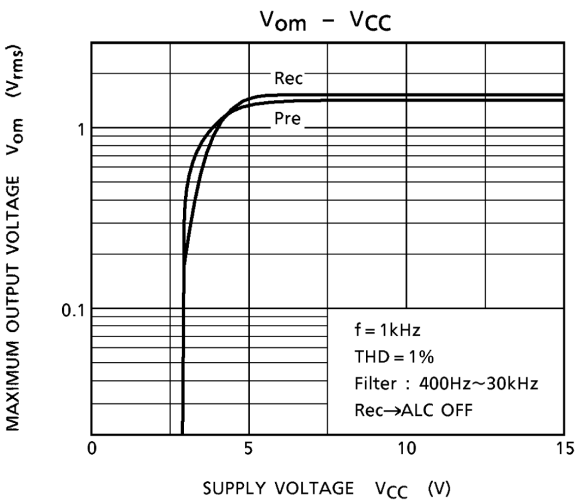
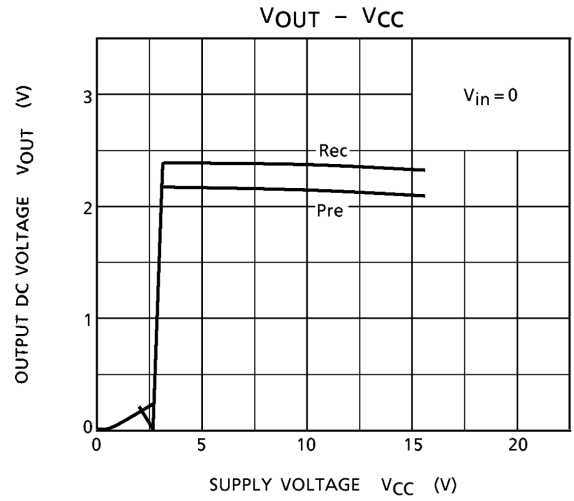
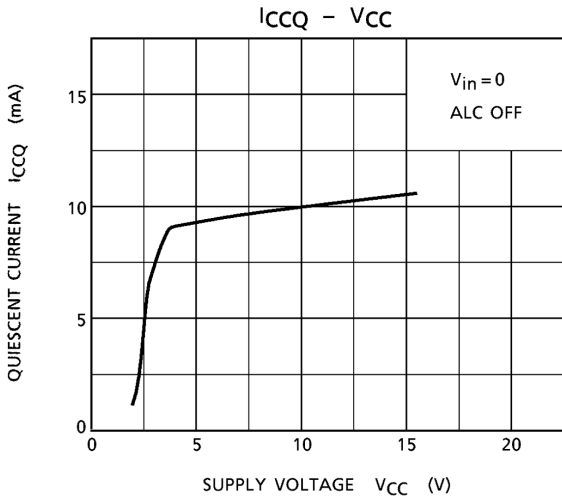
(unless otherwise specified, V<sub>CC</sub> = 6V, f = 1kHz, B.P.F = 400Hz~30kHz)

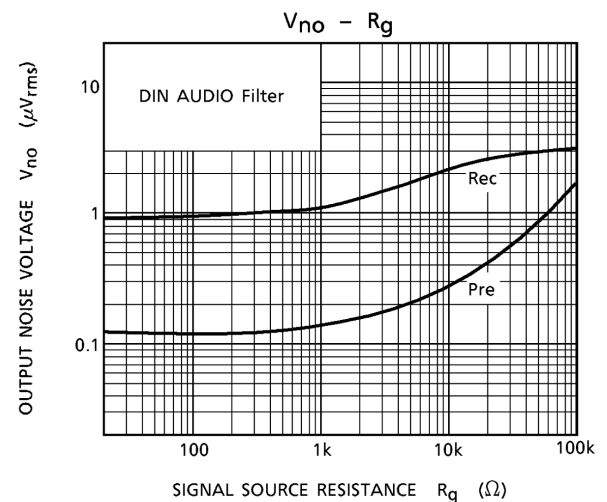
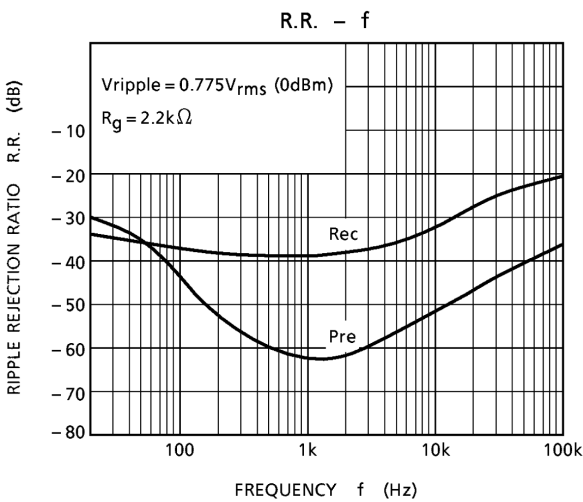
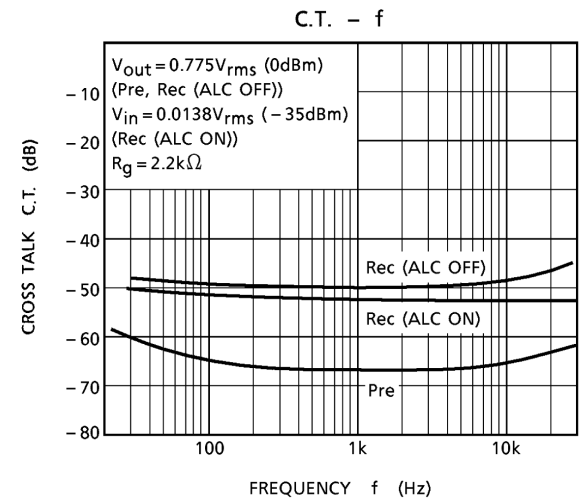
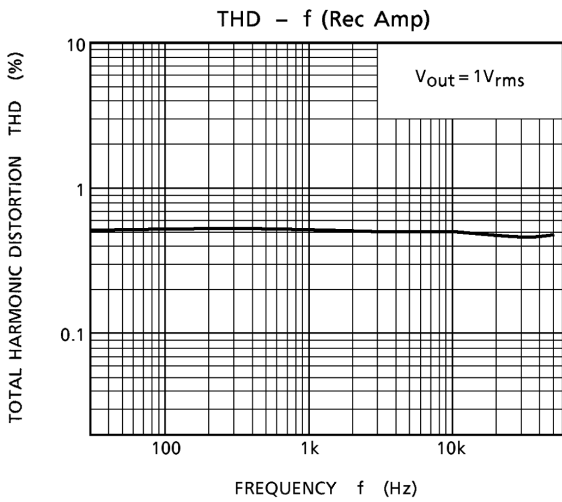
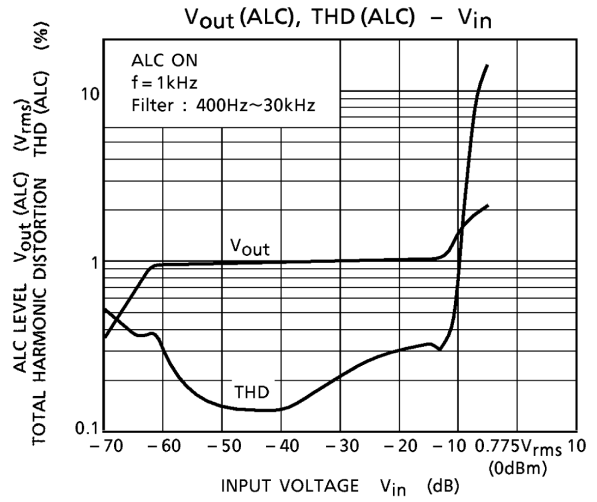
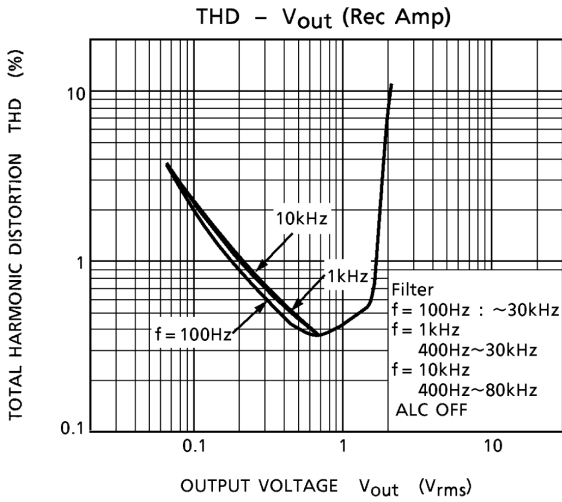
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit	
Quiescent current	I <sub>ccq</sub>	—	—	—	9.5	15	mA	
Play Back Amp.	Output noise voltage	V <sub>no</sub> (pre)	—	Normal mode, R <sub>g</sub> = 2.2kΩ, NAB EQ BW = 20Hz~20kHz, G <sub>v</sub> = 40dB	—	150	350	μV <sub>rms</sub>
	Total harmonic distortion	THD (pre)	—	V <sub>out</sub> = 0.2V <sub>rms</sub> , f = 1kHz normal mode	—	0.05	0.1	%
	Maximum output voltage	V <sub>om</sub> (pre)	—	THD = 1.0%, R <sub>L</sub> = 10kΩ, f = 1kHz normal mode	0.9	1.4	—	V <sub>rms</sub>
	Open loop voltage gain	G <sub>vo</sub> (pre)	—	f = 1kHz, R <sub>L</sub> = 10kΩ V <sub>in</sub> = 13.8μV <sub>rms</sub> (-95dBV)	80	93	—	dB
	Cross talk	C.T. (ch) (pre)	—	V <sub>out</sub> = 0.775V <sub>rms</sub> (0dBm), f = 1kHz R <sub>g</sub> = 2.2kΩ, normal mode	-70	-77	—	dB
	Ripple rejection ratio	R.R. (pre)	—	V <sub>ripple</sub> = 0.775V <sub>rms</sub> (0dBm) f <sub>ripple</sub> = 100Hz, normal mode R <sub>g</sub> = 2.2kΩ, LPF = ~30kHz	—	-40	—	dB
	Voltage gain	G <sub>vn</sub> (pre)	—	V <sub>in</sub> = 7.75mV <sub>rms</sub> (-40dBm) f = 1kHz, normal NAB, R <sub>L</sub> = 10kΩ	—	40	—	dB
Pre amp → rec amp C.T	C.T. (P / R)	—	f = 1kHz, V <sub>out</sub> (pre) = 0.775V <sub>rms</sub> (0dBm), normal (pre)	—	-53.5	—	dB	
Rec amp → pre amp C.T	C.T. (R / P)	—	f = 1 kHz, V <sub>out</sub> (rec) = 0.775 V <sub>rms</sub> (0dBm), normal (pre)	—	-77.5	—	dB	
Recording Amp.	Output noise level	V <sub>no</sub> (rec)	—	R <sub>g</sub> = 2.2 kΩ, BW = 20 Hz~20 kHz ALC off, G <sub>v</sub> = 60dB	—	1.3	2.7	mV <sub>rms</sub>
	Total harmonic distortion	THD (rec)	—	V <sub>out</sub> = 0.5V <sub>rms</sub> , f = 1kHz ALC off, R <sub>L</sub> = 10kΩ	—	0.35	0.9	%
	Maximum output level	V <sub>om</sub> (rec)	—	THD = 1%, R <sub>L</sub> = 10kΩ, f = 1kHz ALC off	1.2	1.5	—	V <sub>rms</sub>
	Open loop voltage gain	G <sub>vo</sub> (rec)	—	f = 1kHz, R <sub>L</sub> = 10kΩ, V <sub>in</sub> = 3.16μV <sub>rms</sub> (-110dBV)	76	86	—	dB
	ALC range	R (ALC)	—	3dB up	—	50	—	dB

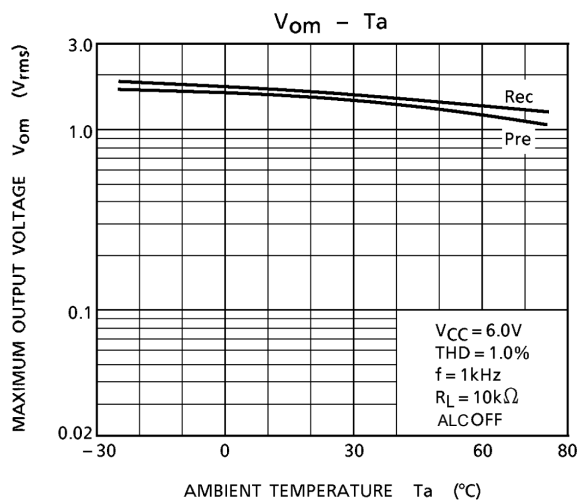
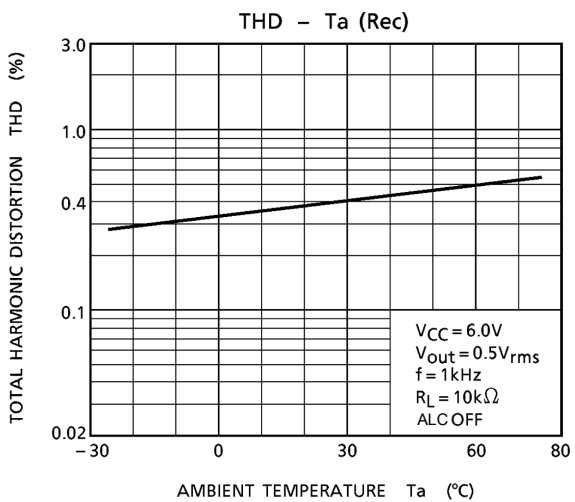
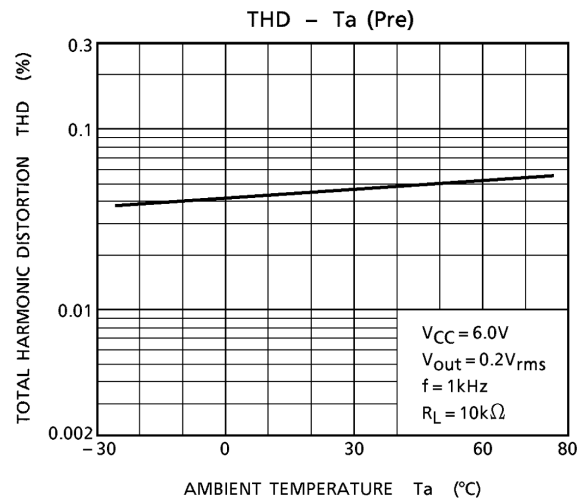
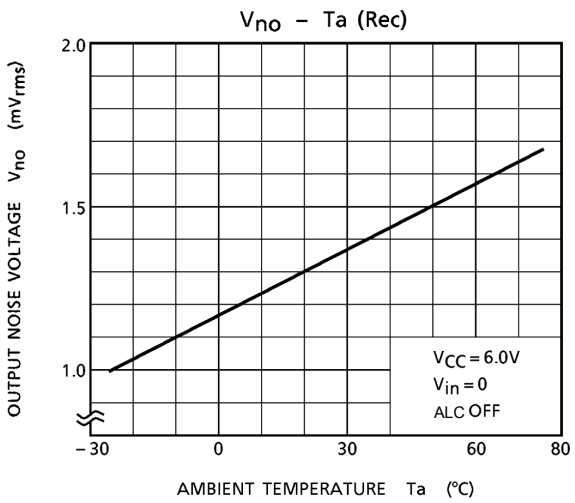
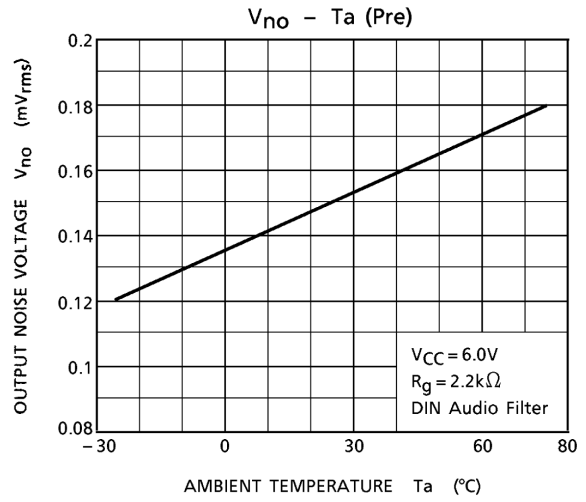
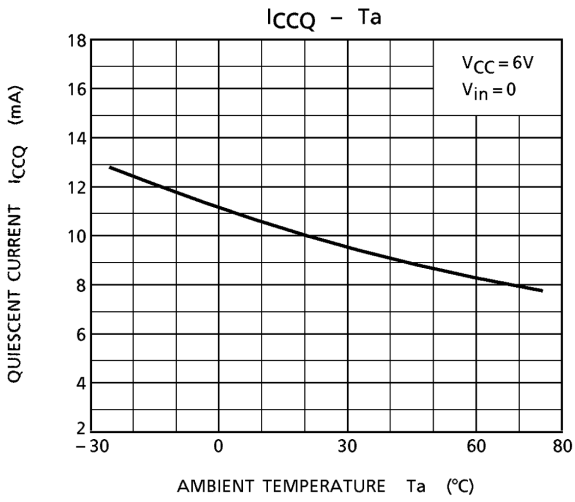
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit	
Recording Amp.	Total harmonic distortion (ALC)	THD (ALC)	—	$V_{in} = 0.0775V_{rms}$ (-20dBm) $f = 1kHz$ , dual input, $R_L = 10k\Omega$	—	0.3	0.9	%
	ALC balance	B (ALC)	—	$V_{in} = 0.0775V_{rms}$ (-20dBm) dual input, $f = 1kHz$ , $R_L = 10k\Omega$	-2	0	+2	dB
	ALC level	V (ALC)	—	$V_{in} = 0.0775V_{rms}$ (-20dBm) $f = 1kHz$ , $R_L = 10k\Omega$	0.75	1.0	1.2	$V_{rms}$
	Ripple rejection ratio	R.R. (rec)	—	$V_R = 0.775V_{rms}$ (0dBm), $f = 100Hz$ $R_g = 2.2k\Omega$ , LPF = ~30kHz	—	38	—	dB
	Voltage gain	$G_{vn}$ (rec)	—	$f = 1kHz$ (flat), $R_L = 10k\Omega$ $V_{in} = 1mV_{rms}$ (-60dBV)	—	61	—	dB
	Cross talk (ALC off)	C.T. (ch)	—	$V_{out} = 0.775V_{rms}$ (0dBm), $f = 1kHz$ $R_g = 2.2k\Omega$ , ALC off	40	54	—	dB
	Cross talk (ALC on)	C.T. (ch)	—	$f = 1kHz$ , $R_g = 2.2k\Omega$ , ALC on $V_{in} = 0.0775V_{rms}$ (-20dBm)	40	52	—	dB

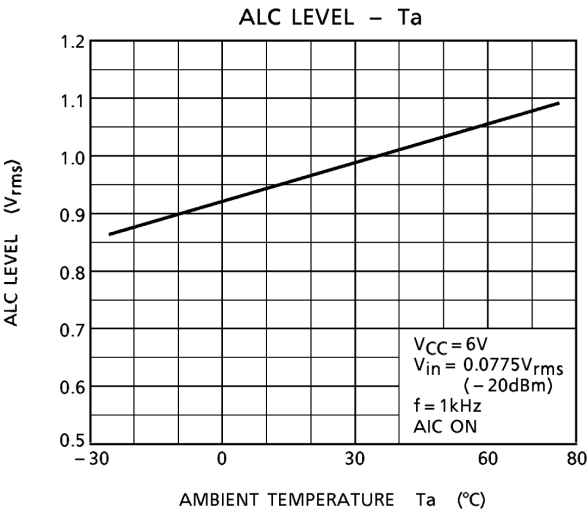
**Test Circuit**







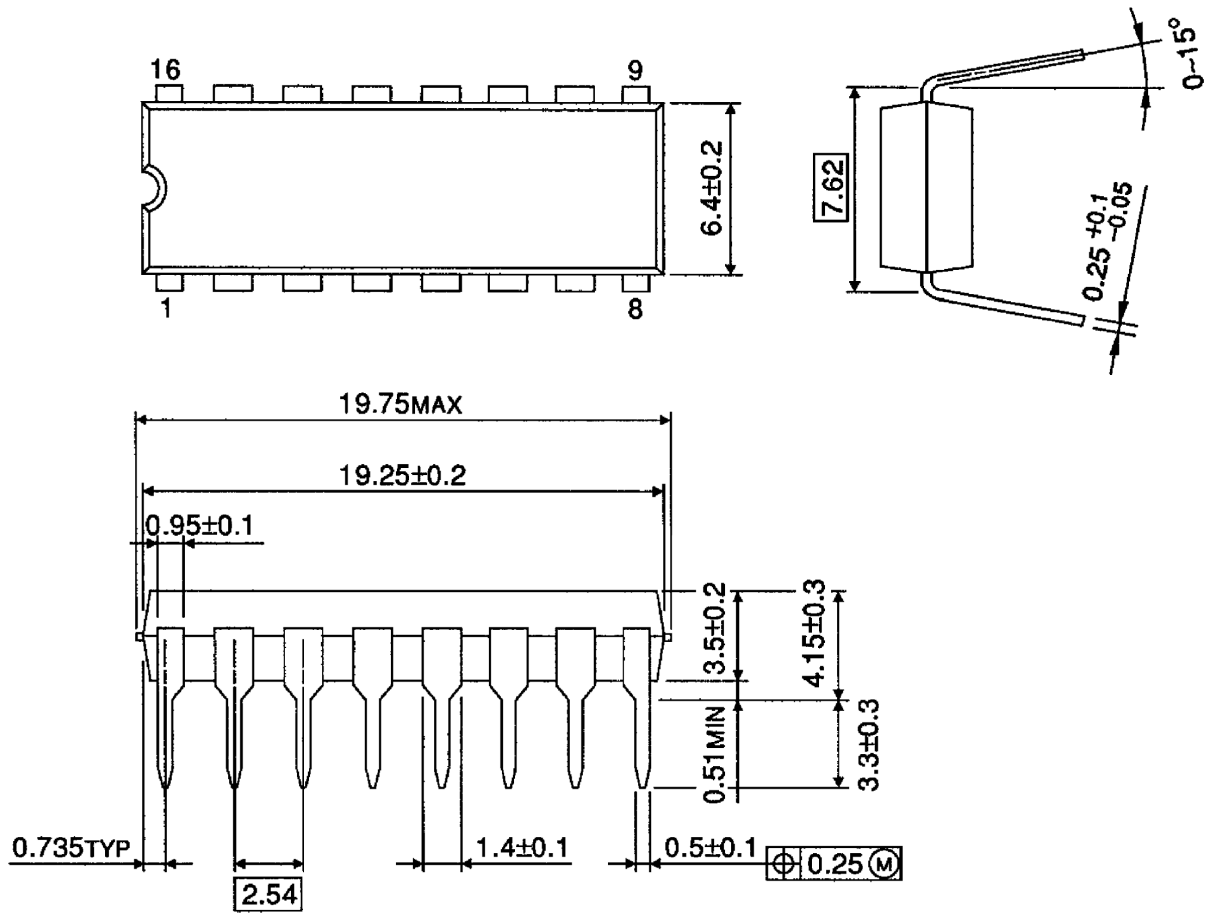




## Package Dimensions

DIP16-P-300-2.54A

Unit : mm



Weight: 1.00g (typ.)



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