

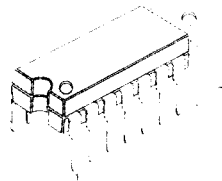
ONE-CHIP TAPE RECORDER SYSTEM

The KA2213 is a monolithic integrated circuit consisting of a preamplifier, ALC circuit, power amplifier in a 14-pin plastic dual in line package with heat sink.

14 DIP H/S

FEATURES

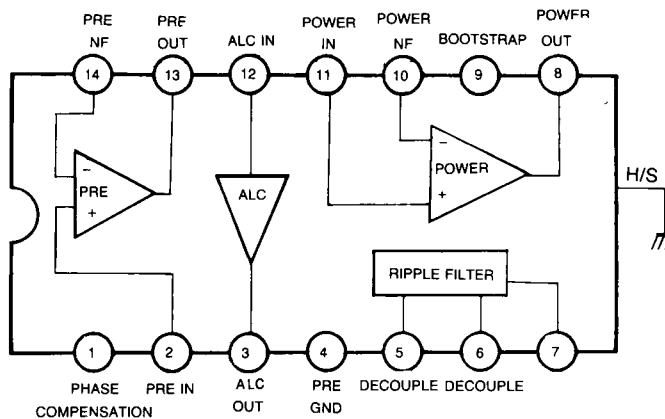
- Suitable for the play and recording functions of mono cassette tape recorders.
- Wide operating supply voltage range: $V_{CC} = 4V \sim 12V$
- High gain preamplifier and power amplifier.
- Output power of power amplifier state
 $P_O = 1W$ at $V_{CC} = 6V$, $R_L = 4\Omega$, THD = 10%.
- Soft tone quality at the time of output saturation.
- Wide ALC range and small variation in output voltage.
- Small shock noise at the time of power on/off due to built-in prevention circuit.
- Variable monitor capability due to recording amplifier consisting of preamplifier alone.
- Minimum number of external parts required.



ORDERING INFORMATION

Device	Package	Operating Temperature
KA2213	14 DIP H/S	$-20^{\circ}C \sim +70^{\circ}C$

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	13	V
Power Dissipation	P_D	1.2	W
		2.25*	W
Operating Temperature	T_{OPR}	$-20 \sim +70$	$^\circ\text{C}$
Storage Temperature	T_{STG}	$-40 \sim +150$	$^\circ\text{C}$

* Mounted and soldered on a 50mm x 50mm copper foil of PCB

ELECTRICAL CHARACTERISTICS

($T_a = 25^\circ\text{C}$, $V_{CC} = 6\text{V}$, $f = 1\text{KHz}$, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CCQ}	$V_{CC} = 6V, V_i = 0$		18	30	mA
		$V_{CC} = 9V, V_i = 0$		23	40	mA
Pre Amplifier						
Open Loop Voltage Gain	G_{VO}	Open loop		85		dB
Closed Loop Voltage Gain	G_{VC}	Closed loop, Play		40		dB
Output Voltage	V_O	THD=1%, Play	0.9	1.2		V
Input Resistance	R_i		21	30		K Ω
Equivalent Input Noise Voltage	V_{NI}	Play		1.0	2.0	μV
ALC Input Level	$V_{I(ALC)}$	THD = 1%, Rec	-20	-12		dBm
Power Amplifier						
Closed Loop Voltage Gain	G_{VC}	$R_F = 51\Omega$	43	45	47	dB
Output Power	P_O	$V_{CC} = 6V, R_L = 4\Omega, THD = 10\%$	0.7	1.0		W
		$V_{CC} = 7.5V, R_L = 4\Omega, THD = 10\%$	1.0	1.5		W
		$V_{CC} = 9V, R_L = 4\Omega, THD = 10\%$	1.7	2.2		W
Total Harmonic Distortion	THD	$P_O = 250mW$		0.3	1.5	%
Input Resistance	R_i			30		K Ω
Output Noise Voltage	V_{NO}	$R_G = 10K\Omega$		0.6	1.8	mV
Ripple Rejection Ratio	RR	$R_G = 0\Omega, V_R = 150mV, f = 100Hz$	40	45		dB

1. Mono cassette tape recorder



Fig. 4