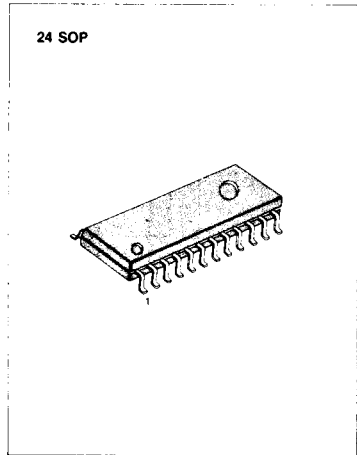


**DUAL PRE-POWER AMPLIFIER FOR AUTO REVERSE**

The KA22131 is a monolithic integrated circuit consisting of an autoreverse dual pre and power amplifier. It is suitable for 3V portable radio cassettes with an auto-reverse function.

**FEATURES**

- Dual pre-power amplifier on 1 chip
- Auto-reverse switch included
- Muting circuit included for Metal/Normal gain control
- LED drive circuit included for tape direction indication
- Power ON muting circuit included for suppression of shock-noise at the power ON time.
- Operating supply voltage range:  $V_{CC} = 1.8V \sim 3.6V$



**BLOCK DIAGRAM**

**ORDERING INFORMATION**

Device	Package	Operating Temperature
KA22131D	24 SOP	-20°C ~ +70°C

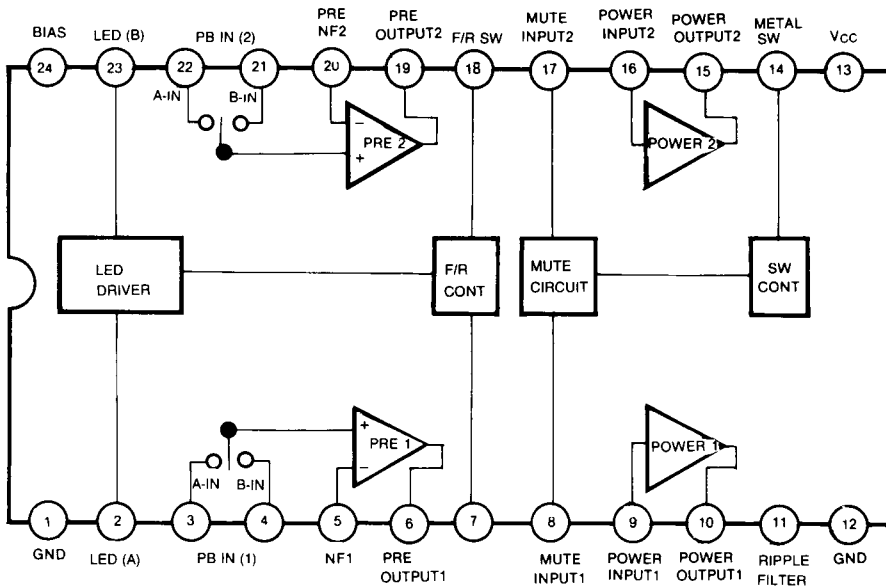


Fig. 1

## ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V <sub>CC</sub>	4.5	V
Power Dissipation	P <sub>D</sub>	600	mW
Operating Temperature	T <sub>OPR</sub>	-20 ~ +70	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +125	°C

## ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V<sub>CC</sub> = 3V, f = 1KHz, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I <sub>CCQ</sub>	V <sub>i</sub> = 0V, Pin 14, 18: Open	4	9	15	mA
<b>PRE-AMP (R<sub>L</sub> = 10KΩ)</b>						
Open Loop Voltage Gain	G <sub>VO</sub>	V <sub>o</sub> = -10dBm	72	83		dB
Output Voltage	V <sub>o</sub>	THD = 1%	300	450		mV
Total Harmonic Distortion	THD	V <sub>o</sub> = 0.2V, NAB = 33dB		0.03	0.08	%
Equivalent Input Noise Voltage	V <sub>NI</sub>	R <sub>G</sub> = 2.2KΩ BW(-3dB) = 20Hz ~ 20KHz		0.9	1.2	μV
Ripple Rejection Ratio	RR	V <sub>R</sub> = -20dBm, f = 100Hz NAB = 33dB	43	53		dB
FWD-REV Cross Talk	CT <sub>F-R</sub>	V <sub>o</sub> = -10dBm, R <sub>G</sub> = 2.2KΩ BW = 20Hz ~ 20KHz	65	75.5		dB
Input Bias Current	I <sub>BIAS</sub>	V <sub>i</sub> = 0V		130	500	nA
<b>POWER-AMP (R<sub>L</sub> = 16Ω)</b>						
Output Power	P <sub>o</sub>	THD = 10%	50	69		mW
Closed Loop Voltage Gain	G <sub>VC</sub>	V <sub>i</sub> = -40dBm	24.6	26.6	28.6	dB
Total Harmonic Distortion	THD	P <sub>o</sub> = 1mW		0.27	0.5	%
Output Noise Voltage	V <sub>NO</sub>	R <sub>G</sub> = 0Ω, BW (-3dB) = 20Hz ~ 20KHz		27	39	μV
Ripple Rejection Ratio	RR	V <sub>R</sub> = -20dBm, f = 100Hz, R <sub>G</sub> = 0Ω	45	61		dB
Input Resistance	R <sub>i</sub>		21.4	30	38.6	KΩ
Input Bias Current	I <sub>BIAS</sub>	V <sub>i</sub> = 0V, R <sub>G</sub> = 100KΩ		10	90	nA
Channel Balance	CB	V <sub>o</sub> = -10dBm		0.1	0.7	dB
LED Maximum Current	I <sub>DR (MAX)</sub>	V <sub>CE (SAT)</sub> = 0.3V	5			mA
<b>PRE + POWER AMP</b>						
L-R Cross Talk	CT <sub>L-R</sub>	VR: Max, PRE: R <sub>G</sub> = 2.2KΩ BW = 20Hz ~ 20KHz, Power: V <sub>o</sub> = -5dBm	40	48		dB
Signal Leakage	S <sub>LKG</sub>	PRE: V <sub>o</sub> = -12dBm VR: Min		-66	-60	cBm

TEST CIRCUIT

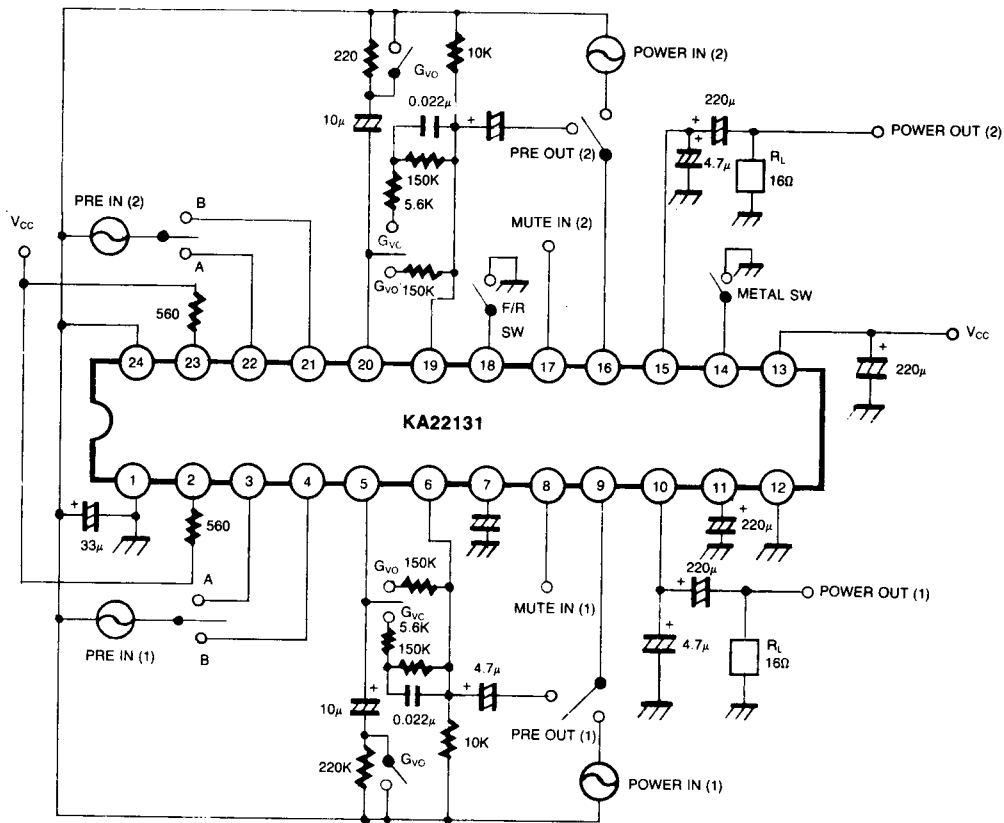


Fig. 2





LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

**[LittleDiode.com](http://LittleDiode.com)**

Looking forward to providing you with the best possible service.