

AN7470

FM Stereo Multiplex Demodulator

■ Description

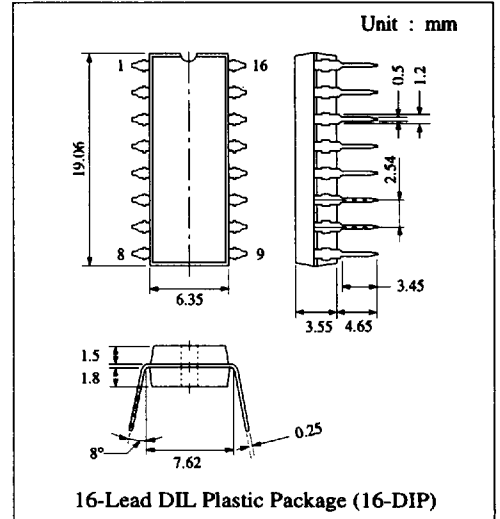
The AN7470 is a monolithic integrated circuit designed for FM multiplex demodulator circuit for high-class stereo FM tuners.

■ Features

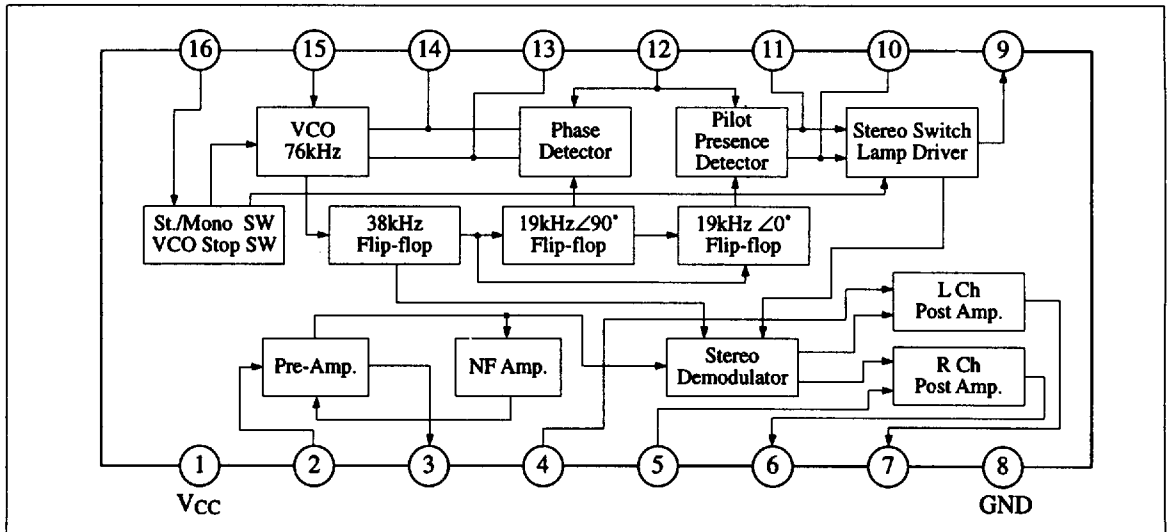
- Small shock noise from switching operation (ON/OFF)
- Perfect synchronization for stereo/monaural switching operation and stereo lamp
- Built-in post amplifier

■ Pin

Pin No	Pin Name	Pin No	Pin Name
1	V _{CC}	9	Stereo Indicator and VCO freq. Monitor
2	Composite Signal Input	10	Pilot Det. Low-pass Filter
3	Buffer Amp. Output	11	Pilot Det. Low-pass Filter
4	L Ch. Amp. Feedback	12	Pilot Signal Input
5	R Ch. Amp. Feedback	13	PLL Low-pass Filter
6	R Ch. Amp. Output	14	PLL Low-pass Filter
7	L Ch. Amp. Output	15	VCO RC Time Const.
8	GND	16	Forced Mono. VCO Killer



■ Block Diagram



■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

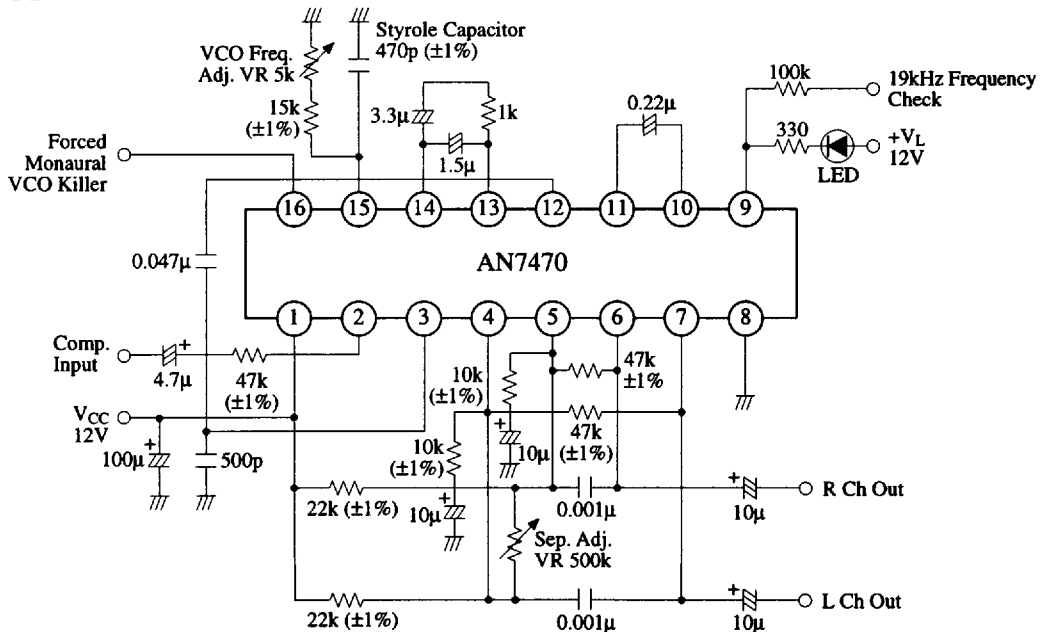
Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	14.4	V
Power Dissipation ($T_a=75^\circ\text{C}$)	P_D	430	mW
Operating Ambient Temperature	T_{opr}	-20 ~ +75	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

Operating Supply Voltage Range: $V_{CC} = 9.0\text{V} \sim 14.0\text{V}$

■ Electrical Characteristics ($V_{CC}=12\text{V}$, $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Circuit Current (Lamp OFF)	I_I	Without input signal (Lamp OFF)	10	18	28	mA
Circuit Current (Lamp ON)	I_I	Pilot signal, $V_p = 30\text{mV}$ (Lamp ON)		20		mA
Channel Separation	Sep	$f_m = 1\text{kHz}$, $L + R = 90\%$, Pilot = 10%, $V_{(L+R)} = 270\text{mV}$, $V_p = 30\text{mV}$	45	55		dB
Voltage Gain	G_v		10	12	14	dB
Channel Balance	CB		-1	0	1	dB
Total Harmonic Distortion (Stereo)	THD		0.04	0.1		%
Total Harmonic Distortion (Mono)	THD		$f_m = 1\text{kHz}$, $V_{in} = 300\text{mV}$		0.02	0.1
Carrier Leak	CL	$f_m = 1\text{kHz}$, $L + R = 90\%$, Pilot = 10%, $V_{(L+R)} = 270\text{mV}$	20	26		dB
Pilot Signal ON Voltage	$V_{p(ON)}$	Pilot signal 19kHz	6	12	20	mV
Capture Range	CR	Pilot signal 19kHz, $V_p = 30\text{mV}$	± 1.5	± 3		%
Signal to Noise Ratio	S/N	$f_m = 1\text{kHz}$, $V_{in} = 300\text{mV}$, $R_g = 0\Omega$	76	85		dB

■ Application Circuit



■ Characteristics Curve

