

GL5529

SWITCHING TYPE DUAL PREAMPLIFIER AND LOW FRE QUENCY AMPLIFIER WITH ALC CIRCUIT

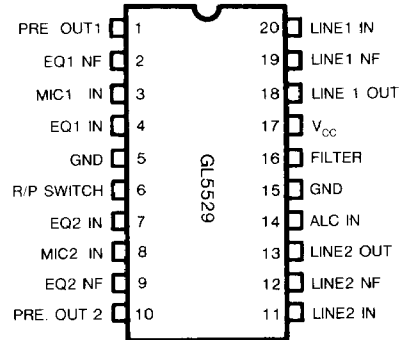
Function

- Amplification to set equalization for magnetic head
- Amplifying the signal from microphone
- Amplifying the signal from EQ, MIC and other amplifiers
- Automatic level control
- Switching the recording and playback mode
- Filtering pop noise

Features

- Including Preamplifiers with Electronic Switch for Switching Between the Recording and Playback Mode
- Built-in Line Amplifier with ALC Circuit
- Wide Range of Usable Power Supplies
- Fabricated in a 2-Channel Configuration

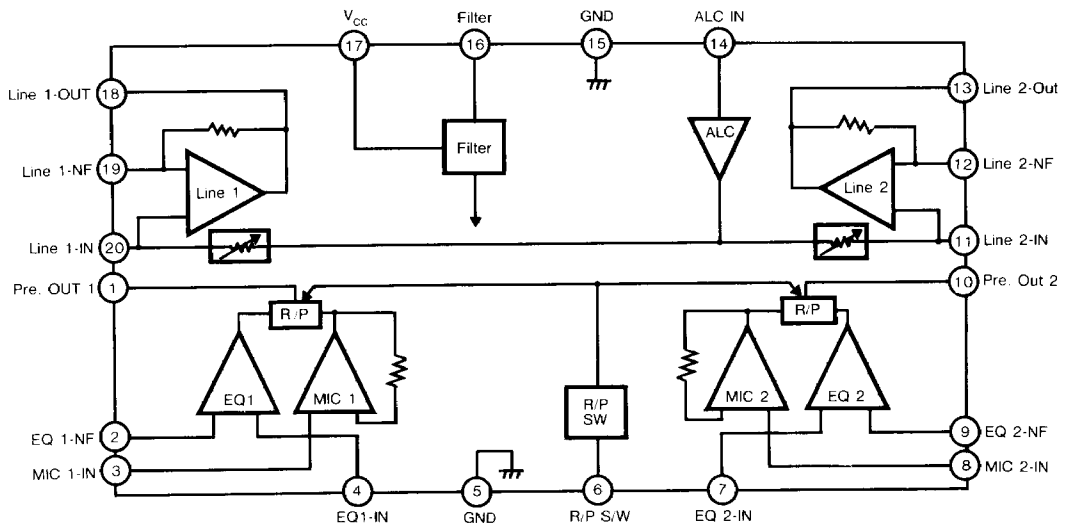
Pin Configuration



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

Supply Voltage	V_{CC}	18	V
Circuit Current	I_{CC}	100	mA
Power Dissipation	P_D	1000	mW
Operating Temperature	T_{OPR}	-20°C to $+75^\circ\text{C}$	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40°C to $+125^\circ\text{C}$	$^\circ\text{C}$

Block Diagram



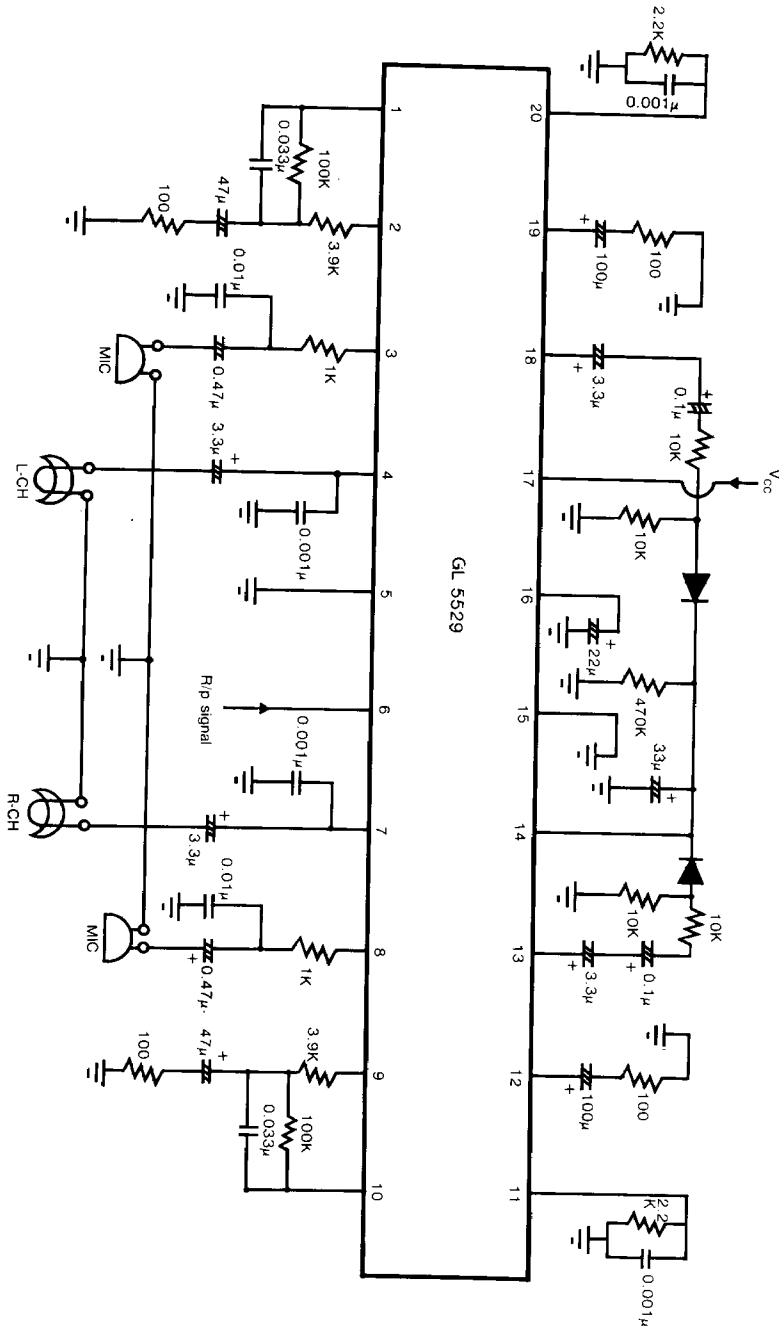
Electrical Characteristics: $T_A=25^\circ\text{C}$, $V_{CC}=9\text{V}$, $f=1\text{KHz}$, unless otherwise specified.

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		3.5	9	12	V
Quiescent Current	I_{CCO}	Playback mode	5	10	15	mA
MIC-Amp Voltage Gain	G_{VM}	Amp. Output Voltage = 1 Vrms	23	24.5	26	dB
EQ-Amp Voltage Gain	G_{VP}	Amp. Output Voltage = 1Vrms	35	38	41	dB
Line-Amp Voltage Gain	G_{VL}	Amp. Output Voltage = 1Vrms	37	40	43	dB
MIC-Amp Maximum Output Voltage	V_{OM}	THD = 3%	1.5	2.5		Vrms
EQ-Amp Maximum Output Voltage	V_{OP}	THD = 3%	1.5	2.5		Vrms
Line-Amp Maximum Output Voltage	V_{OL}	THD = 3%	1.9	2.5		Vrms
MIC-Amp THD	THD_M	Amp. Output Voltage = 1 Vrms		0.2	0.5	%
EQ-Amp THD	THD_P	Amp. Output Voltage = 1 Vrms		0.2	0.5	%
Line-Amp THD	THD_L	Amp Output Voltage = 1 Vrms		0.2	0.5	%
MIC-Amp Input Impedance	Z_{IM}	$M_{1,2}$ Voltage When Input=10m Vrms	5	7.5	10	K Ω
EQ-Amp Input Impedance	Z_{IP}	$P_{1,2}$ Voltage When Input=10m Vrms	40	56	75	K Ω
Line-Amp Input Impedance	Z_{IL}	$L_{1,2}$ Voltage When Input=10m Vrms	20	33	45	K Ω
ALC range	ALC_A	From the point ALC is activated until output is 3 dB up	40	46		dB
ALC Distortion	ALC_{THD}	Distortion when input is 20dB up from the point ALC is activated			1.5	%
ALC Balance	ALC_B	The ALC output level difference in CH 1/CH 2 when input is 20dB up, from the point ALC is activated			3	dB
MIC-Amp Equivalent input Noise Voltage	N_{IM}	$R_g = 1\text{K}\Omega$ 20~30 KHz BPF		1	2	μVrms
EQ-Amp Equivalent Input Noise Voltage	N_{IP}	$R_G=1\text{k}\Omega$ 20~30KHz BPF		1	2	μVrms
Line-Amp Equivalent Input Noise Voltage	N_{IL}	$R_g = 1\text{K}\Omega$ 20~30 KHz BPF		1	3	μVrms

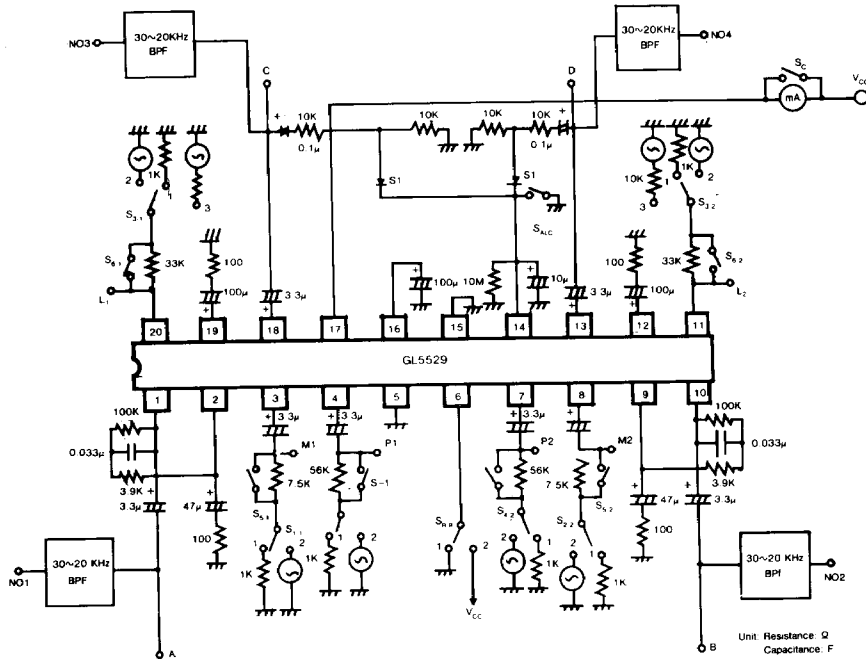
Pin Description

NO	NAME	Explanation	No.	Name	Explanation
1	Pre · Out 1	EQ/MIC output When input is play back mode Output Signal is EQ output When input is REC. mode Out put Signal is MIC output	10	Pre · Out 2	Same as Pin 1
2	EQ 1 – NF	EQ-Amp Negative feedback input	11	Line 2 – IN	Line-Amp input terminal to amplify the signal from the EQ, MIC and other amplifiers
3	MIC 1 – IN	MIC-Amp input terminal to amplify the Signal from a microphone.	12	Line 2 – NF	Line-Amp negative feedback input
4	EQ 1 – IN	EQ-Amp input terminal to amplify and to equalize the signal from the magnetic head.	13	Line 2 – Out	Line-Amp output
5	GND	Ground	14	ALC IN	ALC Input Pin
6	R/P switch	REC./Play switch control pin	15	GND	Ground
7	EQ 2 – IN	Same as Pin 4	16	Filter	Filtering POPNoise
8	MIC 2 – IN	Same as Pin 3	17	V _{CC}	Power Supply
9	EQ 2 – NF	Same as Pin 2	18	Line 1 – out	Same as 13
			19	Line 1 – NF	Same as 12
			20	Line 1 – IN	Same as 11

Application Circuit



Test Circuit



Test Methods

Parameter	Switch conditions										Test point									
	Symbols	S _{R/P}	S _C	S _{1-1,2}	S _{2-1,2}	S _{3-1,2}	S _{4-1,2}	S _{5-1,2}	S _{6-1,2}	S _{ALC}	A	B	C	D	P _{1,2}	M _{1,2}	L _{1,2}	mA	No _{1,2}	No _{3,4}
MIC amplifier	I _{CCO}	1	OFF	1	1	1	ON	ON	ON	ON								0		
	G _{VM1,2}	2	ON	2	↓	↓	↓	↓	↓	↓	0	0								
	V _{OM1,2}	↓	↓	↓	↓	↓	↓	↓	↓	↓	0	0								
	THD _{M1,2}	↓	↓	↓	↓	↓	↓	↓	↓	↓	0	0								
	Z _{iM1,2}	↓	↓	↓	↓	↓	↓	↓	OFF	↓					0					
EQ amplifier	N _{iM1,2}	↓	↓	1	↓	↓	↓	ON	↓										0	
	G _{VP1,2}	1	↓	↓	2	↓	↓	↓	↓	0	0									
	V _{OP1,2}	↓	↓	↓	↓	↓	↓	↓	↓	0	0									
	THD _{P1,2}	↓	↓	↓	↓	↓	↓	↓	↓	0	0									
	Z _{iP1,2}	↓	↓	↓	↓	↓	OFF	↓	↓	↓				0						0
Line-recording amplifier	N _{iP1,2}	↓	↓	↓	1	↓	ON	↓	↓											0
	G _{VL1,2}	↓	↓	↓	↓	2	↓	↓	↓			0	0							
	V _{OL1,2}	↓	↓	↓	↓	↓	↓	↓	↓			0	0							
	THD _{L1,2}	↓	↓	↓	↓	↓	↓	↓	↓			0	0							
	Z _{iL1,2}	↓	↓	↓	↓	↓	↓	↓	OFF	↓							0			
ALC	N _{iL1,2}	↓	↓	↓	↓	1	↓	↓	ON											0
	ALC _A	2	↓	↓	↓	3	↓	↓	↓	OFF			0	0						
	ALC _{THD}	↓	↓	↓	↓	↓	↓	↓	↓	↓			0	0						
	ALC _B	↓	↓	↓	↓	↓	↓	↓	↓	↓			0	0						