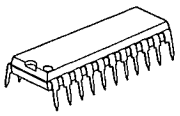
VIDEO EQUALIZER

■ GENERAL DESCRIPTION

NJM2258 is the IC functioning the gain high pass correction, as well as for equalizing function of wave distortion correction, generated by bright signal of group delay feature like low band filter. It has internalizing REC line, one circuit, and then the playback line 2 circuit.

■ PACKAGE OUTLINE



NJM2258L

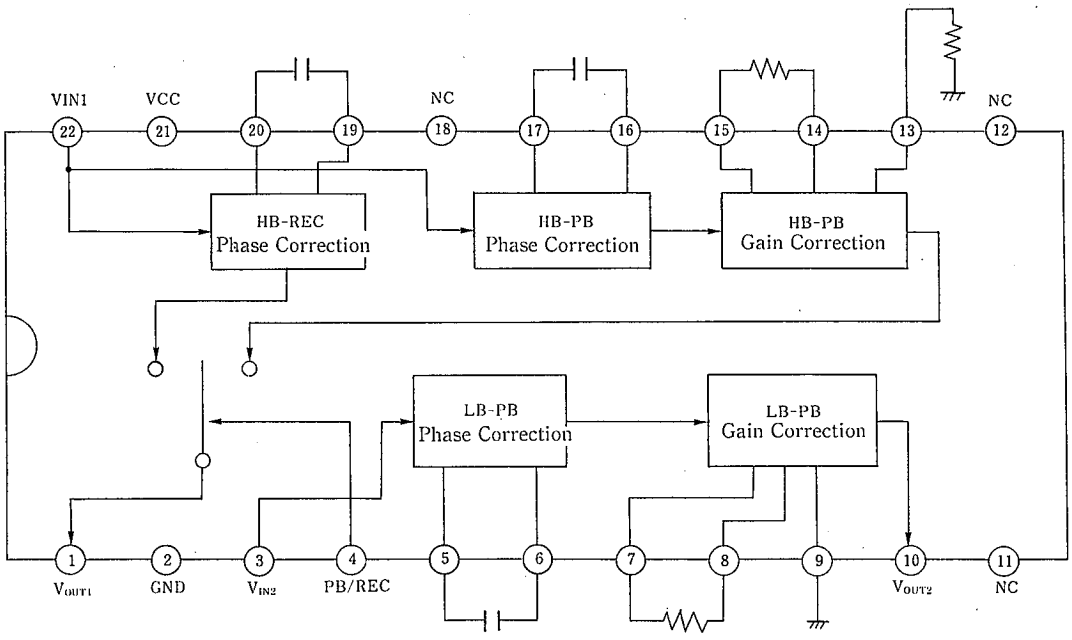
■ FEATURES

- 5V Spec, (Recommended Operating Voltage Range)
- Wide Band Width, 10MHz
- REC/PLAYBCK Change over function attached
- Package Outline SDIP22
- Bipolar Technology

■ Application

- VCR (S-VHS compatible)
- Video Camera
- Laser Disc

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	7	V
Power Dissipation	P_D	700	mW
Operating Temperature Range	T_{opr}	−20~+75	℃
Storage Temperature Range	T_{stg}	−40~+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+=5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I_D	No Signal		26	34	mA
HB-REC						
Phase Positive Gain	G_{af}	f_{IN}=100KHz 19PINOUT	−1	0	+1	dB
Phase Negative Gain	G_{ar}	f_{IN}=100KHz 20PINOUT	−6.4	−5.4	−4.4	dB
19pin Impedance	AT19	f_{IN}=100KHz	−7.0	−6.0	−5.0	dB
Output Gain LOW	G_{al}	f_{IN}=100kHz	−1	0	+1	dB
Output Gain HIGH	G_{ah}	f_{IN}=5MEGHz	−1	0	+1	dB
Output Gain f Feature	ΔG_a	Gah-Gal	−1	0	+1	dB
Output Secondary Distortion	DA2	f1IN=5MEG v_{IN}=1.0V_{pp}		−40	−30	dB
Output the third Distortion	DA3	f_{IN}5MEG v_{IN}=1.0V_{pp}		−36	−30	dB
HB-PB						
Positiv Phase Gain	G_{bf}	f_{IN}=100KHz 16PINOUT	−1	0	+1	dB
Negative Phase Gain	G_{br}	f_{IN}=100KHz 17PINOUT	−0.2	0.8	1.8	dB
16 Impedance	AT16	f_{IN}=100KHz	−7.0	−6.0	−5.0	dB
Output Gain	G_{ca}	f_{IN}=100KHz	−6.1	−5.0	−4.0	dB
15-14 Impedance	ΔG_c	15PIN-14PIN=1.7KΩ	4.5	5.5	6.5	dB
Output Gain LOW	G_{cbl}	f_{IN}=100KHz	−1	0	+1	dB
Output Gain HIGH	G_{cbh}	f_{IN}=5MEGHz	2	3	4	dB
Output Gain f Feature	ΔG_b	Gcbh-Gcbl	2	3	4	dB
Output Secondary Distortion	DC2	f_{IN}=5MEG v_{IN}=1.0V_{pp}		−30	−25	dB
Output the third Distortion	DC3	f_{IN}=5MEG v_{IN}=1.0V_{pp}		−27	−22	dB
LB-PB						
Positive Phase Gain	D_{df}	f_{IN}=100KHz 6PINOUT	−1	0	+1	dB
Negative Phase Gain	G_{dr}	f_{IN}=100KHz 5PINOUT	−0.2	0.8	1.8	Db
6 Impedance	AT6	f_{IN}=100KHz	−7.0	−6.0	−5.0	dB
Output Gain	G_{da}	f_{IN}=100KHz	−6.1	−5.1	−4.1	dB
7-8 Impedance	ΔG_d	7PIN-8PIN=1.7KΩ	4.5	5.5	6.5	dB
Output Gain LOW	G_{ebl}	f_{IN}=100KHz		+1	0	dB
Output Gain HIGH	G_{ebh}	f_{IN}=5MEGHz	−1	0	+1	dB
Output Gain f Feature	ΔG_e	Gebh-Gebl	−1	0	+1	dB
Output Secondary Distortion	DE2	f_{IN}=5MEG v_{IN}=1.0V_{pp}		−35	−28	dB
Output the third Distortion	DE3	f_{IN}=5MEG v_{IN}=1.0V_{pp}		−36	−30	dB

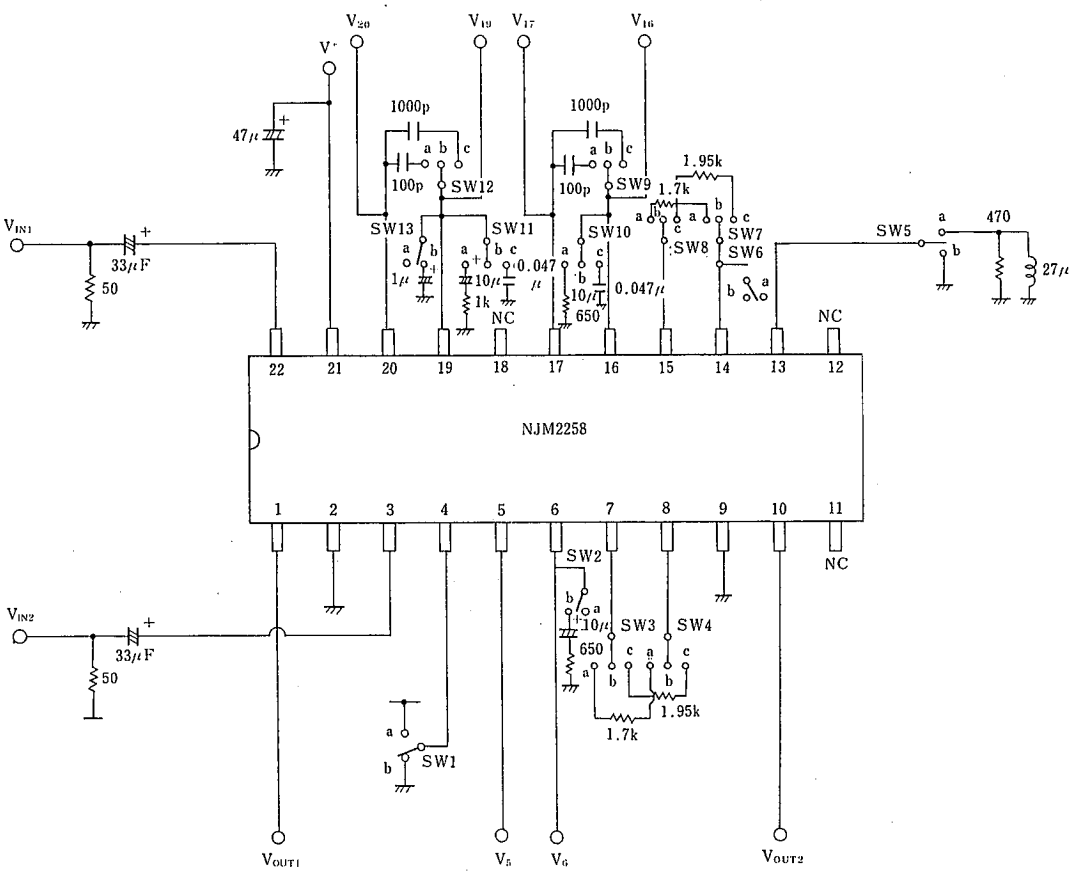
■ TERMINAL FUNCTION

PIN	PIN NAME	SYMBOL	FUNCTION
1	HB-REC/PB OUT	VOUT1	HB type (S-VHS) Correction Output Pin
2	GND	GND	Ground
3	LB-PB IN	VIN2	LB type, (VHS) play-back signal Input Pin
4	HB-REC/PB Change over	PB REC	HB type, Change-over output of REC signal or Play-back signal High makes play-back signal output, and low makes REC signal output.
5	LB-PB Phase Correction Pin 1	LPC1	Connecting Capacitor between Pin 5~6, which helps to give feature of correcting the group delay.
6	LB-PB Phase Correction Pin 2	LPC2	Connecting Capacitor between Pin 5~6, which helps to give feature of correcting the group delay.
7	LB-PB Gain Correction Pin 1	LGC1	Setting up Gain by eonnecting resistor between Pin 7~8.
8	LB-PB Gain Correction Pin 2	LGC2	Setting up Gain by eonnecting resistor between Pin 7~8.
9	LB-PB Gain Correction Pin 3	LP	Connecting L-C parallel resonance between pin 9~GND, helps to give High band keeping, and if not required of keeping connect to GND.
10	LB-PB OUT	VOUT2	LB type Output pin
11	N.C		N.C pin
12	N.C		N.C pin
13	LB-PB Gain Correction Pin 3	HP	Connecting L-C parallel resonance between pin 13~GND, helps to give High band keeping, and if not required of keeping connect to GND.
14	LB-PB Gain Correction Pin 2	HPG1	Setting up Gain by eonnecting resistor between Pin 14~15.
15	LB-PB Gain Correction Pin 1	HPG2	Setting up Gain by eonnecting resistor between Pin 14~15.
16	LB-PB Phase Correction Pin 2	HPC1	Connecting Capacitor between Pin 16~17, which helps to give feature of correcting the group delay.
17	LB-PB Phase Correction Pin 1	HPC2	Connecting Capacitor between Pin 16~17, which helps give feature of correcting the group delay.
18	N.C		N.C pin
19	LB-PB Phase Correction Pin 2	HRC1	Connecting Capacitor between Pin 19~20, which helps to give feature of correcting the group delay.
20	LB-PB Phase Correction Pin 1	HRC2	Connecting Capacitor between Pin 19~20, which helps to give feature of correcting the group delay.
21	V^+	V_{CC}	Voltage Source.
22	HB-REC/PB IN		HB type Input pin.

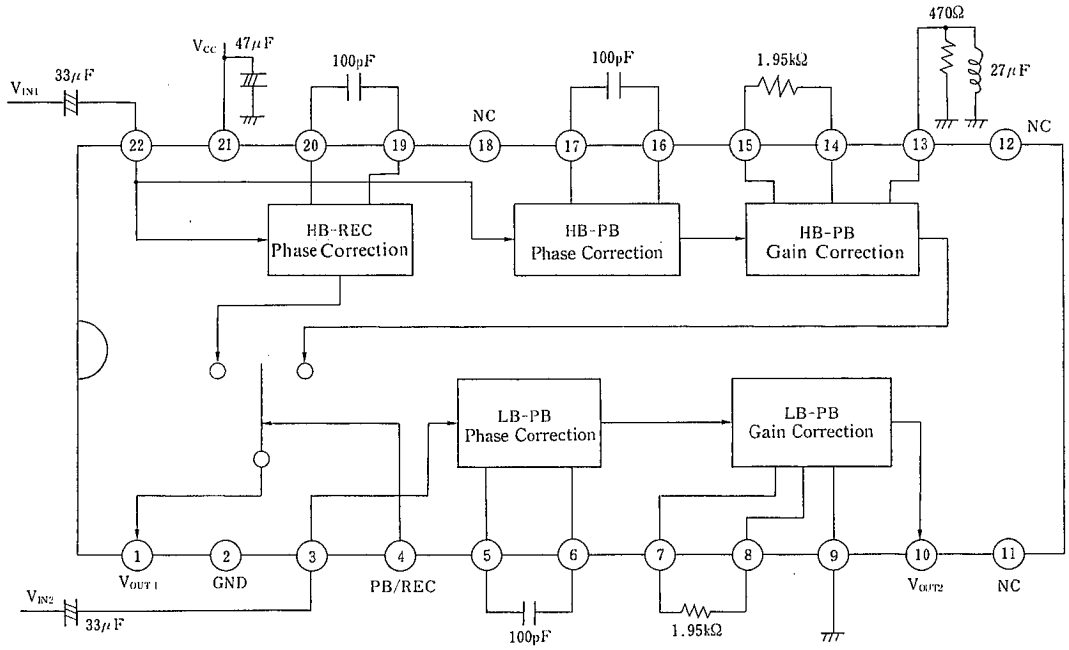
■ TEST CONDITION

PARAMETER	SW－CONDITION													TEST PIN	TEST CONDITION
	1	2	3	4	5	6	7	8	9	10	11	12	13		
I_P	a	a	b	b	b	a	b	b	b	b	b	b	a		
GAf	b													V19	f=100kHz, V=0.5V_{PP}
GAr													b	V20	f=100kHz, V=0.5V_{PP}
AT19											a		a	V19	f=100kHz, V=0.5V_{PP}
Gal											b	a		VOUT1	f=100kHz, V=0.5V_{PP}
Gah											b	a		VOUT1	f=5MHz, V=0.5V_{PP}
DA2												c		VOUT1	f=5MHz, V=1.0V_{PP}
DA3												c		VOUT1	f=5MHz, V=1.0V_{PP}
Gbf														V16	f=100kHz, V=0.5V_{PP}
Gbr														V17	f=100kHz, V=0.5V_{PP}
AT16										a				V16	f=100kHz, V=0.5V_{PP}
Gca	a								a	b				VOUT1	f=100kHz, V=0.5V_{PP}
△Gca							a	a						VOUT1	f=100kHz, V=0.5V_{PP}
Gcbl					a		c	c						VOUT1	f=100kHz, V=0.5V_{PP}
Gcbh					a		c	c						VOUT1	f=5MHz, V=0.5V_{PP}
DC2					b		c	c	c					VOUT1	f=5MHz, V=1.0V_{PP}
DC3					b		c	c	c					VOUT1	f=5MHz, V=1.0V_{PP}
Gdf	a										b	a		V6	f=100kHz, V=0.5V_{PP}
Gdr														V5	f=100kHz, V=0.5V_{PP}
AT6		b												V6	f=100kHz, V=0.5V_{PP}
Gda		a												VOUT2	f=100kHz, V=0.5V_{PP}
△Gd			a	a										VOUT2	f=100kHz, V=0.5V_{PP}
Gebl			c	c										VOUT2	f=100kHz, V=0.5V_{PP}
Gebh			c	c										VOUT2	f=5MHz, V=0.5V_{PP}
DE2			c	c										VOUT2	f=5MHz, V=1.0V_{PP}
DE3			c	c										VOUT2	f=5MHz, V=1.0V_{PP}

■ TEST CIRCUIT



■ APPLICATION CIRCUIT



5

MEMO