

# LA7282, 7282M

# VCR Audio Signal Recording / Playback Processor

#### Overview

The LA7282 and 7282M are small package ICs containing all functions necessary to record and playback VCR audio signal.

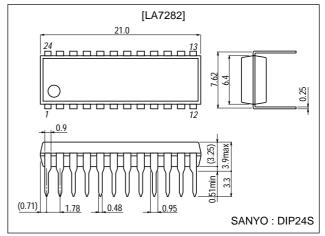
#### **Features**

- Small package leaves large space for other components.
- Delete of In and Output electrolysis capacitor.
- Low capacitor  $(0.1\mu F)$  for the line amplifier inputs (PB IN and AUDIO IN)
- Non-Adjustment of PB Gain by less gain scatter.

## **Package Dimensions**

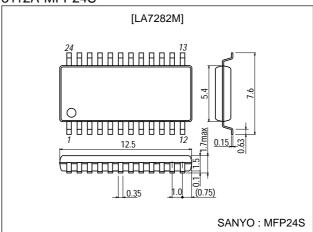
unit:mm

3067A-DIP24S



unit:mm

#### 3112A-MFP24S



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# **Specifications**

### **Maximum Ratings** at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Maxumum supply voltage	V <sub>CC</sub> max		14	V
Pin 1 input voltage	V <sub>IN1</sub>	Ta=65°C, f=80kHz (sin), I <sub>LK</sub> =10μA	90 (±45)	Vp-p
Pin 1 input current	I <sub>IN1</sub>		±1.5	mA
Allowable power dissipation	Pd max	Ta≤65°C, when mounted on the recommended PCB	400	mW
Operating temperature	Topr		-10 to +65	°C
Storage temperature	Tstg		-55 to +125	°C

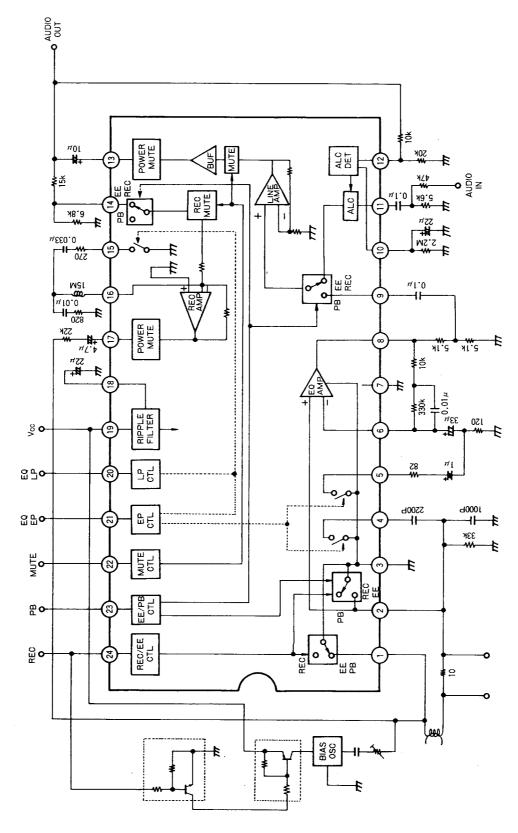
## Operating Conditions at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	Vcc		12.0	V
Operating voltage range	Vcc op		11.25 to 12.75	V

## Operating Characteristics at $Ta=25^{\circ}C,\,V_{CC}=12V,\,f=1kHz,\,0dBv=:1.0Vrms$

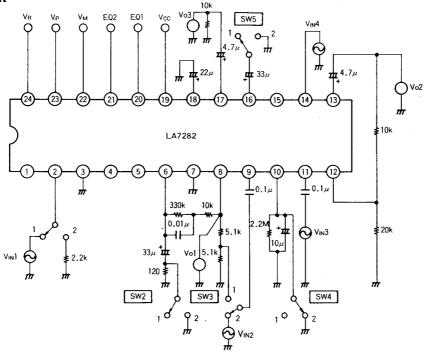
Description	0	O an distant		Ratings		
Parameter	Symbol	Conditions	min	typ	max	Unit
Current drain (FE)	ICCE	Quiescent	8.0	12.0	17.0	mA
Current drain (PB)	I <sub>CCP</sub>	Quiescent	9.0	13.0	18.0	mA
Current drain (REC)	ICCR	Quiescent	7.0	10.0	14.0	mA
Overall gain at PB mode	VG <sub>PB</sub>	EQ IN-LINE OUT, V <sub>O</sub> =-5dBv	59.0	59.5	60.0	dB
[Equalizing amplifier]						
Open loop voltage gain	VG <sub>OE</sub>	V <sub>O</sub> =-5dBv	66.0	71.0		dB
Equivalent input noise voltage	VNIE	Rg=2.2kΩ, DIN audio filter		1.2	1.8	μVrms
Input impedance	Z <sub>INE</sub>			130		kΩ
[Line amplifier]	•					
Voltage gain (PB IN)	VG <sub>LP</sub>	V <sub>O</sub> =-5dBv	21.0	21.5	22.0	dB
Voltage gain (EE, REC IN)	VG <sub>LR</sub>	V <sub>O</sub> =-5dBv	21.0	21.5	22.0	dB
Total harmonic distortion	THDL	V <sub>O</sub> =-5dBv		0.3	0.5	%
Output noise voltage	V <sub>NOL</sub>	DIN audio filter		-70.0	-64.0	dBv
Input impedance (PB IN)	Z <sub>IN1</sub>			120		kΩ
Input impedance (EE, REC IN)	Z <sub>IN2</sub>			120		kΩ
Maximum output voltage	VOML	THD=3%	1.5	2.1		Vrms
Output voltage at ALC	VOA	V <sub>IN</sub> =-28dBv	-9.0	-8.0	-7.0	dBv
ALC Effect	ALC	V <sub>IN</sub> =-28 to -8dBv		1.5	3.0	dB
Total harmonic distortion at ALC	THDA	V <sub>IN</sub> =–28dBv		0.25	0.6	%
[Recording amplifier]	1	1 22	'			
Voltage gain (open loop)	VGOR	V <sub>O</sub> =-5dBv	47.0	52.0		dB
Voltage gain (closed loop)	VG <sub>CR</sub>	V <sub>O</sub> =-5dBv	12.5	13.0	13.5	dB
Total harmonic distortion	THDR	V <sub>O</sub> =-5dBv		0.1	0.3	%
Input impedance	Z <sub>INR</sub>			50		kΩ
Maximum output voltage	ZOMR	THD=3%	1.5	2.0		Vrms
[Muting circuit]	, , , , , , , , , , , , , , , , , , , ,		<u> </u>			
On voltage	VMON	Pin 22, DC	3.8		6.0	V
Off voltage	VMOFF	Pin 22, DC	0		1.0	V
Mute attenuation level (PB, EE)	Mp, ME		80.0	90.0		dB
Mute attenuation level (REC)	M <sub>R</sub>		65.0	70.0		dB
[PB/EE selector circuit]						
PB mode hold voltage	V <sub>PP</sub>	Pin 23, DC	0		1.0	V
EE mode hold voltage	VPE	Pin 23, DC	3.3		6.0	V
[REC/EE selector circuit]	I	· ·	I			
REC mode hold voltage	V <sub>RR</sub>	Pin 24, DC	3.3		VCC	V
EE mode hold voltage	V <sub>RE</sub>	Pin 24, DC	0		1.0	V
[Equalizer selector circuit]	1112	1				
Switch on voltage	V <sub>EON</sub>	Pin 20, 21, DC	3.5		6.0	V
Switch off voltage	VEOFF	Pin 20, 21, DC	0		0.8	V
[Head selector switch]	1 2011	1	I	1		
Pin 1 on resistance	R <sub>ON1</sub>	I1=±1mA		15	30	Ω
Pin 2 on resistance	R <sub>ON2</sub>	I2=±1mA		5	10	Ω
Pin 1 input voltage	V <sub>IN1</sub>	Ta=65°C, f=80kHz (sin), ILK=10μA			±45	V

## **Block Diagram**



Unit (resistance :  $\Omega$ , capacitance : F)

#### **Test Circuit**

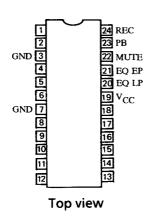


Unit (resistance :  $\Omega$ , capacitance : F)

#### <Switch Setting Table>

Parameter (Symbol)	SW1	SW2	SW3	SW4	SW5	VΜ	V <sub>P</sub>	V <sub>R</sub>	Input	Measurement
ICCE	2	1	1	2	1	GND	5V	GND	-	А
ICCP	2	1	1	2	1	GND	GND	GND	-	А
ICCR	2	1	1	2	1	GND	5V	5V	-	А
VG <sub>PB</sub>	1	1	1	2	1	GND	GND	GND	V <sub>IN</sub> 1	V <sub>O</sub> 2
VG <sub>OE</sub>	1	2	2	2	1	GND	GND	GND	V <sub>IN</sub> 1	V <sub>O</sub> 1
V <sub>NIE</sub>	2	1	2	2	1	GND	GND	GND	-	V <sub>O</sub> 1
VG <sub>LP</sub> , THD <sub>L</sub> , V <sub>OML</sub>	2	1	2	2	1	GND	GND	GND	V <sub>IN</sub> 2	V <sub>O</sub> 2
VGLR	2	1	1	2	1	GND	5V	GND	V <sub>IN</sub> 3	V <sub>O</sub> 2
V <sub>NOL</sub>	2	1	2	2	1	GND	5V	GND	-	V <sub>O</sub> <sup>2</sup>
V <sub>OA</sub> , ALC, THD <sub>A</sub>	2	1	2	1	1	GND	5V	GND	V <sub>IN</sub> 3	V <sub>O</sub> <sup>2</sup>
VGOR	2	1	2	2	2	GND	5V	GND	V <sub>IN</sub> 4	V <sub>O</sub> 3
VGCR, THDR, VOMR	2	1	2	2	1	GND	5V	GND	V <sub>IN</sub> 4	V <sub>O</sub> 3
MP	1	1	1	2	1	5V	GND	GND	V <sub>IN</sub> 1	V <sub>O</sub> 2
MR	2	1	1	2	1	5V	5V	GND	V <sub>IN</sub> 4	V <sub>O</sub> 3
ME	2	1	2	2	1	5V	5V	GND	V <sub>IN</sub> 2	V <sub>O</sub> 2

## **Pin Assignment**



## LA7282, 7282M

### **Pin Functions** Unit (resistance : $\Omega$ )

Head Switch 1	Din No	Function	Towning Circuit	Description
Connecting this problem.  Connecting this price is 100, type.  With stand voltage during off 1:45V (1=80M4z) Imput physical signal to the head Imput physical signal to the SCAMP and playback EP switch.  Common return for all circuits except for EQ AMP and playback EP mode) Imput impedance: 1200, typ. (playback EP mode) Imput physical section in the SCAMP to establish desired equalizing Imput PS signal to the EQ AMP. The imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP. The imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP. The imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP. The imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP and head switch 1.  Input PS signal to the EQ AMP and head switch 1.  Input PS signal to the EQ AMP imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP imput impedance of pin 9 is high (120k1) Input PS signal to the EQ AMP imput impedance of pin 9 is high (120k1) Imput Imput Impedance of pin 11 is high (120k1) Imput Imput Impedance of pin 11 is high (120k1) Imput Impedance of pin 11 is high (120k1) Imput Impedance of pin 11 is high (120k1) Imput Imput Impedance of pin 11 is high (120k1	Pin No.	Function	Terminal Circuit	Description
2 EQ AMP Input and Switch 2	1			On resistance : $10\Omega$ , type.
and Head Switch 2    Per Net Co. on y Ps of the Switch of resistance : 500, typ.	2	EQ AMP Input	0 8 8 8	
Switch on resistance: 50, typ.  An exclusive GND for pin 1 head switch 1, EQ AMP and playback EP switch.  Sets the tage head resonant frequency. On resistance: 150, typ. Input directions: 120/GL, typ. (playback EP mode) Increases the voltage gan at higher frequencies by reducing negative feedback amount of the PB EG AMP. On resistance: 150, typ. Input of regative feedback of the EQ AMP to establish desired equalizing characteristics.  Figure PB signal to the EQ AMP.  Common return for all circuits except for EQ AMP and head switch 1.  Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kg) and requires a small coupling capacitor of 0.1 pir.  ALC FILTER  Commodified sets affect recovery time.  Input EE, REC signal.  Rec AMP Audio Input  LINE		and	999	Input impedance : 130kΩ, typ.
3 GND  An exclusive GND for pin 1 head switch 1, EQ AMP and playback EP switch.  Sets the tape head resonant frequency.  Or resistance: 150 tbp. Input impedance: 120kt2, tp. (playback EP mode) Input frequence: 120kt2, tp.		Head Switch 2		
3 GND  An exclusive GND for pin 1 head switch 1, EQ AMP and playback EP switch.  An exclusive GND for pin 1 head switch 1, EQ AMP and playback EP switch.  Sets the tape head resonant requency. On resistance: 150, typ. Input impedance: 150, typ. On resistance: 150, typ. Input of negative feedback of the EQ AMP to establish desired equalizing characteristics.  7 GND  7 GND  8 EQ AMP Output  9 LINE AMP PB Input  10 ALC FILTER  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  11 LINE AMP Audio Input  12 ALC Detect Input  12 ALC Detect Input  13 LINE AMP Output  14 REC AMP input  15 PS witch 1  16 PS witch 2  17 Set of the EQ AMP input  18 Set of table set for 21.5dB. The input impedance of pin 11 is high (120kd) and requires a small coupling capacitor of the ALC. The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kd) and requires a small coupling capacitor of the ALC. The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kd) and requires a small coupling capacitor of the ALC. The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kd) and requires a small coupling capacitor of the ALC. The amplifier gain should be set for 21.5dB. The ALC clevel is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  Output impedance: 50Ω, typ.  14 REC AMP input  15 Input tercording signal from LINE AMP. Input correct is set by the divider consisting of R <sub>1</sub> and R <sub>2</sub> . Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.				Owition on resistance . 352, typ.
Sets the tap head resonant frequency.  The substance of ESD ANP.  Sets the tap head resonant frequency.  The residence of ESD ANP.  Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PE ESD AMP.  Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PE ESD AMP.  Increases the voltage gain at higher frequencies by reducing negative feedback and the ESD AMP. The imput impedance of Description of the ESD AMP to establish desired equalizing characteristics.  The ALC AMP Output  Input PB signal to the ESD AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1 µF.  Input PB signal to the ESD AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1 µF.  Input EE, REC signal.  REC AMP Audio  Input EE, REC signal.  REC AMP Input  Input EE, REC signal.  REC AMP Input  ACCEPTATE Coupling of PR and Recoupling of PR and Recoupling capacitor of 0.1 µF.  Input target output signal of LINE amplifier.  The ALC level is determined by the voltage divider consisting of R1 and Recoupling capacitor and Recoupling capacitor of pin 11 is high (120kΩ) and requires a small coupling capacitor of D1.1 µF.  Input recording signal from LINE AMP.  Input recording signal from LINE AMP.  Input capacitor coupling capacitor consisting of R1 and Recoupling capacitor coupling capacitor consisting of R1 and Recoupling capacitor coupling capacitor consisting of R1 and Recoupling capacitor consisting capacitor capaci			₹130 k	
Sets the tap head resonant frequency.  The substance of ESD ANP.  Sets the tap head resonant frequency.  The residence of ESD ANP.  Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PE ESD AMP.  Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PE ESD AMP.  Increases the voltage gain at higher frequencies by reducing negative feedback and the ESD AMP. The imput impedance of Description of the ESD AMP to establish desired equalizing characteristics.  The ALC AMP Output  Input PB signal to the ESD AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1 µF.  Input PB signal to the ESD AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1 µF.  Input EE, REC signal.  REC AMP Audio  Input EE, REC signal.  REC AMP Input  Input EE, REC signal.  REC AMP Input  ACCEPTATE Coupling of PR and Recoupling of PR and Recoupling capacitor of 0.1 µF.  Input target output signal of LINE amplifier.  The ALC level is determined by the voltage divider consisting of R1 and Recoupling capacitor and Recoupling capacitor of pin 11 is high (120kΩ) and requires a small coupling capacitor of D1.1 µF.  Input recording signal from LINE AMP.  Input recording signal from LINE AMP.  Input capacitor coupling capacitor consisting of R1 and Recoupling capacitor coupling capacitor consisting of R1 and Recoupling capacitor coupling capacitor consisting of R1 and Recoupling capacitor consisting capacitor capaci			111 111 111	
On resistance: 1364 typ. (playback EP mode)  Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PB EQ AMP.  Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PB EQ AMP.  Input Impedance: 1364.5 typ. (playback EP mode)  Input of negative feedback of the EQ AMP to establish desired equalizing characteristics.  The amplitude of the EQ AMP and head switch 1.  Input EB aignal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1 μF.  Input EE, REC signal.  Input EE, REC signal.  Input EE, REC signal.  The amplifier gain should be set for 21.58 the shoulder of the ALC.  The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1 μF.  ALC Detect Input  ALC Detect Input  Input EE, REC signal.  The amplifier gain should be set for 21.58 the shoulder of the ALC.  The ALC Input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1 μF.  ALC Detect Input  REC AMP Input  Input EE, REC signal from LINE AMP.  The ALC Invet is determined by the voltage divider consisting of R1 and R2.  Provided the set for 21.58 the pinut current is set by the divider consisting of R1 and R2.  Pinut recording signal from LINE AMP.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R2.  Pinut recording amplifier.				An exclusive GND for pin 1 head switch 1, EQ AMP and playback EP switch.
Input impedance : 120isQ, typ. (playback EP mode)   Increases the voltage gain at higher frequencies by reducing negative feedback amount of the PB EO AMP. On resistance: 150t, typ. (playback EP mode)   Input impedance: 150t, typ.	4	EP Switch 1	<u> </u>	
amount of the PB EG AMP. Or resistance: 1562, Np. Input impedance: 1562, Np. Input impedance of the EQ AMP to establish desired equalizing characteristics.  To GND  Common return for all circuits except for EQ AMP and head switch 1.  Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Select value of R₁ and R₂ so that the reference input is at the shoulder of the ALC. The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ACcepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R₁ and R₂.  Output impedance: 5002, typ.  Input recording signal from LINE AMP. Input current is set by the divider consisting of R₁ and R₂.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			120k #	
On resistance: 1563, typ. (playback EP mode) Input impedance of the EQ AMP to establish desired equalizing characteristics.  7 GND  7 GND  8 EQ AMP Output  9 LINE AMP PB Input Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  10 ALC FILTER  11 LINE AMP Audio Input Input ER. REC signal. Input ER. REC signal. Input ER. appears to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  12 ALC Detect Input  13 LINE AMP Output  14 REC AMP Input  15 ARC AMP Input  16 ARC AMP Input  17 ARC Detect Input  18 ARC AMP Input  19 Input recording signal from LINE AMP. Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP. Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP. Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP. Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP. Pin 14 requires no coupling capacitor since REC AMP. Pin 14 requires no coupling capacitor since REC AMP. Pin 14 requires no coupling capacitor since REC AMP. Pin 14 requires no coupling capacitor since REC AMP. Pin 14 requires no coupling capacitor since REC AMP. Pin 14 requires and as inverting amplifier.	5	EP Switch 2	(5)	Increases the voltage gain at higher frequencies by reducing negative feedback
Input impedance: 12k\(\text{A}\), \text{ yp. (playback EP mode)}			12k \$	
fingut of negative feedback of the EQ AMP to establish desired equalizing characteristics.  7 GND  8 EQ AMP Output  9 LINE AMP PB Input  10 ALC FILTER  11 LINE AMP Audio Input  12 ALC Detect Input  12 ALC Detect Input  13 LINE AMP Output  14 REC AMP Input  15 Select MP Input  16 ALC Detect Input  17 ACC Detect Input  18 ALC Detect Input  19 ALC Detect Input  10 ALC PILTER  10 ALC Detect Input  11 LINE AMP Output  12 ALC Detect Input  13 LINE AMP Output  14 REC AMP Input  15 ALC Detect Input  16 ALC Detect Input  17 ACCEPTATE ACCEPTATE OF 12 SIB.  18 The input impedance of pin 11 is high (120kLI) and requires a small coupling capacitor of 0.1 µF.  19 ALC Detect Input  10 ALC Detect Input  11 ALC Detect Input  12 ALC Detect Input  13 LINE AMP Output  14 REC AMP Input  15 Input recording signal from LINE AMP.  16 Input recording signal from LINE AMP.  17 Input accepts the output signal of LINE amplifier.  18 ACCEPTATE The AMP Output  19 Input recording signal from LINE AMP.  19 Input accepts the output signal of LINE amplifier.  19 Input recording signal from LINE AMP.  10 Input accepts the output signal of LINE amplifier.  11 Input recording signal from LINE AMP.  11 Input accepts the output signal of LINE amplifier.  12 ACCEPTATE The AMP Output  13 Input recording signal from LINE AMP.  14 REC AMP Input  15 Input accepts the output signal of LINE amplifier.  16 Input accepts the output signal of LINE amplifier.  17 Input accepts the output signal of LINE AMP.  18 Input accepts the output signal of LINE AMP.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the output signal of R1 and R2.  19 Input accepts the accepts the AMP.  19 Input accepts the accepts the AMP.  19 Input accepts the AMP.  19 Input			<i>יו</i> ר אר	
Common return for all circuits except for EQ AMP and head switch 1.  Page 1	6	EQ AMP NFB		1 1 1 1 1
Common return for all circuits except for EQ AMP and head switch 1.    Select value of R₁ and R₂ so that the reference input input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.    Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.    Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.    Input EE, REC signal.			9 9 9	
Common return for all circuits except for EQ AMP and head switch 1.    Select value of R₁ and R₂ so that the reference input input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.    Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.    Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.    Input EE, REC signal.				
Common return for all circuits except for EQ AMP and head switch 1.    Select value of R₁ and R₂ so that the reference input input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.    Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.    Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.    Input EE, REC signal.			'	
Select value of R₁ and R₂ so that the reference input input impedance of pin 9 is high (120kΩ)			<i>₩ ₩</i>	
Select value of R₁ and R₂ so that the reference input input impedance of pin 9 is high (120kΩ)		ON D		
Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  Recepts the output signal of LINE amplifier.  ALC Detect Input  ALC Detect Input  Recepts the output signal of LINE amplifier.  The ALC level is determined by the voltage divider consisting of R₁ and R₂.  Output impedance: 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R₁ and R₂.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			1	Common return for all circuits except for EQ AMP and head switch 1.
Input PB signal to the EQ AMP. The input impedance of pin 9 is high (120kΩ) and requires a small coupling capacitor of 0.1 μF.  10 ALC FILTER  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  Recomplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1 μF.  ALC Detect Input  ALC Detect Input  Recomplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1 μF.  ACCEPTS the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R₁ and R₂.  Output impedance: 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R₁ and R₂.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	8	EQ AMP Output	<u></u>	
and requires a small coupling capacitor of 0.1μF.  10 ALC FILTER  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  R1 Select value of R1 and R2 so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ALC Detect Input  ALC Detect Input  ALC Detect Input  R1 ACCEPTS the output signal of LINE amplifier.  The ALC level is determined by the voltage divider consisting of R1 and R2.  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.			® <b>─∮</b> `	
and requires a small coupling capacitor of 0.1μF.  10 ALC FILTER  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  R1 Select value of R1 and R2 so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ALC Detect Input  ALC Detect Input  ALC Detect Input  R1 ACCEPTS the output signal of LINE amplifier.  The ALC level is determined by the voltage divider consisting of R1 and R2.  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.			₽	
and requires a small coupling capacitor of 0.1μF.  10 ALC FILTER  Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  R1 Select value of R1 and R2 so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ALC Detect Input  ALC Detect Input  ALC Detect Input  R1 ACCEPTS the output signal of LINE amplifier.  The ALC level is determined by the voltage divider consisting of R1 and R2.  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.  R1 Input current is set by the divider consisting of R1 and R2.			m ·	
Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  LINE AMP Audio Input  Input EE, REC signal.  Input EE, REC signal.  R1  R2  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  Accept the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R₁ and R₂.  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	9		J	
Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  RI Select value of R1 and R2 so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ACCEPTS the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R1 and R2.  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.		Input	<b>→</b>	and requires a small coupling capacitor of 0.1µF.
Connecting this pin to GND through a capacitor enables detection. The RC time constant sets attack recovery time.  Input EE, REC signal.  RI Select value of R1 and R2 so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ACCEPTS the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R1 and R2.  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.			120k	
Input EE, REC signal.  Input EE, REC signal.  RI			9 <sup></sup> 6	
Input EE, REC signal.  Input EE, REC signal.  RI			<u> </u>	
Input EE, REC signal.  Input EE, REC signal.  RI	40	ALC EU TED		Occupation this piets CND through a consider such leaders time. The DO time
Input EE, REC signal.  Input EE, REC signal.  R1 Select value of R1 and R2 so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ALC Detect Input  ALC Detect Input  R1 Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R1 and R2.  Output impedance: 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	10	ALC FILTER		
Input EE, REC signal.  Input EE, REC signal.  R1  R2  R2			200	
Input EE, REC signal.  Input EE, REC signal.  R1 R2 R1 R2 R1 R2				
Select value of R <sub>1</sub> and R <sub>2</sub> so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ACC Detect Input  R1			50k	
Select value of R <sub>1</sub> and R <sub>2</sub> so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ACC Detect Input  R1			""	
Select value of R <sub>1</sub> and R <sub>2</sub> so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ACC Detect Input  R1	11	LINE AMP Audio		Input FF_RFC signal
Select value of R <sub>1</sub> and R <sub>2</sub> so that the reference input is at the shoulder of the ALC.  The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R <sub>2</sub> .  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			.J m	R1
The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP. Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			<b>玉</b> 丫,	Select value of R <sub>1</sub> and R <sub>2</sub> so that the reference input
The amplifier gain should be set for 21.5dB. The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  ALC Detect Input  Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R₁ and R₂.  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R₂.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			1204	R2# Is at the shoulder of the ALC.
The input impedance of pin 11 is high (120kΩ) and requires a small coupling capacitor of 0.1μF.  Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			Á Á	<i>III</i>
Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  13 LINE AMP Output  Output impedance : 50Ω, typ.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			Ĭ Ĭ	
Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  13 LINE AMP Output  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP. Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			III III	
Accepts the output signal of LINE amplifier. The ALC level is determined by the voltage divider consisting of R <sub>1</sub> and R <sub>2</sub> .  13 LINE AMP Output  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP. Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	12	ALC Detect Input	1	
13 LINE AMP Output  Output impedance: 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R2.  R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.				7000pts the output signal of Envir ampliner.
13 LINE AMP Output  Output impedance : 50Ω, typ.  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			-   <b>]</b> ''	
REC AMP Input  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			120k 🛊	consisting of $\kappa_1$ and $\kappa_2$ .
REC AMP Input  Input recording signal from LINE AMP.  Input current is set by the divider consisting of R1 and R2.  Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			म म	<i>т т</i>
Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	13	LINE AMP Output	7	Output impedance : $50\Omega$ , typ.
Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			(3	
Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			₩ <b>—</b>	
Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			<b>**</b>	
Input current is set by the divider consisting of R1 and R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	1/1	REC AMP Input		Input recording signal from LINE AMP
R2. Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.	14	INCO AIMF IIIput		
Pin 14 requires no coupling capacitor since REC AMP is to operate at zero level and as inverting amplifier.			38k (14)————————————————————————————————————	
is to operate at zero level and as inverting amplifier.			124	Pin 14 requires no coupling capacitor since REC AMP
			मं मं	

Continued on next page.

## LA7282, 7282M

Continued from preceding page.

Unit (resistance :  $\Omega$ )

Pin No.	Function	Terminal Circuit Description								
15	LP Switch	15 60k	Sets the high peaking point to the frequency suitable for LP. On resistance : $15\Omega$ typ. Input impedance : $60\text{k}\Omega$ typ.							
16	REC AMP NFB	16 RNF RE 1.5k	Connecting an L, C, R network to this pin causes a peaking frequency to rise.							
17	REC AMP Output	13	Output impedance : 40Ω typ.							
18	Ripple Filter	Each AMP Vcc (B)	Connecting a electrolytic capacitor across this pin and GND smoothes ripples.							
19	Supply Voltage		V <sub>CC</sub> =15V max							
20	(VCC) LP Control	20 10k 1 100k 1 1 1 1 1 1 1 1 1 1 1 1 1 1	VCC=11.25 - 12.75V typ.  Applying 3.5V DC or more (6.0V max) to this pin turns on LP switch (pin 15). The switch turns off at 0.8V or below.							
21	EP Control	21 10k	Applying 3.5V DC or more (6.0V max.) to this pin turns on EP switch (pin 4, 5) and LP switch (pin 15). The switches turn off at 0.8V or below.							
22	MUTE Control		Applying 3.8V DC or more mute is desabled at 1.0V of [Control mode]		his pin turns o	on mute circuit. The				
			Mod-	MUTE [L]	МИТ	E [H]				
		22 10k	Mode LINE A	MP REC AMP	LINE AMP	REC AMP				
			PB Mode O	×	×	×				
		100k	EE Mode O	0	×	×				
		<del>, , , , , , , , , , , , , , , , , , , </del>	REC Mode O	0	0	×				
			[O: Pas	s signal, × : Bloc	к signal]					
23	PB Control	23 10k	Applying 3.3V DC or more below PB mode.	(6.0V max.) to t	his pin enters	EE mode and 1.0V or				
24	REC Control	20 10k	Applying 3.0V DC or more or below EE mode.	(up to VCC) to t	his pin enters	REC mode and 1.0V				

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