

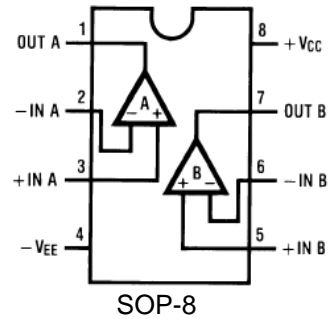
Dual channel audio operational amplifier

Summary

LM833 is a dual-channel audio operational amplifier, especially suitable for audio and data signal applications. The device can work in a wide range of single and dual power supply voltages, low noise, high gain bandwidth and high conversion rate. It has the characteristics of low noise voltage, high conversion rate, low distortion and large phase margin.

LM833 is available in DIP8 and SOP8 packages.

Pin description



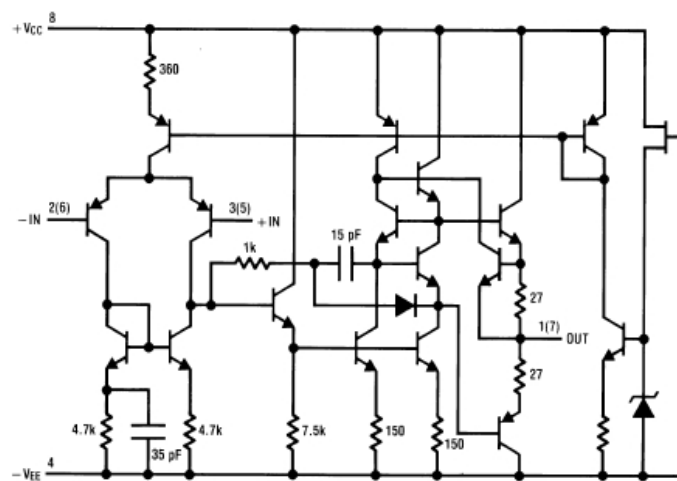
Characteristic

- Dual power supply voltage: $\pm 15\text{ V}$
- Low noise voltage: $4.5\text{ nV}/\sqrt{\text{Hz}}$.
- Low offset voltage: 0.3 mA
- Low distortion: 0.002%
- High conversion rate: $7\text{ V}/\mu\text{s}$
- High gain bandwidth: 15 MHz
- High power bandwidth: 120 KHz
- Large phase margin: 60°

Main applications

- HiFi audio system equipment
- Pre-amplification and filtering
- set-top box
- Microphone preamplifier circuit
- General amplifier application

logic diagram



Dual channel audio operational amplifier
Limit parameter

symbol	Parameter name	numerical value	unit
Vcc	Power supply voltage	± 18 or 36	V
Vid	Differential input voltage	± 30	V
Vi	input voltage	± 15	V
Toper	operating temperature range	-10~ 70	°C
Tstg	Storage temperature	-60~ 150	°C
Ptot	Maximum power consumption	500	mW

Recommended working parameters

symbol	Parameter name	numerical value	unit
Vcc	Power supply voltage	± 2.5 to ± 15	V

 Dc parameters (Ta = 25°C, Vs = ± 15 v)

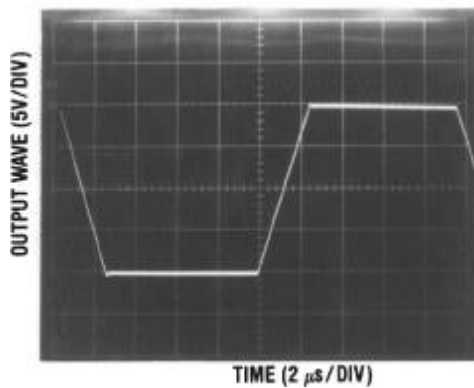
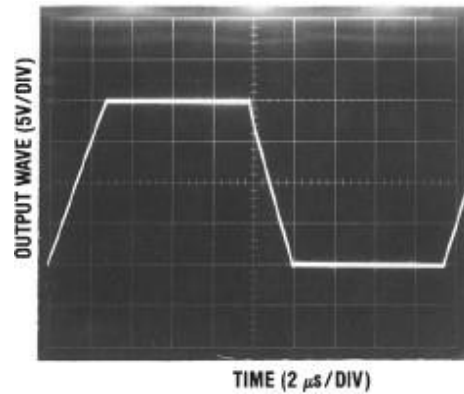
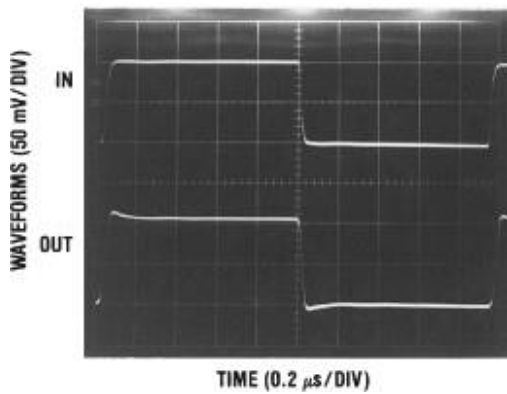
symbol	parameter	condition	minimum value	typical value	maximum	unit
Vos	Input bias voltage	Rs=10 Ω	—	0.3	5	mV
Ios	Input offset voltage	—	—	10	200	nA
Ib	Input current bias	—	—	500	1000	nA
Av	Gain voltage	RI=2k Ω , Vo= ± 10 V	90	110	—	dB
Vom	Output conversion voltage	RI=10k Ω	± 12	± 13.5	—	V
		RI=2k Ω	± 10	± 13.4	—	V
Vcm	common- mode input voltage	—	± 12	± 14.0	—	V
CMRR	common mode rejection ratio	Vin= ± 12 V	80	100	—	dB
PSRR	Power supply	Vs=15~5V -15~ -5V	80	100	—	dB
Iq	quiescent current	Vo=0V Both Amps	—	5	8	mA

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Ac parameters (Ta=25C°, Vs=±15V, RI=2kΩ)

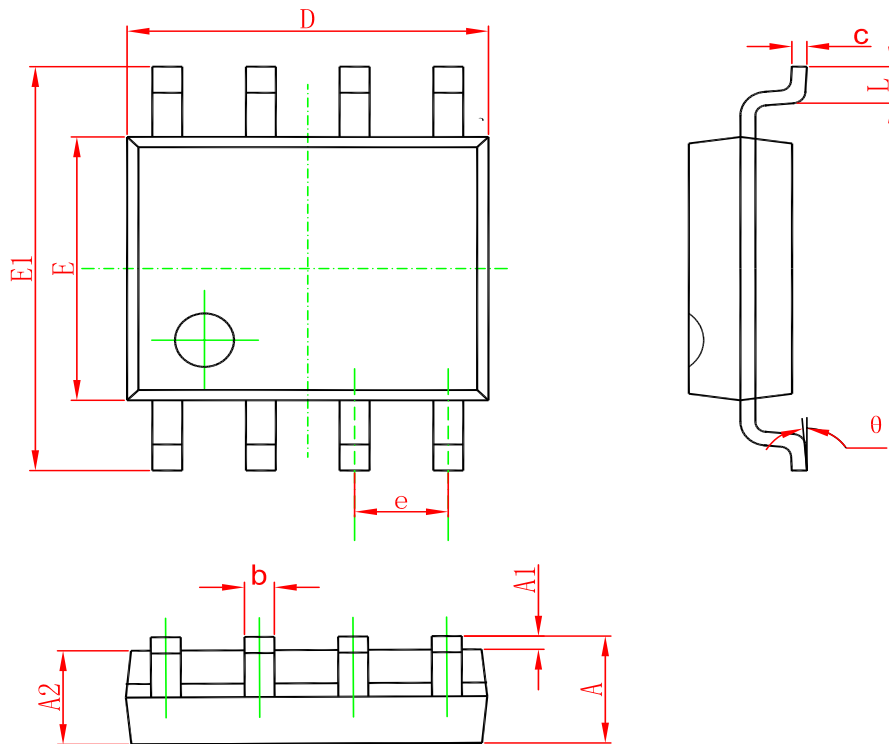
symbol	parameter	condition	minimum value	typical value	maximum	unit
SR	conversion rate	RI=2kΩ	5	7	—	V/μs
GBW	Gain bandwidth product	f=100kHz	10	15	—	MHz

Typical waveform diagram



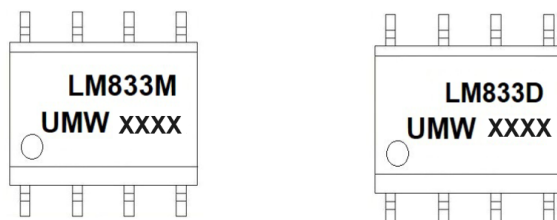
PACKAGE OUTLINE DIMENSIONS

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
UMW LM833MX	SOP-8	2500	Tape and reel
UMW LM833DT	SOP-8	2500	Tape and reel