

SANYO

No.2900

Microphone Amplifier for Video Cameras

Overview

Discrete devices or an operational amplifier + discrete devices have been so far used to make up a microphone amplifier block. However, we succeeded in developing the LA7293M—a streamlined microphone amplifier block IC—that has the following functions and features.

Functions

- Microphone amplifier
- Power supply pin for microphone (with ripple filter)
- External power supply pin (with current limiter)

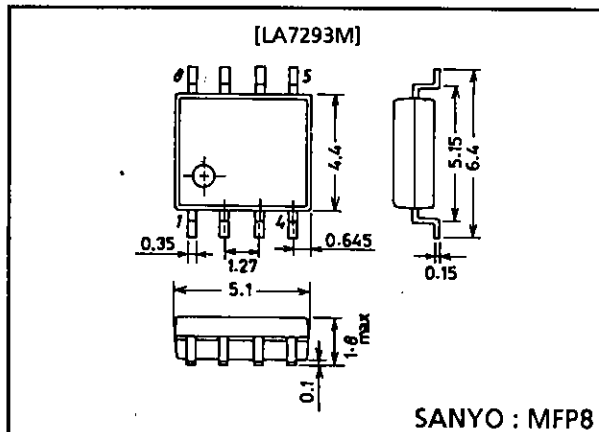
Features

- Power supply for capacitor microphone.
- External 5V supply.
- Microphone amplifier gain, frequency response variable.

Package Dimensions

unit: mm

3032B-MFP8



Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$		9.0	V
Allowable power dissipation	$P_{d\text{ max}}$	$T_a = 65^\circ\text{C}$	180	mW
Operating temperature	T_{op}		-10 to +65	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +125	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		5.0	V
Operating voltage range	$V_{CC\text{ op}}$		4.0 to 5.5	V

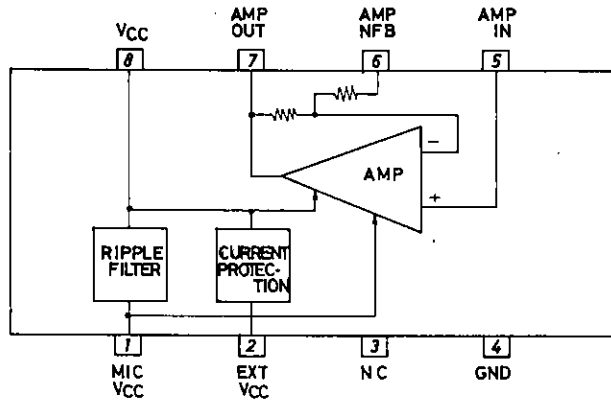
Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 5\text{V}$, $f = 1.0\text{kHz}$, $0\text{dBv} = 1.0\text{V}_{\text{rms}}$

Parameter	Symbol	Conditions	min	typ	max	Unit
Voltage gain	VG	$V_O = -10\text{dBv}$	30	31	32	dB
Total harmonic distortion	THD	$V_O = -10\text{dBv}$		0.1	0.2	%
Maximum output	V_{OM}	THD = 1.0%	-3.2	-1.2		dBv
Output noise voltage	V_{NO}	$R_g = 2.2\text{k}\Omega$, DIN audio filter		-82	-76	dBv
Microphone supply output voltage	V_1	Pin 1 voltage	2.5	2.8	3.0	V
External supply output voltage	V_2	Pin 2 voltage for pin 2 output current (25mA)	4.0	4.5		V
External power supply protection	I_2	Pin 2 output current when pin 2 is grounded			30	mA
Current drain	I_{CC}	Pin 1,2 open		3.0	4.0	mA

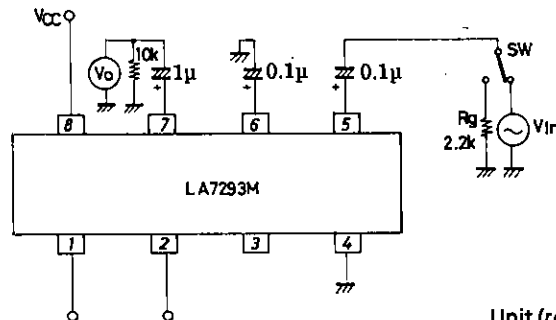
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LA7293M

Block Diagram

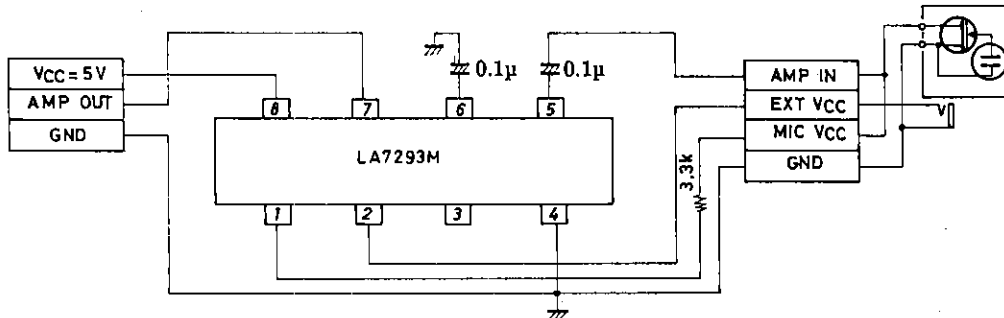


Test Circuit



Unit (resistance : Ω, capacitance : F)

Sample Application Circuit



Unit (resistance : Ω, capacitance : F)

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