

SANYO

No.2900

LA7293M**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)

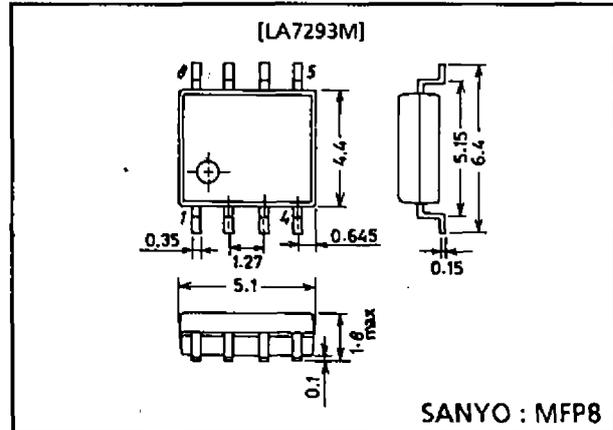
Features

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

Package Dimensions

unit : mm

3032B-MFP8

**Specifications****Maximum Ratings at Ta=25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		9.0	V
Allowable power dissipation	P_{dmax}	Ta=65°C	180	mW
Operating temperature	T_{opr}		-10 to +65	°C
Storage temperature	T_{stg}		-55 to +125	°C

Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		5.0	V
Operating voltage range	V_{CCop}		4.0 to 5.5	V

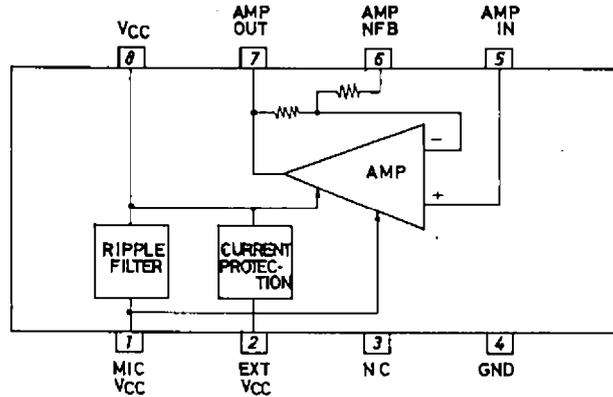
Operating Characteristics at Ta=25°C, V_{CC}=5V, f=1.0kHz, 0dBv=1.0V_{rms}

Parameter	Symbol	Conditions	min	typ	max	Unit
Voltage gain	VG	$V_O = -10dBv$	30	31	32	dB
Total harmonic distortion	THD	$V_O = -10dBv$		0.1	0.2	%
Maximum output	V_{OM}	THD=1.0%	-3.2	-1.2		dBv
Output noise voltage	V_{NO}	Rg=2.2kΩ, 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

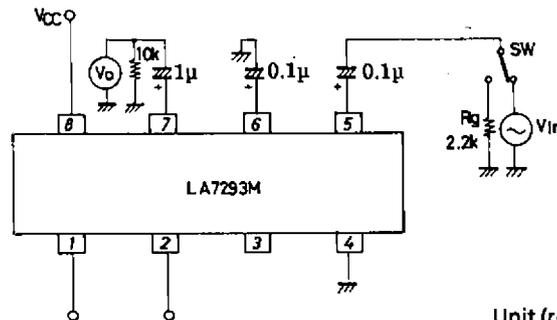
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LA7293M

Block Diagram

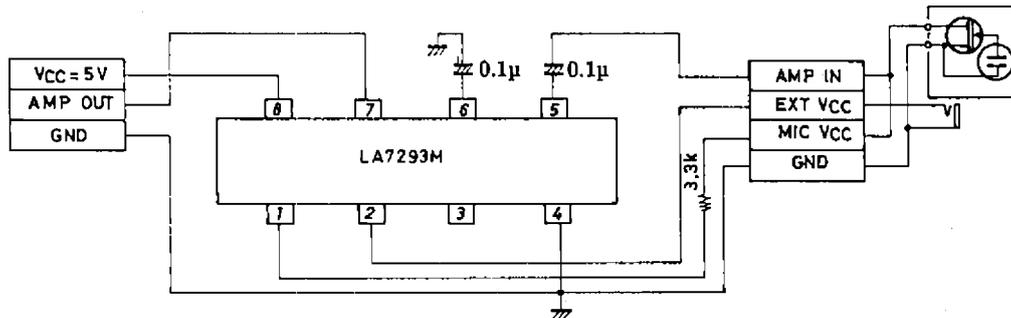


Test Circuit



Unit (resistance : Ω , capacitance : F)

Sample Application Circuit



Unit (resistance : Ω , capacitance : F)

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