



# LA5310M

## Voltage Divider for LCD Applications

### Overview

The LA5310M is a voltage divider IC for use in LCD matrix multidrive applications.

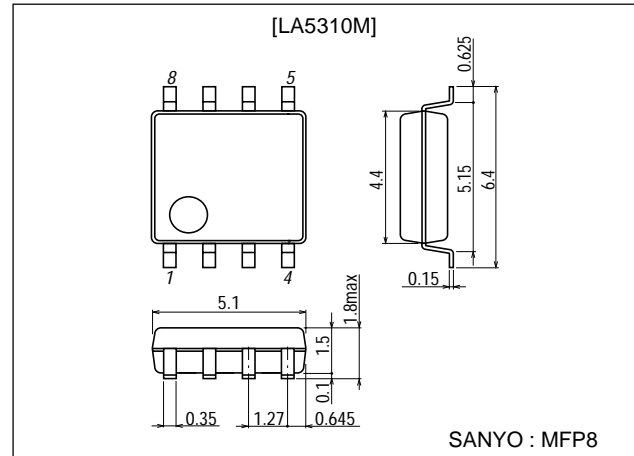
### Features

- Power supply for 1/9 bias LCD applications.
- 5 operational amplifiers producing 5 voltage outputs.
- Low current drain (1.0mA max).
- Miniflat package.

### Package Dimensions

unit:mm

3032B-MFP8



### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max		35	V
Output current	I <sub>OUT</sub>		5	mA
Allowable power dissipation	P <sub>d</sub> max		300	mW
Operating temperature	T <sub>opr</sub>		-20 to +75	°C
Storage temperature	T <sub>stg</sub>		-30 to +125	°C

#### Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage range	V <sub>CC</sub> op		11 to 25	V
Recommended output current	I <sub>1</sub>		0 to 3	mA
	I <sub>2</sub> , I <sub>3</sub>		-3 to +3	mA
	I <sub>4</sub> , I <sub>5</sub>		-3 to 0	mA

#### Operating Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I <sub>CC</sub>	V <sub>CC</sub> =25V			1.0	mA
Output voltage	V <sub>1</sub>		-1.25	-1.20	-1.15	V

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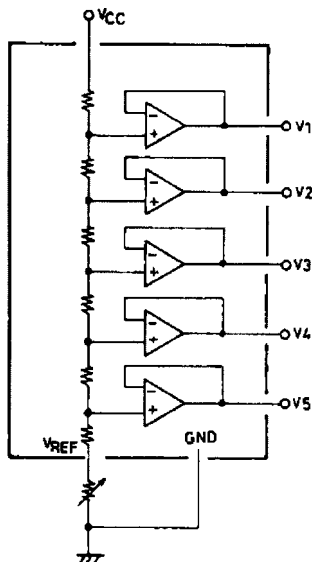
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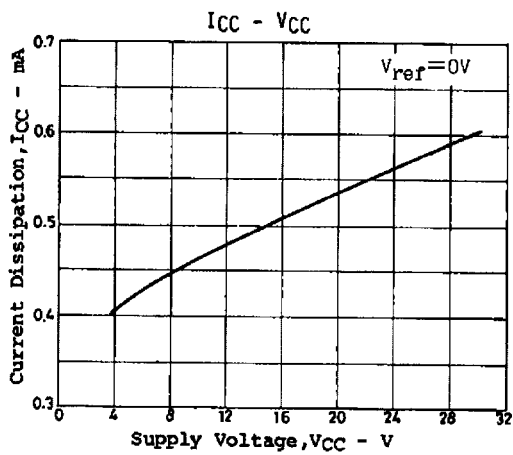
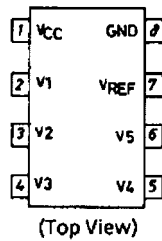
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output ratio1	R <sub>a1</sub>	$V_2/V_1, V_{CC}=0, V_{ref}=-12V, GND=-25V$	1.96	2.00	2.04	V
Output ratio2	R <sub>a2</sub>	$V_5-V_3/V_5-V_4, V_{CC}=0, V_{ref}=-12V, GND=-25V$	1.96	2.00	2.04	V
Output ratio3	R <sub>b1</sub>	$-V_5/-V_1, V_{CC}=0, V_{ref}=-12V, GND=-25V$	8.73	9.00	9.27	V
Output ratio4	R <sub>b2</sub>	$-V_5/-V_2, V_{CC}=0, V_{ref}=-12V, GND=-25V$	4.37	4.50	4.63	V
Output ratio5	R <sub>b3</sub>	$-V_5/-V_5+V_3, V_{CC}=0, V_{ref}=-12V, GND=-25V$	4.37	4.50	4.63	V
Output ratio6	R <sub>b4</sub>	$-V_5/-V_5+V_4, V_{CC}=0, V_{ref}=-12V, GND=-25V$	8.73	9.00	9.27	V
Load regulation	$\Delta V_1$	$+100\mu A < I_{OUT} < +3mA$			20	mV
	$\Delta V_2$	$+100\mu A < I_{OUT} < +3mA$			20	mV
	$\Delta V_3$	$+100\mu A < I_{OUT} < +3mA$			20	mV
	$-\Delta V_2$	$-3mA < I_{OUT} < -100\mu A$			20	mV
	$-\Delta V_3$	$-3mA < I_{OUT} < -100\mu A$			20	mV
	$-\Delta V_4$	$-3mA < I_{OUT} < -100\mu A$			20	mV
	$-\Delta V_5$	$-3mA < I_{OUT} < -100\mu A$			20	mV

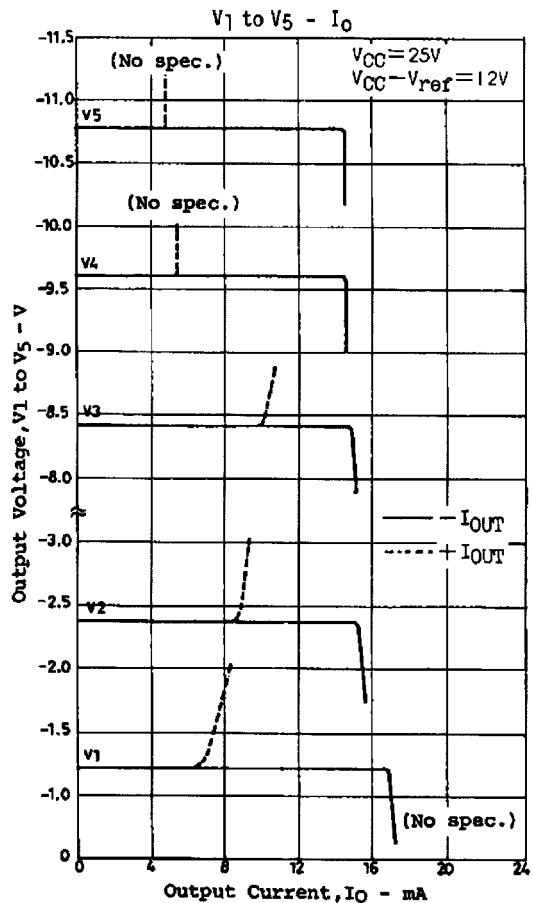
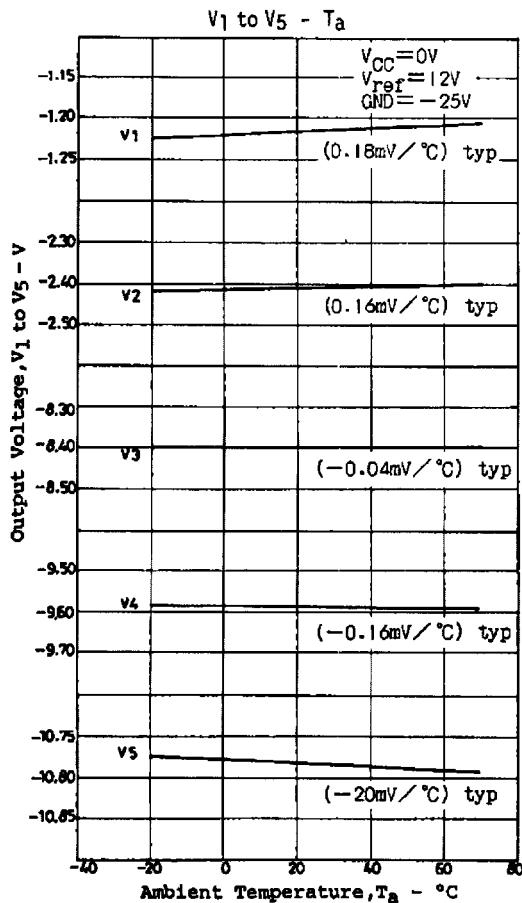
## Equivalent Circuit



## Pin Assingment



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