

**LA5311M**

Variable Divided Voltage Generator for LCD

Overview

The LA5311M is a variable divided voltage generator IC for multiple drive of LCD matrix.

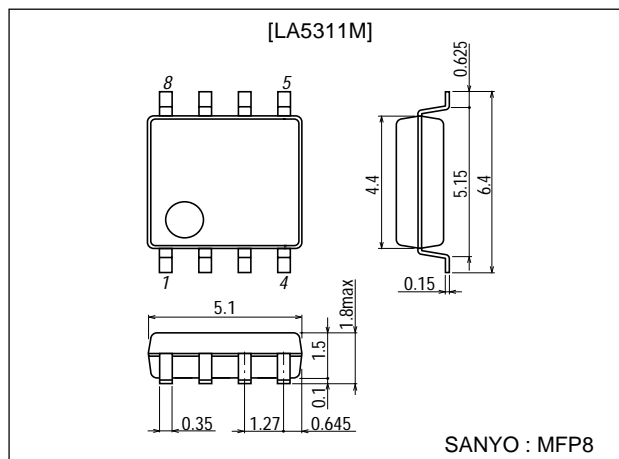
Features

- Power supply for variable bias LCD drive.
- 4 operational amplifiers deliver 4 voltage outputs.
- Low current drain (1.0mA max).
- Miniflat package.

Package Dimensions

unit:mm

3032B-MFP8



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$		30	V
Output current	I_{OUT}		5	mA
Allowable power dissipation	$P_d\text{ max}$		300	mW
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage range	$V_{CC\text{ op}}$	$V_{CC}-V_1>1.0\text{V}$	11 to 28	V
Recommended output current	I_1		0 to 3	mA
	I_2, I_3		-3 to +3	mA
	I_4		-3 to 0	mA

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}=20\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I_{CC}				1.0	mA
Output ratio1	R1	V_2/V_1 , $V_{CC}=0$, $GND=-20\text{V}=V_5$ External $R_A=100\text{k}\Omega$	1.94		2.06	
Output ratio2	R2	V_5-V_3/V_5-V_4 , $V_{CC}=0$, $GND=-20\text{V}=V_5$ External $R_A=100\text{k}\Omega$	1.94		2.06	

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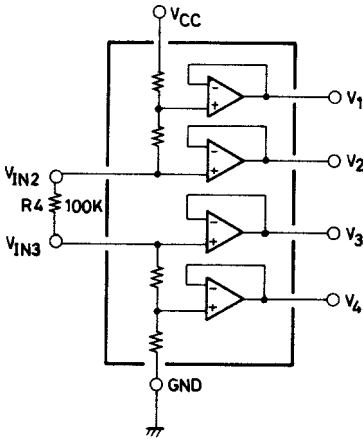
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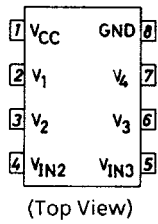
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output ratio3	R3	V2/V5-V3, V _{CC} =0, GND=-20V=V ₅ External R _A =100kΩ	0.97		1.03	
Output ratio4	R4	V1/V5-V4, V _{CC} =0, GND=-20V=V ₅ External R _A =100kΩ	0.97		1.03	
Load regulation	ΔV1	+100μA<I _{OUT} <+3mA			20	mV
	ΔV2	+100μA<I _{OUT} <+3mA			20	mV
	ΔV3	+100μA<I _{OUT} <+3mA			20	mV
	-ΔV2	-3mA<I _{OUT} <-100μA			20	mV
	-ΔV3	-3mA<I _{OUT} <-100μA			20	mV
	-ΔV4	-3mA<I _{OUT} <-100μA			20	mV
R ₁ +R ₂	R	0.5V applied across R ₁ +R ₂	33	40	47	kΩ

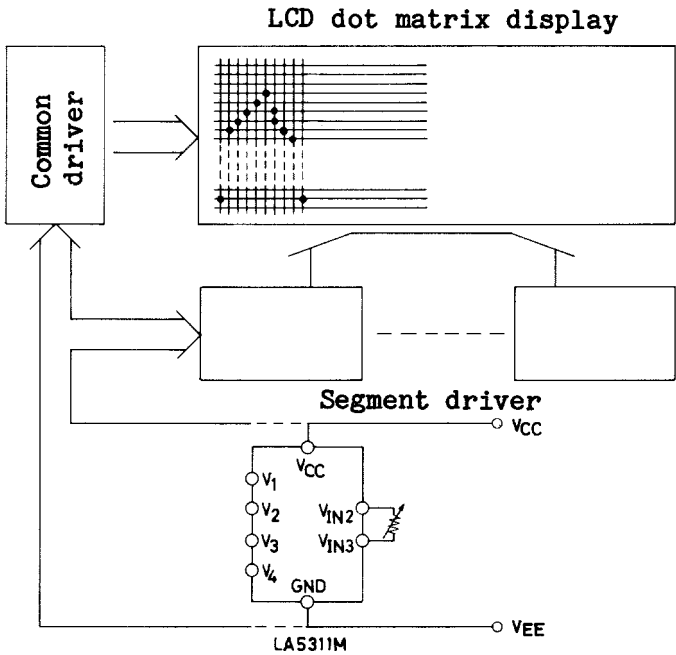
Equivalent Circuit



Pin Assingment



Sample Application Circuit



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