

**SANYO**

No. 1531B

**LA5311M**Variable Divided  
Voltage Generator for LCD

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

**Features**

- . Power supply for variable bias LCD drive.
- . 4 OP amps to deliver 4 voltage outputs.
- . Low current dissipation (1.0mA max.)
- . Miniflat package.

**Maximum Ratings at Ta=25°C**

			unit
Maximum Supply Voltage	$V_{CC}$ max	30	V
Output Current	$I_{OUT}$	5	mA
Allowable Power Dissipation	$P_d$ max	300	mW
Operating Temperature	$T_{opr}$	-20 to +75	°C
Storage Temperature	$T_{stg}$	-40 to +125	°C

**Operating Conditions at Ta=25°C**

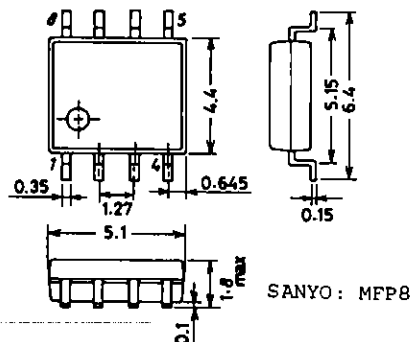
			unit
Supply Voltage Range	$V_{CC}$ op $V_{CC}-V_1 > 1.0V$	11 to 28	V
Recommended Output Current	$I_1$	0 to 3	mA
Recommended Output Current	$I_2, I_3$	-3 to +3	mA
Recommended Output Current	$I_4$	-3 to 0	mA

**Operating Characteristics at Ta=25°C,  $V_{CC}=20V$** 

			min	typ	max	unit
Current Dissipation	$I_{CC}$				1.0	mA
Output Ratio 1	$R_1$	$V_2/V_1, V_{CC}=0: GND=-20V=V_5$ External $R_A=100k\Omega$	1.94		2.06	
Output Ratio 2	$R_2$	$V_5-V_3/V_5-V_4$	1.94		2.06	
Output Ratio 3	$R_3$	$V_2/V_5-V_3$	0.97		1.03	
Output Ratio 4	$R_4$	$V_1/V_5-V_4$	0.97		1.03	
Load Regulation	$\Delta V_1$	$+100\mu A < I_{OUT} < +3mA$			20	mV
"	$\Delta V_2$	"			20	mV
"	$\Delta V_3$	"			20	mV
"	$-\Delta V_2$	$-3mA < I_{OUT} < -100\mu A$			20	mV
"	$-\Delta V_3$	"			20	mV
"	$-\Delta V_4$	"			20	mV
$R_1+R_2$	$R$	0.5V applied across $R_1+R_2$	33	40	47	kohm

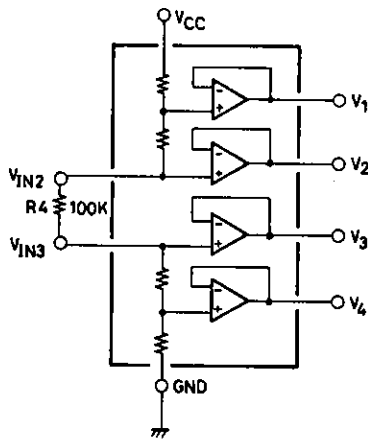
**Package Dimensions 3032B**

(unit: mm)

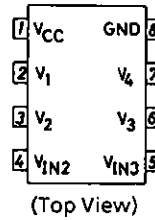


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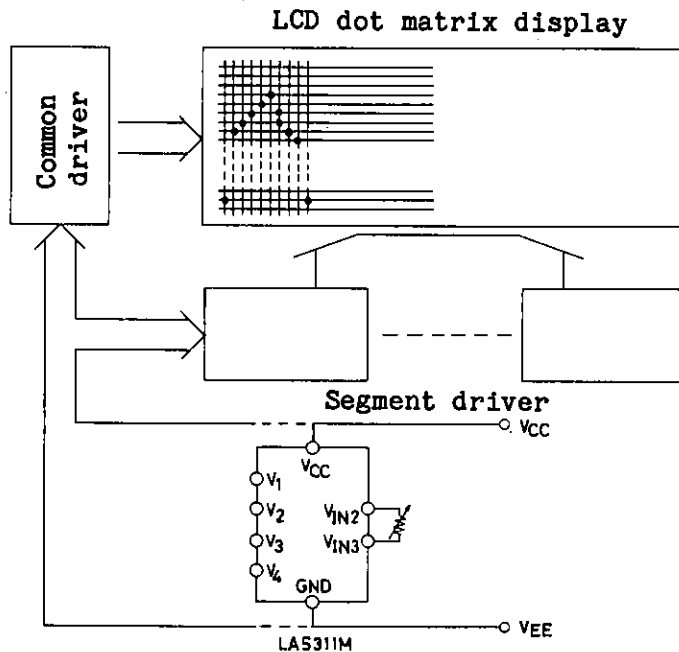
**Equivalent Circuit**



**Pin Assignment**



**Sample Application Circuit**



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