



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 <sub>CC</sub> max	30	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>	-40 to +125	°C

**Operating Conditions at Ta=25°C**

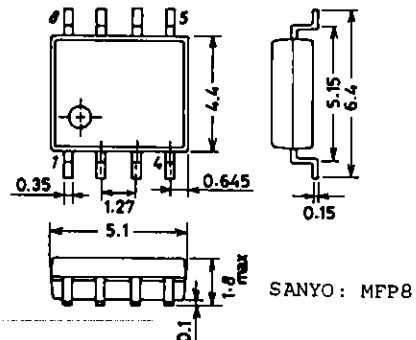
			unit
Supply Voltage Range	V <sub>CC</sub> op V <sub>CC</sub> -V <sub>1</sub> >1.0V	11 to 28	V
Recommended Output Current	I <sub>1</sub>	0 to 3	mA
Recommended Output Current	I <sub>2, I<sub>3</sub></sub>	-3 to +3	mA
Recommended Output Current	I <sub>4</sub>	-3 to 0	mA

**Operating Characteristics at Ta=25°C, V<sub>CC</sub>=20V**

			min	typ	max	unit
Current Dissipation	I <sub>CC</sub>				1.0	mA
Output Ratio 1	R1	V <sub>2</sub> /V <sub>1</sub> , V <sub>CC</sub> =0: GND=-20V=V <sub>5</sub> External R <sub>A</sub> =100kohms	1.94		2.06	
Output Ratio 2	R2	V <sub>5</sub> -V <sub>3</sub> /V <sub>5</sub> -V <sub>4</sub>	1.94		2.06	
Output Ratio 3	R3	V <sub>2</sub> /V <sub>5</sub> -V <sub>3</sub>	0.97		1.03	
Output Ratio 4	R4	V <sub>1</sub> /V <sub>5</sub> -V <sub>4</sub>	0.97		1.03	
Load Regulation	ΔV1	+100uA<I <sub>OUT</sub> <+3mA			20	mV
"	ΔV2	"			20	mV
"	ΔV3	"			20	mV
"	-ΔV2	-3mA<I <sub>OUT</sub> <-100uA			20	mV
"	-ΔV3	"			20	mV
"	-ΔV4	"			20	mV
R <sub>1</sub> +R <sub>2</sub>	R	0.5V applied across R <sub>1</sub> +R <sub>2</sub>	33	40	47	kohm

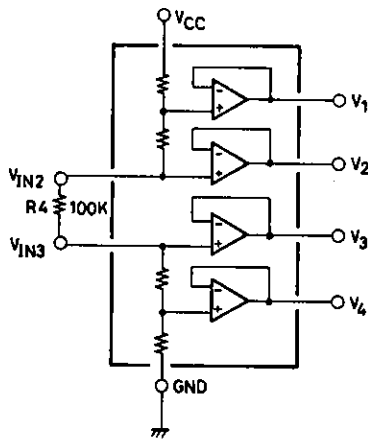
**Package Dimensions 3032B**

(unit: mm)

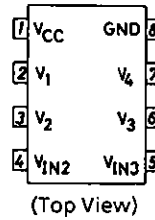


SANYO: MFP8

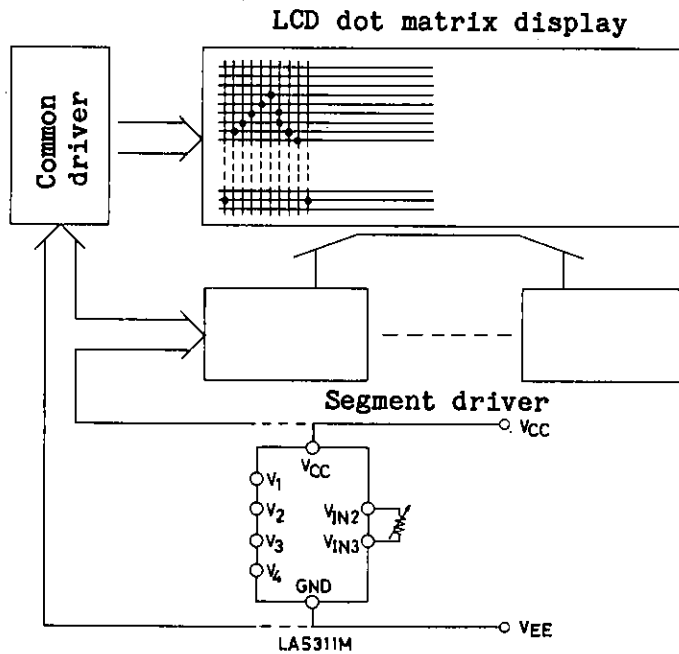
**Equivalent Circuit**



**Pin Assignment**



**Sample Application Circuit**



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.