

<b>SANYO</b>	No.3245A	Monolithic Linear IC
		<b>LA5317M</b>
		Monolithic Linear IC
		Variable Divided Voltage Generator for LCD Use

### Overview

The LA5317M is a variable divided voltage generator IC for multiple drive of LCD matrix.

### Features

- Power supply for variable bias LCD drive (1/5 to 1/20 bias available by on-chip resistances)
- 5 OP amps to deliver 5 voltage outputs
- Low current dissipation (1.6mA typ)
- Miniflat package

### Maximum Ratings at Ta = 25°C

			unit
Maximum Supply Voltage	V <sub>EE</sub> max	V <sub>CC</sub> -V <sub>EE</sub>	-38 to 0 V
Maximum Output Current	I <sub>OUT</sub> max	V <sub>1</sub> to V <sub>5</sub>	*±25 mA
Allowable Power Dissipation	P <sub>d</sub> max		800 mW
Operating Temperature	T <sub>opr</sub>		-20 to +75 °C
Storage Temperature	T <sub>stg</sub>		-30 to +125 °C

Note 1) Continuous operation (nonbreakdown) is guaranteed when operated at the maximum ratings shown above.

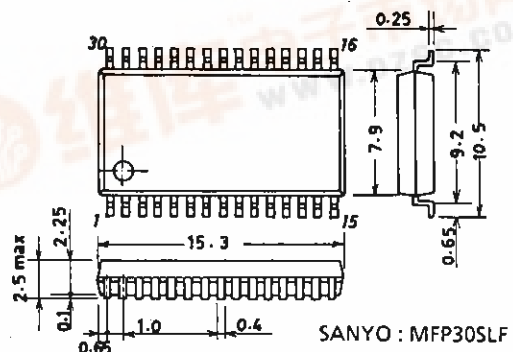
Note 2)\* The maximum output current is a value specified under the conditions otherwise specified separately.

### Operating Conditions at Ta = 25°C

			unit
Supply Voltage	V <sub>EE</sub>	V <sub>CC</sub> -V <sub>EE</sub>	-35 to -10 V
Output Current	I <sub>OUT1</sub>	V <sub>1</sub>	-0.5 to +10 mA
	I <sub>OUT2,3</sub>	V <sub>2</sub> , V <sub>3</sub>	-10 to +10 mA
	I <sub>OUT4,5</sub>	V <sub>4</sub> , V <sub>5</sub>	-15 to +0.5 mA

Note 3) Set V<sub>CC</sub>, V<sub>EE</sub> so that |V<sub>1</sub>|, |V<sub>5</sub>-V<sub>4</sub>| become 1V or greater.

### Package Dimensions 3073A-M30IC (unit: mm)

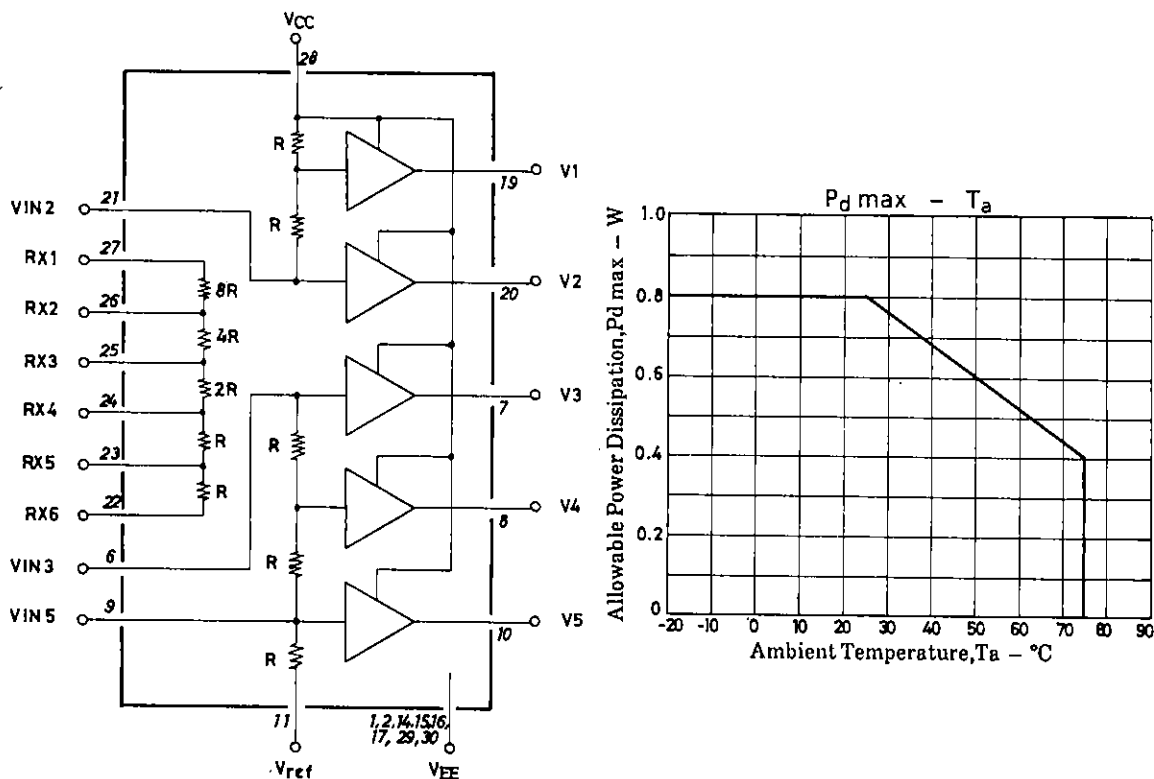


## LA5317M

Operating Characteristics at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} - V_{EE} = 20\text{V}$ ,  $V_{REF} = V_{EE}$ ,  $R_X = 8R$

			min	typ	max	unit
Current Dissipation	$I_{CC}, I_{EE}$	$V_{CC}, V_{EE} : V_{CC} - V_{EE} = 20\text{V}$ , $R_X = 8R$		1.6	3	mA
Output Voltage Ratio	1	$R_{a1}$	1.96	2.00	2.04	
	2	$R_{a2}$	1.96	2.00	2.04	
	3	$R_{b1}$	11.64	12.00	12.36	
	4	$R_{b2}$	5.82	6.00	6.18	
	5	$R_{b3}$	5.82	6.00	6.18	
	6	$R_{b4}$	11.64	12.00	12.36	
Internal Resistance Ratio	1	$8R$		8		
	2	$12R$		12		
	3	$14R$		14		
	4	$15R$		15		
	5	$16R$		16		
Resistance	$R$	$R$ value when 0.5V is applied across $R_{X5}$ and $R_{X6}$ .		20		k $\Omega$
Load Regulation	1	$\Delta V_1$	$V_1 : -0.2\text{mA} < I_{OUT1} < +10.0\text{mA}$		$\pm 20$	mV
	2	$\Delta V_2$	$V_2 : -0.2\text{mA} < I_{OUT2} < +10.0\text{mA}$		$\pm 20$	mV
	3	$\Delta V_3$	$V_3 : -0.2\text{mA} < I_{OUT3} < +10.0\text{mA}$		$\pm 20$	mV
	-2	$-\Delta V_2$	$V_2 : -10.0\text{mA} < I_{OUT2} < +0.2\text{mA}$		$\pm 20$	mV
	-3	$-\Delta V_3$	$V_3 : -10.0\text{mA} < I_{OUT3} < +0.2\text{mA}$		$\pm 20$	mV
	-4	$-\Delta V_4$	$V_4 : -10.0\text{mA} < I_{OUT4} < +0.2\text{mA}$		$\pm 20$	mV
-5	$-\Delta V_5$	$V_5 : -10.0\text{mA} < I_{OUT5} < +0.2\text{mA}$		$\pm 20$	mV	

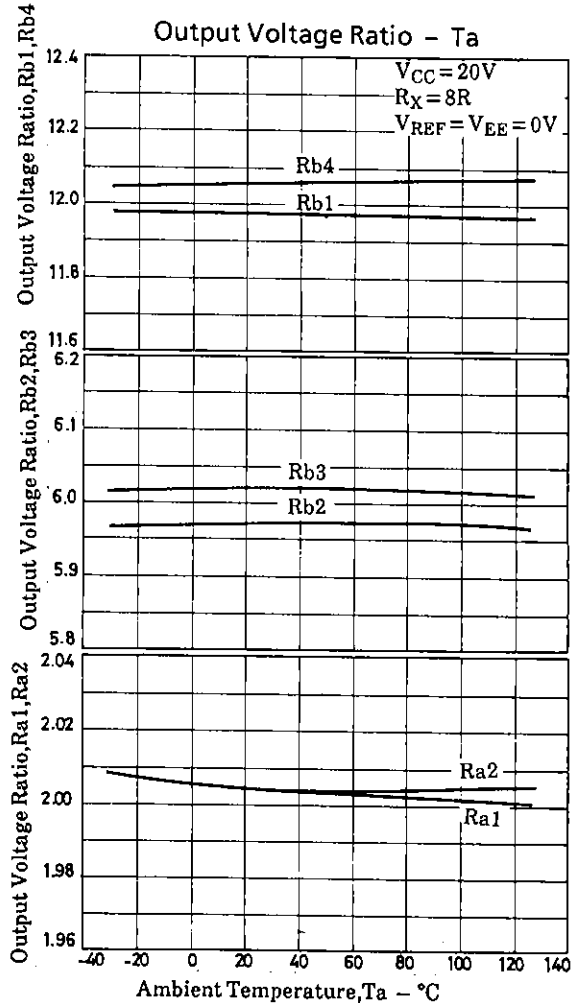
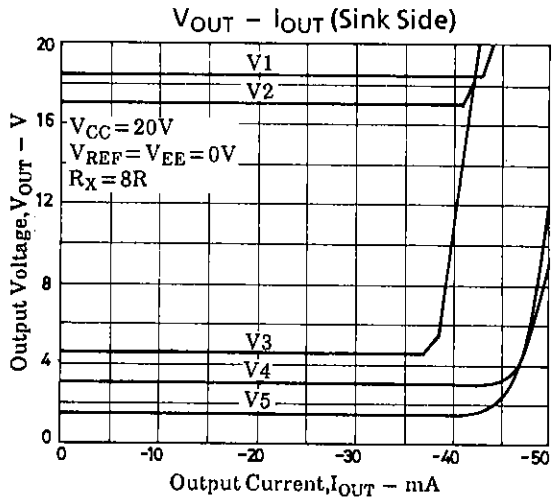
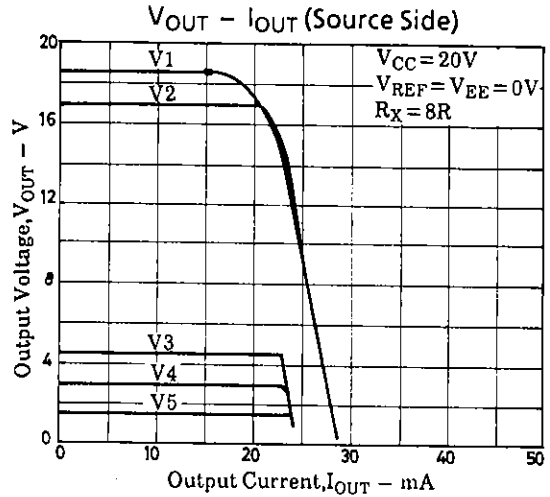
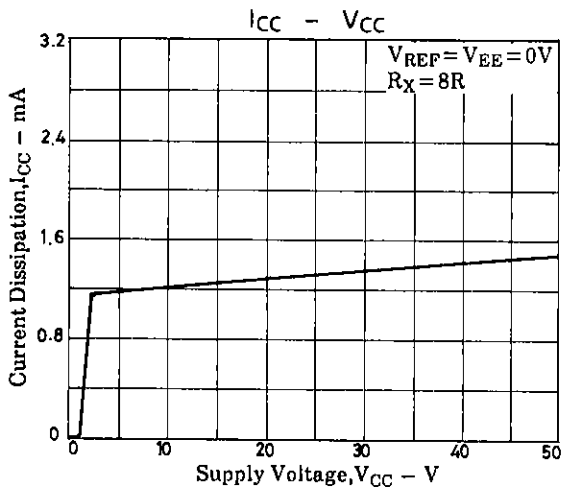
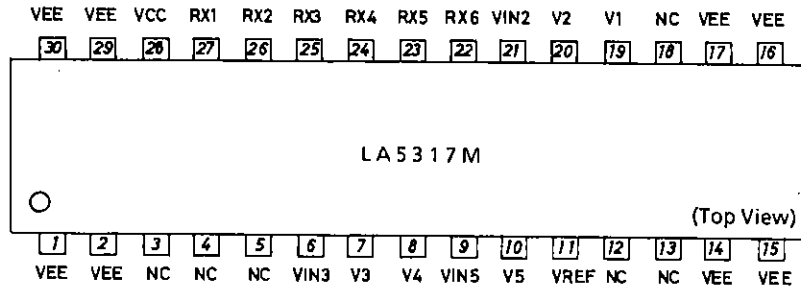
### Equivalent Circuit Block Diagram



Note : Use the IC so that  $V_{RX1} \geq V_{RX2} \geq V_{RX3} \geq V_{RX4} \geq V_{RX5} \geq V_{RX6}$  is obtained.

# LA5317M

## Pin Assignment



- 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.