Ordering number: EN 3245A

Monolithic Linear IC

No.3245A

LA5317M

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_{EE} max	V_{CC}-V_{EE}	−38 to 0	V
Maximum Output Current	I_{OUT} max	V_1 to V_5	*±25	mA
Allowable Power Dissipation	Pd max		800	mW
Operating Temperature	**Topr**		−20 to +75	°C
Storage Temperature	Tstg		−30 to +125	°C

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

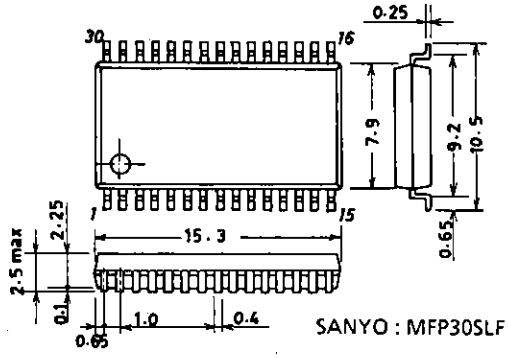
Note 2)* The maximum output current is a value specified under the conditions otherwise specified separately.

Operating Conditions at Ta = 25°C

				unit
Supply Voltage	V_{EE}	V_{CC}-V_{EE}	−35 to −10	V
Output Current	I_{OUT1}	V_1	−0.5 to +10	mA
	$I_{OUT2,3}$	V_2,V_3	−10 to +10	mA
	$I_{OUT4,5}$	V_4,V_5	−15 to +0.5	mA

Note 3) Set V_{CC}, V_{EE} so that $|V_1|$, $|V_5-V_4|$ become 1V or greater.

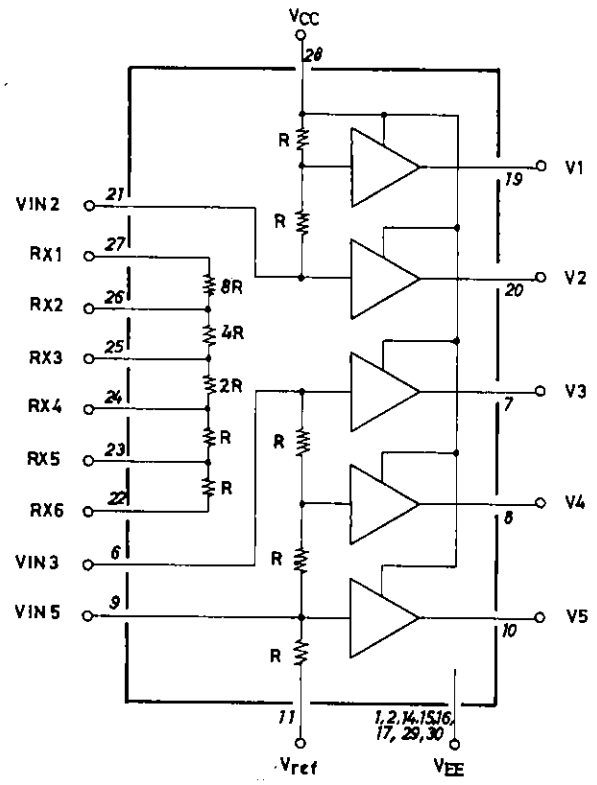
Package Dimensions 3073A-M30IC
(unit: mm)

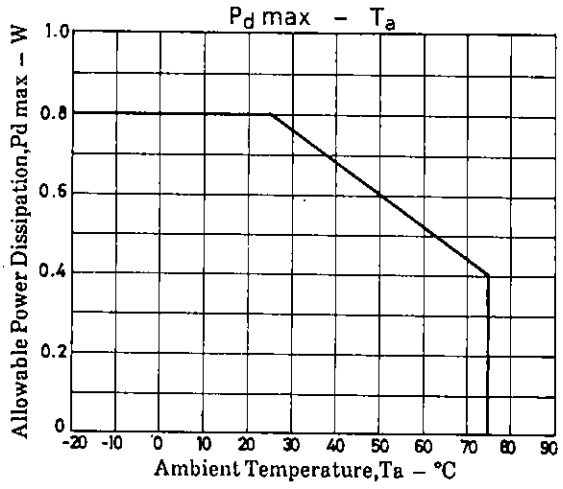


Operating Characteristics at Ta = 25°C, $V_{CC} - V_{EE} = 20V$, $V_{REF} = V_{EE}$, $R_X = 8R$

					min	typ	max	unit
Current Dissipation			I_{CC}, I_{EE}	V_{CC}, V_{EE} : V_{CC}-V_{EE} = 20V, R_X = 8R		1.6	3	mA
Output Voltage Ratio	1		Ra1	V_2/V_1	1.96	2.00	2.04	
	2		Ra2	$(V_5-V_3)/(V_5-V_4)$	1.96	2.00	2.04	
	3		Rb1	V_5/V_1	11.64	12.00	12.36	
	4		Rb2	V_5/V_2	5.82	6.00	6.18	
	5		Rb3	$V_5/(V_5-V_3)$	5.82	6.00	6.18	
	6		Rb4	$V_5/(V_5-V_4)$	11.64	12.00	12.36	
Internal Resistance Ratio		1	8R	R_X1-R_X2		8		
		2	12R	R_X1-R_X3 Resistance ratio		12		
		3	14R	R_X1-R_X4 referenced to R		14		
		4	15R	R_X1-R_X5 across R_X5 and R_X6		15		
		5	16R	R_X1-R_X6		16		
Resistance			R	R value when 0.5V is applied across R_X5 and R_X6.		20		kΩ
Load Regulation	1		ΔV_1	V_1 : $-0.2mA < I_{OUT1} < +10.0mA$			±20	mV
	2		ΔV_2	V_2 : $-0.2mA < I_{OUT2} < +10.0mA$			±20	mV
	3		ΔV_3	V_3 : $-0.2mA < I_{OUT3} < +10.0mA$			±20	mV
	−2		$-\Delta V_2$	V_2 : $-10.0mA < I_{OUT2} < +0.2mA$			±20	mV
	−3		$-\Delta V_3$	V_3 : $-10.0mA < I_{OUT3} < +0.2mA$			±20	mV
	−4		$-\Delta V_4$	V_4 : $-10.0mA < I_{OUT4} < +0.2mA$			±20	mV
	−5		$-\Delta V_5$	V_5 : $-10.0mA < I_{OUT5} < +0.2mA$			±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.

Pin Assignment