

<b>SANYO</b>	No.1507C	Monolithic Digital IC
		<b>LB1408</b>
		Level Meter

**Features**

- (1) An input amplifier is built in.
- (2) Minimum number of external parts required.
- (3) Low current dissipation because of series connection of LED's.

**Absolute Maximum Ratings at Ta=25°C**

			unit
Maximum Supply Voltage	V <sub>CC</sub> max (Pin 3)	-0.3 to +18.0	V
Maximum Input Voltage	V <sub>IN</sub> max (Pin 2)	-0.3 to V <sub>CC</sub>	V
D Pin Output Current	I <sub>D</sub> max Output transistor ON	0 to 30	mA
D Pin Output Voltage	V <sub>D</sub> max	-0.3 to V <sub>CC</sub>	V
Reference Flow-Out Current	I <sub>ref</sub> max (Pin 4)	-3.0 to 0	mA
Allowable Power Dissipation	Pdmax	1.2	W
Operating Temperature	Topr	-30 to +80	°C
Storage Temperature	Tstg	-40 to +125	°C

**Allowable Operating Conditions at Ta=25°C**

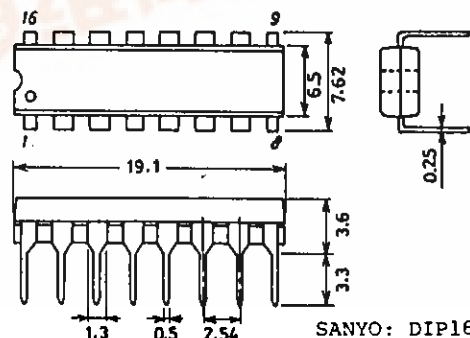
			unit
Supply Voltage	V <sub>CC</sub>	6.7 to 16.0	V

**Electrical Characteristics at Ta=25°C, V<sub>CC</sub>=12V**

		min	typ	max	unit
Current Dissipation I <sub>CC</sub>	Quiescent, pin 3		4	8	mA
	3.3kohms across I <sub>LED1</sub> and V <sub>ref</sub>				
Input Bias Current	I <sub>IN</sub> Pin 2	-10		0	µA
Reference Voltage	V <sub>ref</sub> Pin 4	4.40	4.85	5.30	V
D Pin Current 1	I <sub>D2,4,7</sub> 3.3kohms across I <sub>LED1</sub> and V <sub>ref</sub>	12	16	19	mA
	I <sub>LED2</sub> =GND, pins 7,11,14				
Output Saturation Voltage	V <sub>satD</sub> 1,3,5,6, pins 6,10,12,13		1.0	1.3	V
	I <sub>D2,4,7</sub> " , V <sub>CC</sub> =6.7V,	12		19	mA
OUT Pin Impedance	R <sub>OUT</sub> V <sub>D1,3,6</sub> =0.9V, pins 7,11,14				
	Pin 1	8	12	16	kohm

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**Package Dimensions 3064**  
(unit: mm)



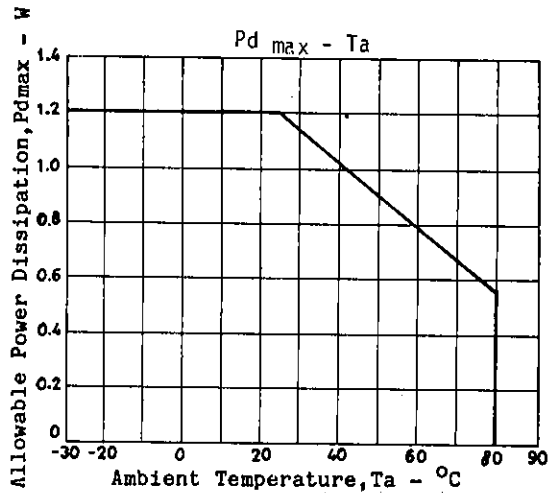
SANYO: DIP16



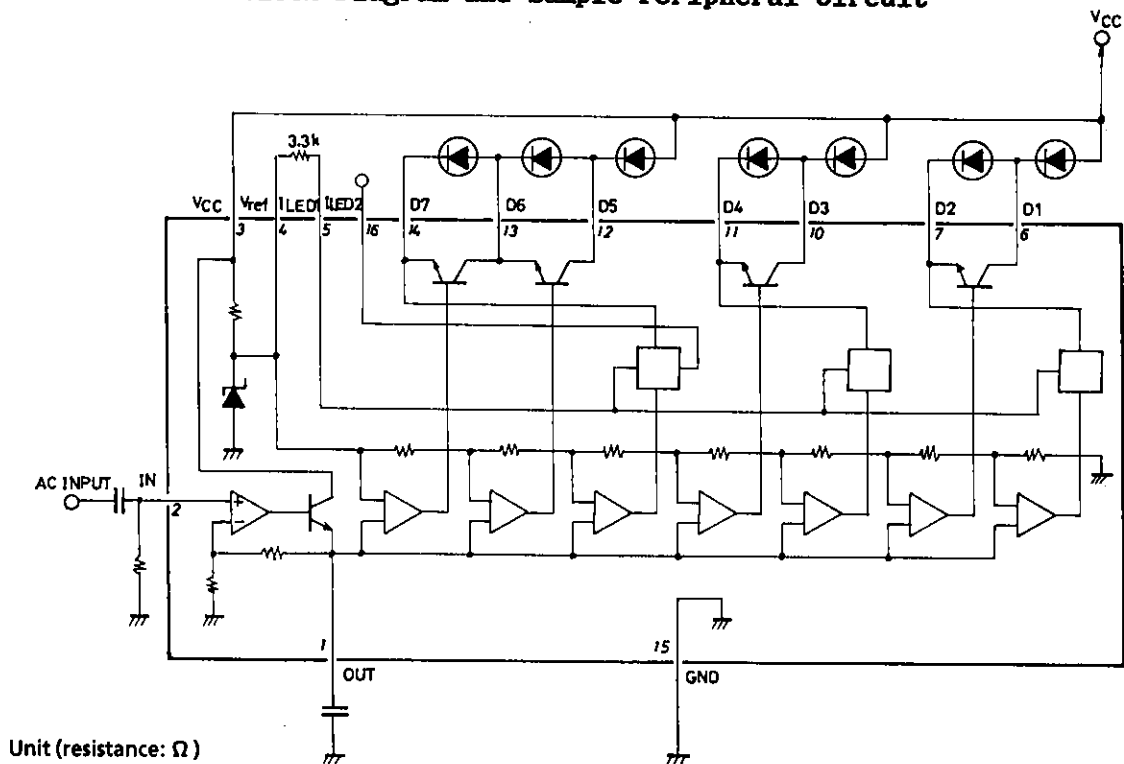
LB1408

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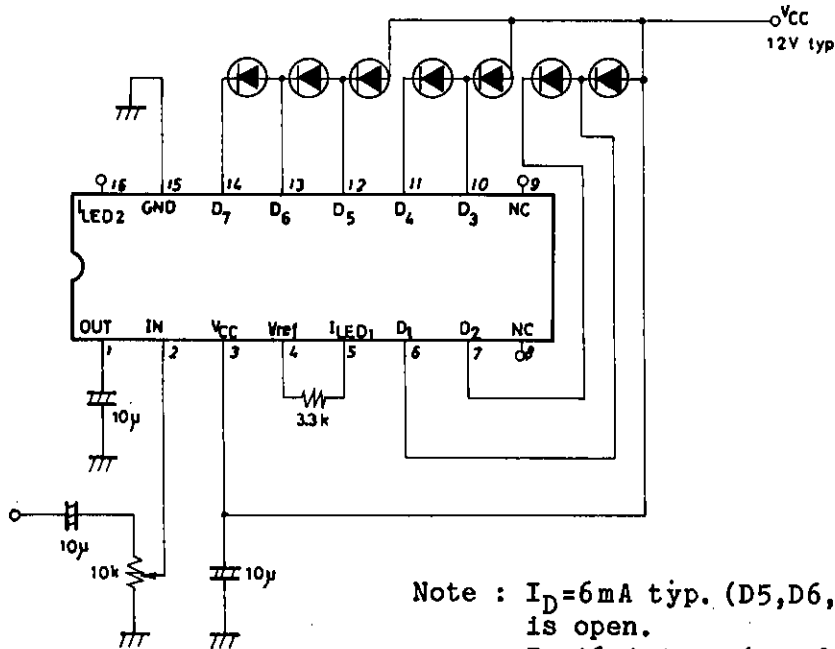
			min	typ	max	unit	
Input Sensitivity	$V_{IN5}$	Input voltage at which LED of D5 is lighted	119	132	145	mV	
Comparator Level D1	$V_{T1}$	Input voltage at which LED of D5 is lighted is taken as 0db.	-26	-20	-14	dB	
	D2	$V_{T2}$	"	-12	-10	-8	dB
	D3	$V_{T3}$	"	-7	-6	-5	dB
	D4	$V_{T4}$	"	-3.5	-3.0	-2.5	dB
	D5	$V_{T5}$	"	0	0	0	dB
	D6	$V_{T6}$	"	2.5	3.0	3.5	dB
	D7	$V_{T7}$	"	5	6	7	dB
Output Leakage Current	$I_{DL}$	$V_{IN}=0V$ , pins 6,10,12	0		10	$\mu A$	
D Pin Current 3	$I_{D7}$	3.3kohms across $I_{LED1}$ and $V_{ref}$ $I_{LED2} = \text{Open}$ , pin 14	4.5	6.0	8.0	mA	
D Pin Current 4	$I_{D7}$	$V_{CC}=6.7V$ , $V_{D6}=0.7V$ , Pin 14	4.5		8.0	mA	



Equivalent Circuit Block Diagram and Sample Peripheral Circuit



## Sample Application Circuit

Unit (resistance:  $\Omega$ , capacitance: F)

Note :  $I_D = 6\text{mA typ. (D5, D6, D7)}$  when  $I_{LED2}$  (pin 16) is open.  
 $I_D = 16\text{mA typ. (D5, D6, D7)}$  when  $I_{LED2}$  (pin 16) is grounded.

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