Ordering number:ENN1376C

Monolithic Digital IC

LB1411

Level Meter

Overview

The LB1411 is intended for 10-LED display signal meter applications. It is especially suited for use in 3V-powered small-sized radios.

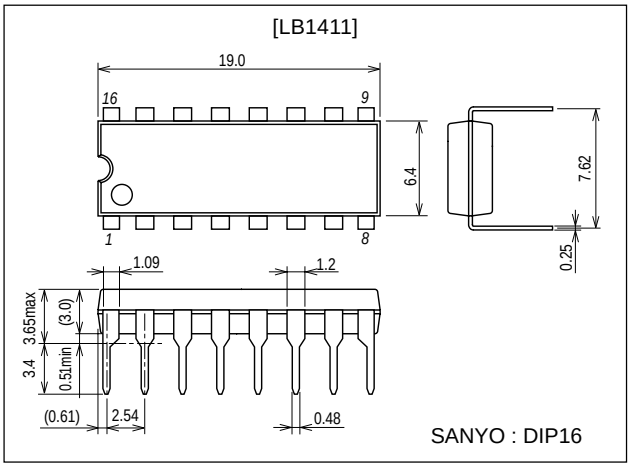
Features and Functions

- Operable from low voltage.
- Minimum number of external parts required.
- LED current is stabilized and can be also set freely by an external resistor.
- Operable even at small signal input mode because of on-chip input amplifier.
- High resolution capability because of 10-LED display.
- Less electromagnetic interference in AM band.

Package Dimensions

unit:mm

3006C-DIP16



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	Pin 15	–0.3 to +10	V
Input voltage	V_{IN} max	Pin 2	–0.3 to V_{CC}	V
Allowable power dissipation	Pd max	Ta=55˚C	500	mW
Operating temperature	Topr		–25 to +75	˚C
Storage temperature	Tstg		–40 to +125	˚C

Allowable Operating Ranges at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply voltage	V_{CC}	Pin 15	2.1	3	9	V
I_D determining resistance		Connected across I_{LED}&GND	3.3	6.8	20	kΩ

Electrical Characteristics at Ta = 25˚C, V_{CC}=3V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I_{CC}	Pin 15		2.5	4	mA
Input current	I_{IN}	Pin 2, V_{IN}=0V	–1.0	–0.2		µA
Reference voltage	Vref	Pin 16	1.14	1.24	1.34	V
D output current	$I_{D1\ to\ 10}$	Pin 4 to 13, D output ON, 6.8kΩ across I_{LED}&GND	0.7	1	1.3	mA

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SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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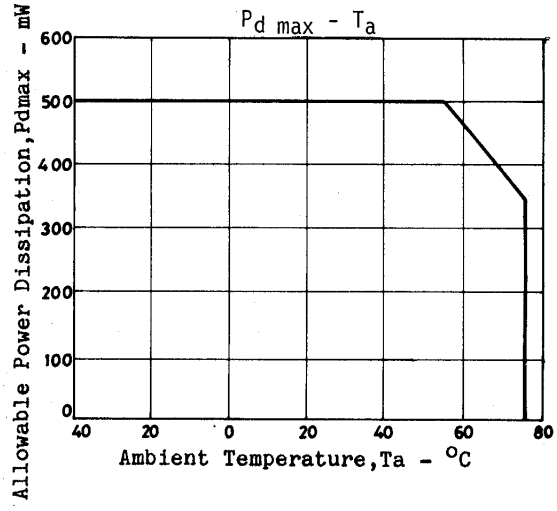
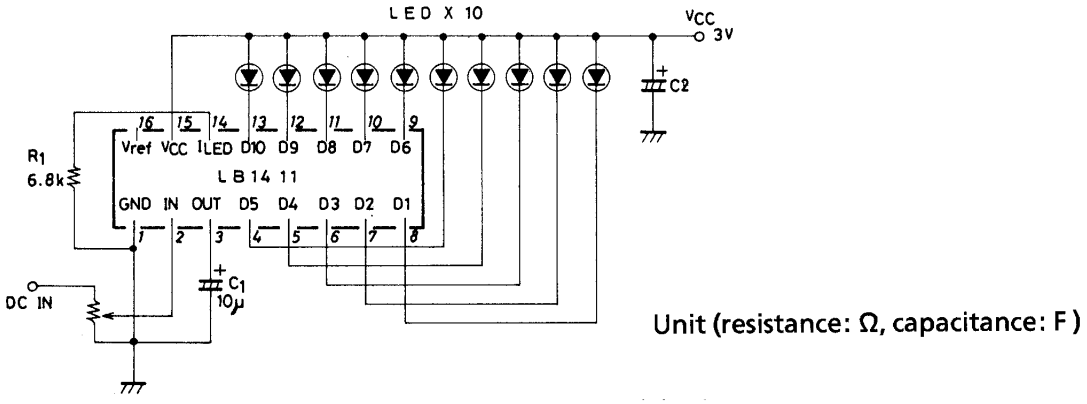
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[Comparator level]						
D_{10}	V_{T10}	Pin 13	230	270	310	mV
D_1	V_{T1}	Pin 8	$0.06V_{T10}$	$0.1V_{T10}$	$0.14V_{T10}$	mV
D_2	V_{T2}	Pin 7	$0.16V_{T10}$	$0.2V_{T10}$	$0.24V_{T10}$	mV
D_3	V_{T3}	Pin 6	$0.26V_{T10}$	$0.3V_{T10}$	$0.34V_{T10}$	mV
D_4	V_{T4}	Pin 5	$0.36V_{T10}$	$0.4V_{T10}$	$0.44V_{T10}$	mV
D_5	V_{T5}	Pin 4	$0.46V_{T10}$	$0.5V_{T10}$	$0.54V_{T10}$	mV
D_6	V_{T6}	Pin 9	$0.56V_{T10}$	$0.6V_{T10}$	$0.64V_{T10}$	mV
D_7	V_{T7}	Pin 10	$0.66V_{T10}$	$0.7V_{T10}$	$0.74V_{T10}$	mV
D_8	V_{T8}	Pin 11	$0.76V_{T10}$	$0.8V_{T10}$	$0.84V_{T10}$	mV
D_9	V_{T9}	Pin 12	$0.86V_{T10}$	$0.9V_{T10}$	$0.94V_{T10}$	mV
Output saturation voltage D_1 to D_{10}	Vsat	Pin 4 to 13, 6.8kΩ across I_{LED}&GND			0.4	V
Output leak current	I_{OFF}	Pin 4 to 13			10	μA



Application Circuit



Constant current of D output is determined by R1.
1mA typ. at 6.8kΩ

Equivalent Circuit Block Diagram