Ordering number:ENN730F

Monolithic Digital IC

LB1450

LED Tuning Indicator

Use

Indicates tuning condition of FM receiver by means of 5 mode – 3 LEDs.

Features

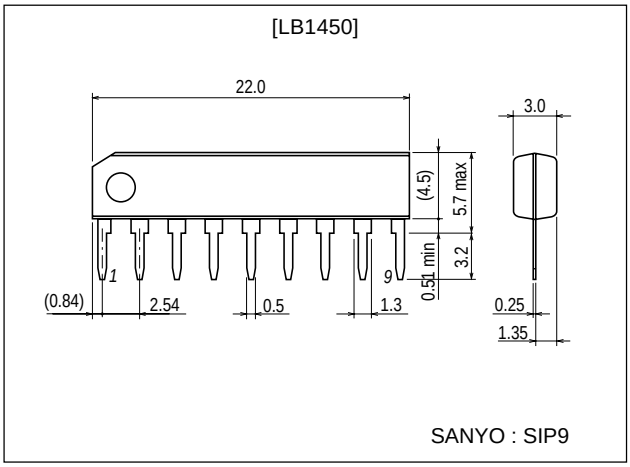
- 3 LEDs display 5 mode tuning condition.
  Since the LEDs are driven under constant current supply, the LED current varys as shown below when two LEDs are lighted on simultaneously. This causes their brightness to vary, and enables the dynamic indication.
- Desired tuning width can be set as the threshold width of window comparator is variable externally.
- No switching radiation can be made as LED current changes over linearly.
- Blanking at station interval and AM reception is easy to set by blanking pin.
- Direct interface can be made to IF IC using quadrature detector (ex. LA1231, LA1140, etc.)
- Single-ended 9 pin package with small mounting area.

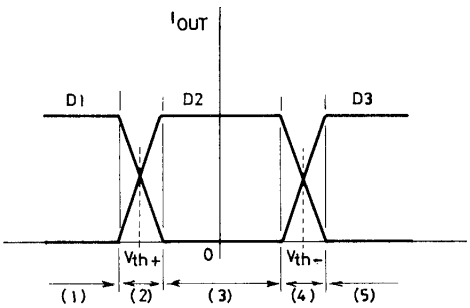
mode	LED lighting mode	tuning condition
(1)	◀ ○ ◁	(–) detuned
(2)	◀ ◍ ◁	semituned
(3)	▷ ● ◁	tuned
(4)	▷ ◍ ◀	semi tuned
(5)	▷ ○ ◀	(+) detuned
(6)	▷ ○ ◁	lighted off

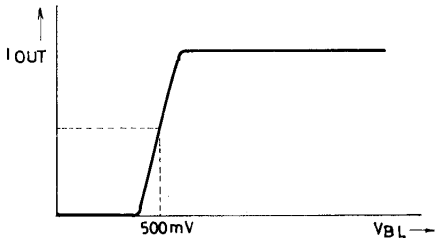
Package Dimensions

unit:mm

3017D-SIP9







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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

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		18	V
Maximum input voltage	V_{INR}	$V_{CC}>V_{INR}$	–0.3 to +16	V
	V_{IN}	$V_{CC}>V_{IN}$	–0.3 to +16	V
	Vcont		–0.3 to +4	V
	V_{BL}	$V_{CC}>V_{BL}$	–0.3 to +16	V
Maximum output voltage	V_{OUT}	Pin 2, 3, 4	16	V
Allowable power dissipation	Pd max	Ta=60˚C	500	mW
Operating temperature	Topr		–20 to +70	˚C

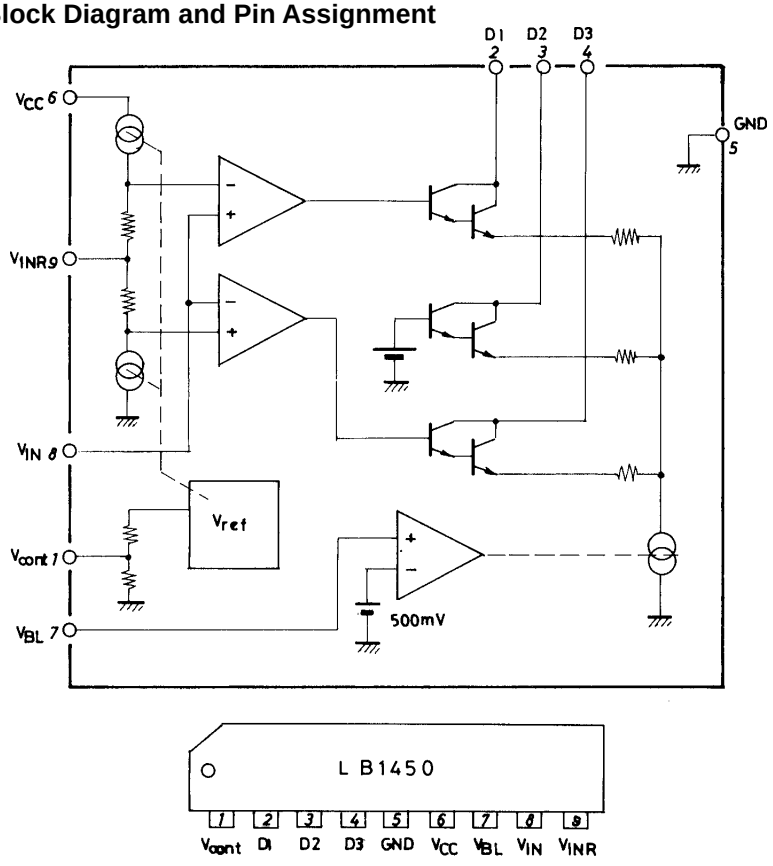
Allowable Operating Ranges at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		8 to 16	V
Tuning indicaiton voltage width	V_T		200	mV

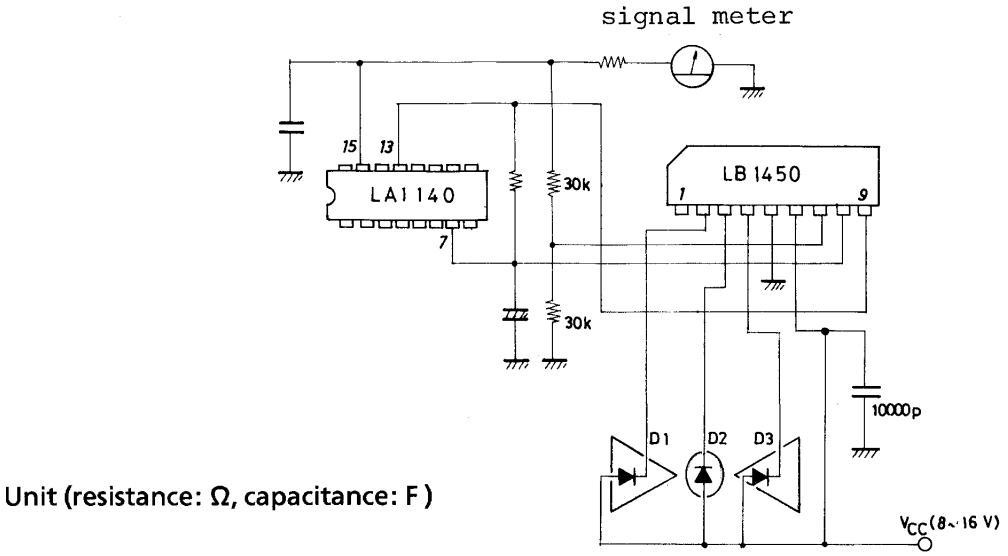
Electrical Characteristics at Ta = 25˚C, V_{CC}=12V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input bias current	I_{IN}		–2		0	µA
	I_{INR}		–20		+20	µA
	I_{INBL}		–2		0	µA
Threshold voltage	V_{th+}	V_{IN}–V_{INR}	150	200	250	mV
	$V_{th–}$	V_{IN}–V_{INR}	–250	–200	–150	mV
Simultaneous lighting width	Vw		30	50	100	mV
Output current	$I_{OUT}1$, $I_{OUT}2$, $I_{OUT}3$		11	18	25	mA
Blanking threshold voltage	$V_{BL(L)}$		360	430	500	mV
	$V_{BL(H)}$		410	500	550	mV
Output leak current	I_{OFF}				10	µA
Current drain	I_{CC}	LED current excluded	3.0	3.8	5.6	mA

Equivalent Circuit Block Diagram and Pin Assignment



Application : The case of window width 400mV typ. (±200mV) and interstation blanking.



Unit (resistance: Ω, capacitance: F)