Ordering number : ENA0680A

SANYO Semiconductors
DATA SHEET

LV5215LF — Bi-CMOS LSI For Use in Cell Phones LED Driver IC

Overview

The LV5215LF is an LED driver IC for use in cell phones.

Features

- Four main LED driver circuits
- Supports two LED current modes
- Miniature package
- Thermal shutdown function

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	V_{CC}	6	V
Maximum input voltage 1	V_1 max	MLED1, MLED2, MLED3, MLED4	6	V
Maximum output current	I_O max	ILED	25	mA
Allowable power dissipation	Pd max	Mounted on a circuit board.*	0.41	W
Operating temperature	Topr		-30 to +75	°C
Storage temperature	Tstg		-40 to +125	°C

* Specified circuit board : 40×50×0.8mm³ : glass epoxy four-layer

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage 1	VBAT		3.0 to 4.5	V

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

Electrical Characteristics at Unless otherwise specified Ta = 25°C, VBAT = 3.7V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[Analog Block] Current drain						
Current drain 1	$I_{CC}1$	VBAT + VDD current drain. CTL: low		0	5	μA
Current drain 2	$I_{CC}2$	CTL : H		3	5	mA
LED Driver Block at R1 = 110kΩ, R2 = 11kΩ						
LED current 1	ILED1	V_O = 0.5V *1	1	2	3	mA
LED current 2	ILED2	V_O = 0.5V *1	18	20	22	mA
Control Circuit Block						
High level 1	$V_{IN}H1$	High-level input *2	1.5		VBAT	V
Low level 1	$V_{IN}L1$	Low-level input *2	0		0.3	V
Switch on state resistance	RON	SWI pin : VBAT		200		Ω

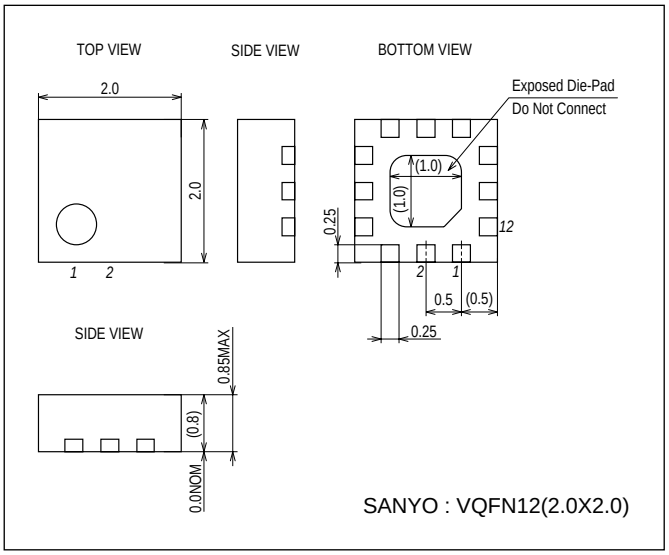
*1 : ILED will have a value about 200 times that of the current (IRT) flowing in the current setting resistor (RT).

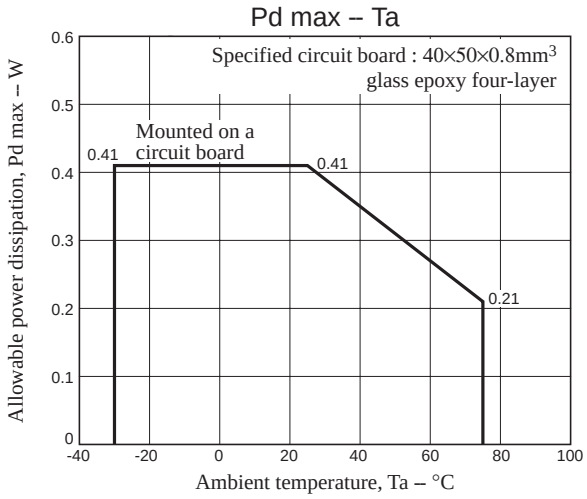
*2 : The IC operates when CTL is high, and stops when CTL is low.

Package Dimensions

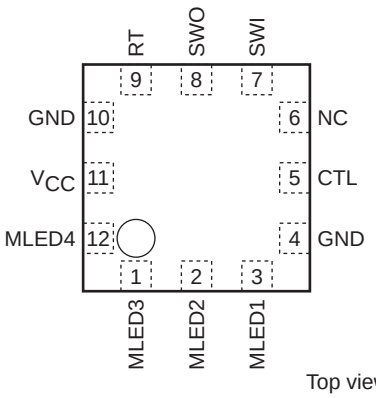
unit : mm (typ)

3335



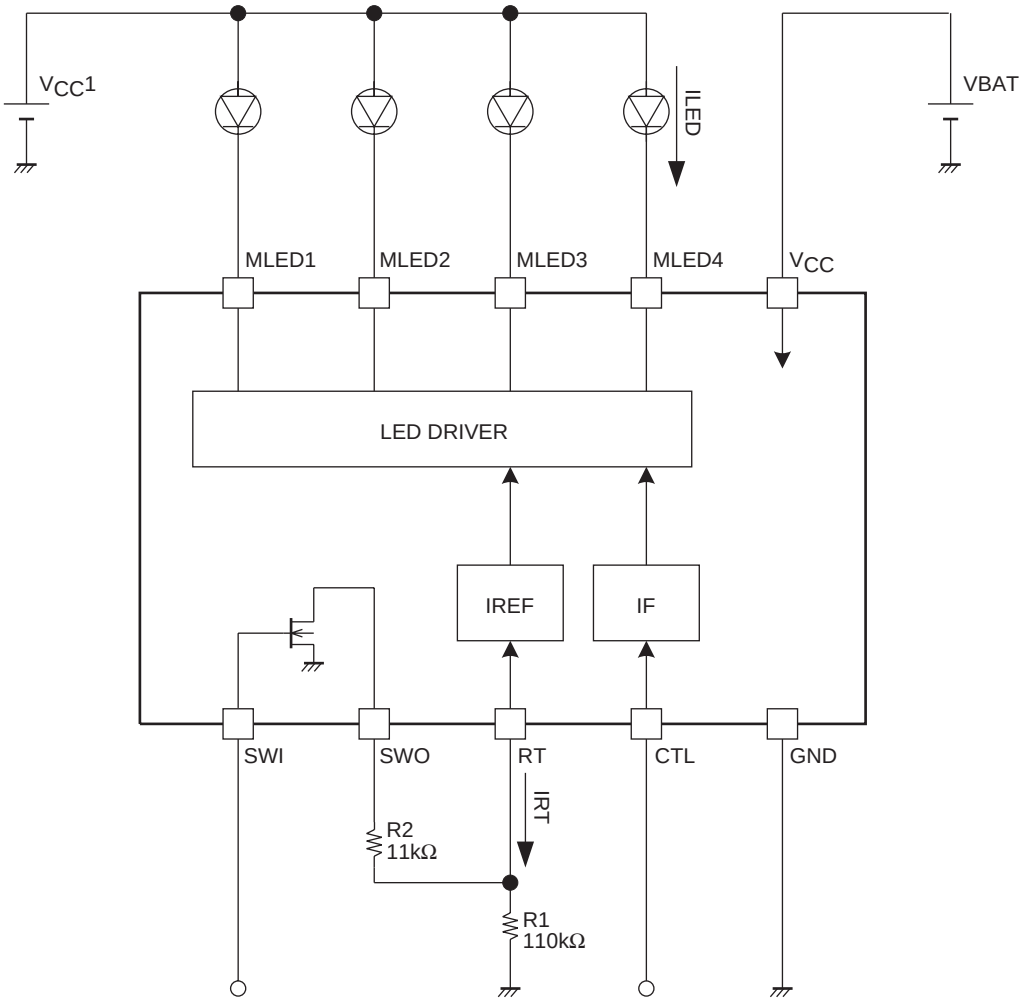


Pin Assignment



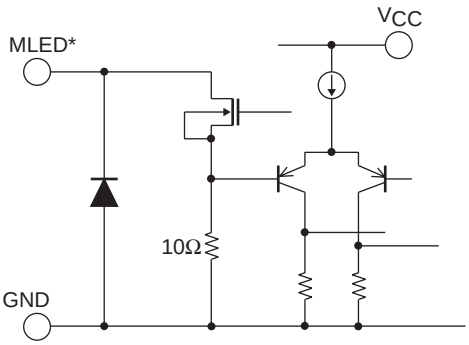
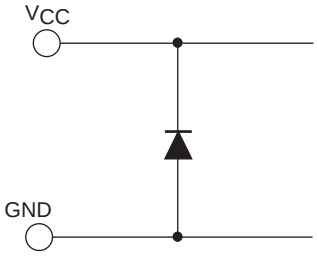
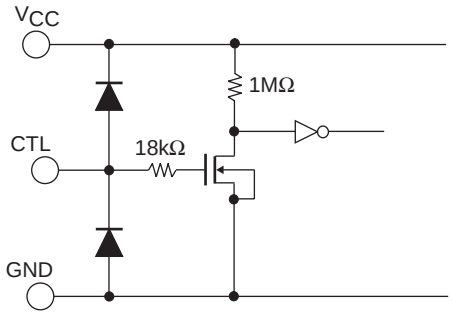
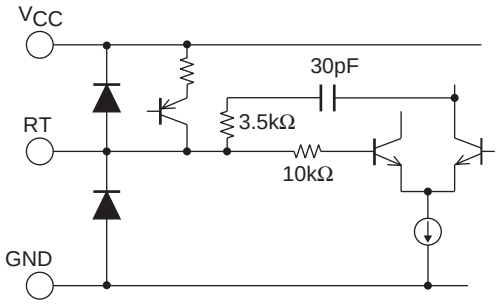
Top view

Block Diagram



ILED = 200 × IRT

Pin Equivalent Circuit

Pin No.	Pin	Description	Equivalent Circuit
1 2 3 12	MLED3 MLED2 MLED1 MLED4	LED driver pin. Feedback is applied so that the current flowing in the output transistor becomes the set current value.	
11	V_{CC}	Power supply.	
5	CTL	The circuits operate when CTL is high. The circuits stop when CTL is low.	
9	RT	Reference current setting resistor connection. The reference current is created by connecting an external resistor to ground. The pin voltage is about 1.0 V. The LED driver current value can be changed by changing this current value.	
7 8	SWI SWO	Current adjustment. The output current can be adjusted using the SWO pin sink current.