



SANYO Semiconductors

# DATA SHEET

## LV5215LF — 4ch LED Driver

Bi-CMOS LSI

### 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 <sub>CC</sub> max	V <sub>CC</sub>	6	V
Maximum input voltage 1	V <sub>1</sub> max	MLED1, MLED2, MLED3, MLED4	6	V
Maximum output current	I <sub>O</sub> max	I <sub>LED</sub>	25	mA
Allowable power dissipation	P <sub>d</sub> max	Mounted on a circuit board.*	0.41	W
Operating temperature	T <sub>opr</sub>		-30 to +75	°C
Storage temperature	T <sub>stg</sub>		-40 to +125	°C

\* Specified circuit board : 40×50×0.8mm<sup>3</sup> : glass epoxy four-layer

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage 1	V <sub>BAT</sub>		3.0 to 4.5	V

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# LV5215LF

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
<b>[Analog Block] Current drain</b>						
Current drain 1	I <sub>CC1</sub>	VBAT + VDD current drain. CTL: low		0	5	μA
Current drain 2	I <sub>CC2</sub>	CTL : H		3	5	mA
<b>LED Driver Block</b> at R1 = 110kΩ, R2 = 11kΩ						
LED current 1	I <sub>LED1</sub>	V <sub>O</sub> = 0.5V *1	1	2	3	mA
LED current 2	I <sub>LED2</sub>	V <sub>O</sub> = 0.5V *1	18	20	22	mA
<b>Control Circuit Block</b>						
High level 1	V <sub>INH1</sub>	High-level input *2	1.5		VBAT	V
Low level 1	V <sub>INL1</sub>	Low-level input *2	0		0.3	V
Switch on state resistance	RON	SWI pin : VBAT		200		Ω

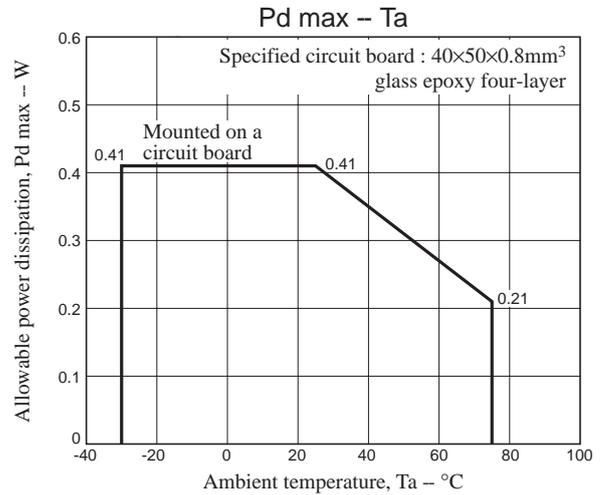
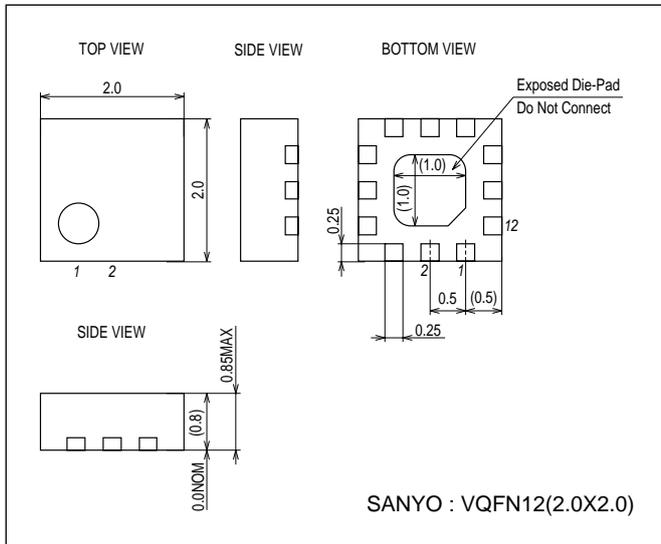
\*1 : ILED will have a value about 200 times that of the current (IRT) flowing in the current setting resistor (RT).

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

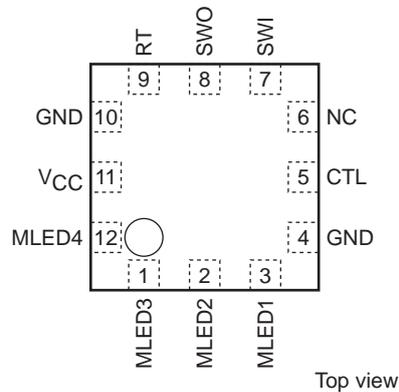
## Package Dimensions

unit : mm (typ)

3335

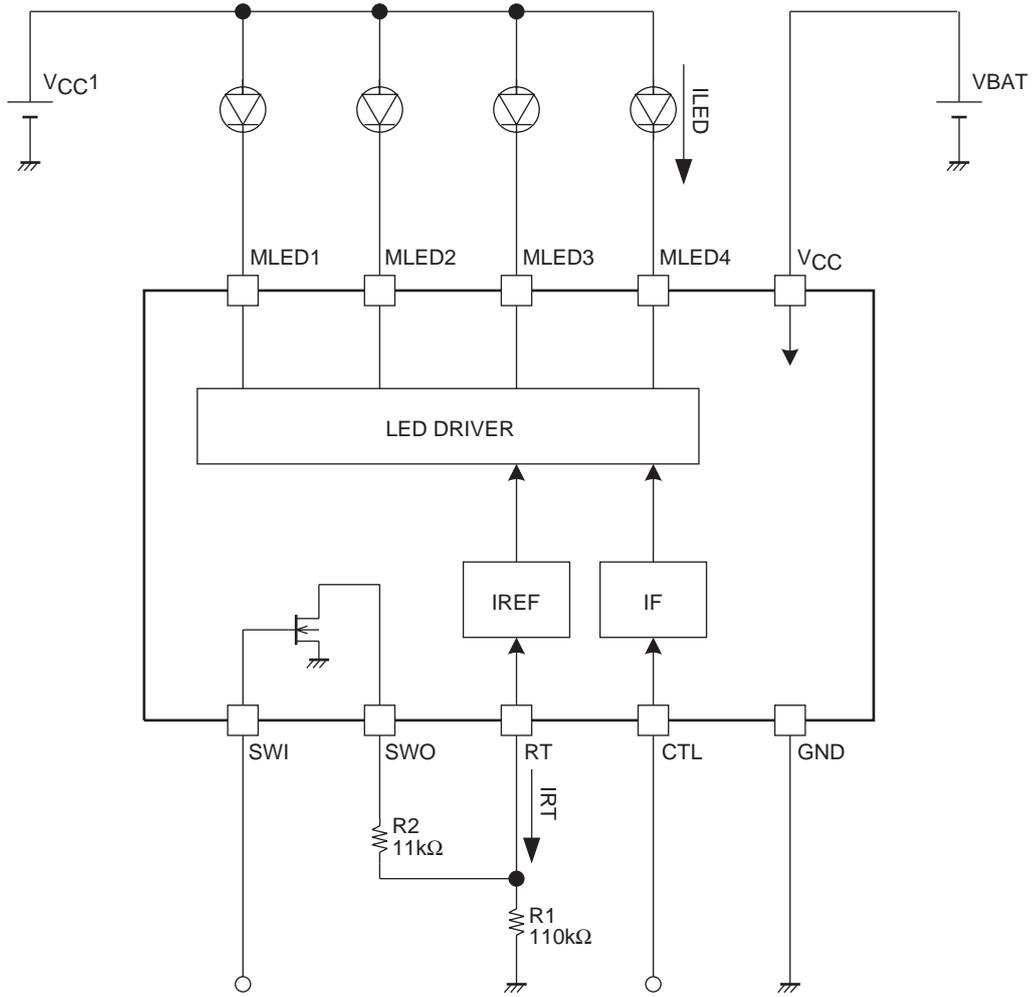


## Pin Assignment



# LV5215LF

## Block Diagram



$$I_{LED} = 200 \times I_{RT}$$

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## 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	VCC	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.	

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