



Raffar
Technology Corp.

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RFT1150

4 Constant Current RGBW outputs LED Driver

2010/8/03

Version: 0.1 (Brief)

Description

RFT1150 is a multi-output constant current LED driver. With its linear architecture, the external circuits can be significantly simplified to 4 external resistors for adjusting the RGBW (or amber) output current. RFT1150 provides a maximum sink current of 350 mA for each channel, with a reasonable value of the external resistor. The output pin of RFT1150 endures a maximum voltage of 17 V, allows more series power LEDs in a string. Besides, users can perform dimming control through the individual output enable signals for RGBW lighting.

Features

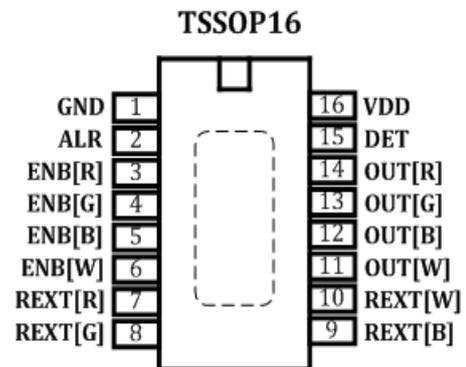
- Operating supply voltage: 3.3 V ~ 5 V
- Constant current output:
20 mA ~ 350 mA ($V_{DD} = 5 V$)
- Max. output voltage: 17 V
- Max. output enable frequency: 1 MHz
- Accurate output current adjustment through individual external resistors
- Thermal protection (auto current reduction
High/low threshold: 180 °C & 120 °C)
- Thermal alarm (over 140 °C)
- LED open detection

Application

High brightness LED lighting

Architectural or entertainment LED lighting

Pin Assignment



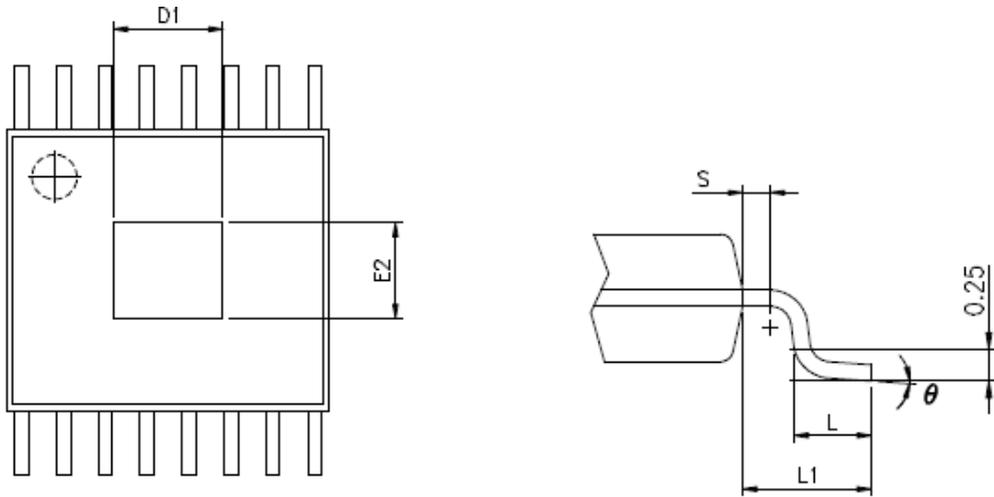
| Pin No. | Pin Name | Description |
|---------|----------|--|
| 1 | GND | Ground terminal |
| 2 | ALR | Thermal alarm terminal |
| 3 | ENB[R] | Enable signal for current output, R (active low) |
| 4 | ENB[G] | Enable signal for current output, G (active low) |
| 5 | ENB[B] | Enable signal for current output, B (active low) |
| 6 | ENB[W] | Enable signal for current output, W (active low) |
| 7 | REXT[R] | External resistor, R |
| 8 | REXT[G] | External resistor, G |
| 9 | REXT[B] | External resistor, B |
| 10 | REXT[W] | External resistor, W |
| 11 | OUT[W] | Current output, W |
| 12 | OUT[B] | Current output, B |
| 13 | OUT[G] | Current output, G |
| 14 | OUT[R] | Current output, R |
| 15 | DET | Thermal Detection |
| 16 | VDD | Supply voltage (5 V) |

Order Information

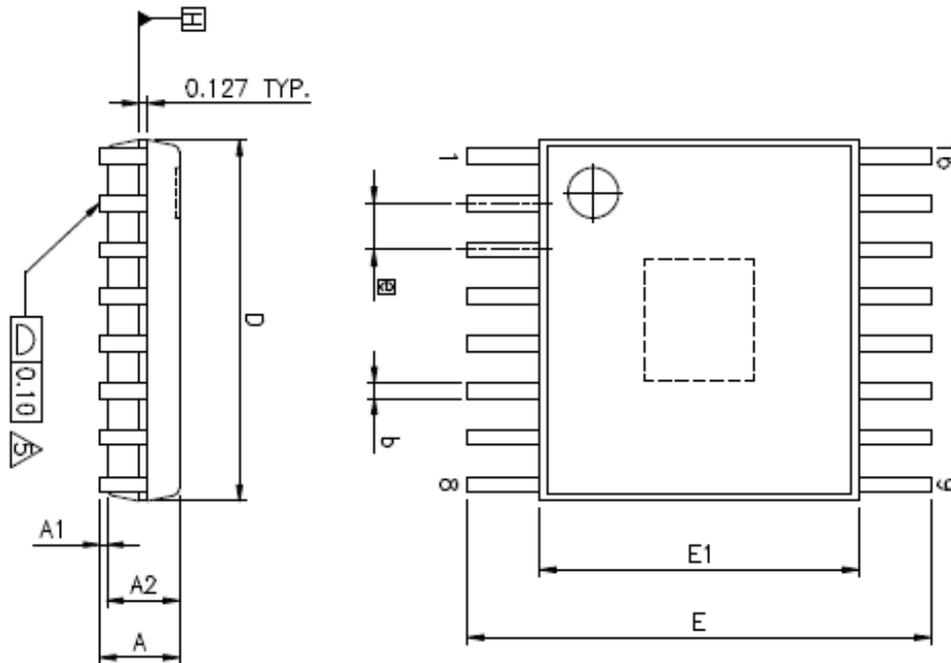
| No. | Part No. | Package |
|-----|-----------|--------------------------|
| 1 | RFT1150TS | TSSOP16 with thermal pad |

Package Outline Dimension

TSSOP16 (173 mil-0.65 mm)



THERMALLY ENHANCED VARIATIONS ONLY





VARIATIONS (ALL DIMENSIONS SHOWN IN MM)

| SYMBOLS | MIN. | NOM. | MAX. |
|----------|----------|------|------|
| A | — | — | 1.20 |
| A1 | 0.00 | — | 0.15 |
| A2 | 0.80 | 1.00 | 1.05 |
| b | 0.19 | — | 0.30 |
| D | 4.90 | 5.00 | 5.10 |
| E1 | 4.30 | 4.40 | 4.50 |
| E | 6.40 BSC | | |
| e | 0.65 BSC | | |
| L1 | 1.00 REF | | |
| L | 0.45 | 0.60 | 0.75 |
| S | 0.20 | — | — |
| θ | 0° | — | 8° |

THERMALLY ENHANCED DIMENSIONS(SHOWN IN MM)

| PAD SIZE | E2 | | D1 | |
|----------|------|------|------|------|
| | MIN. | MAX. | MIN. | MAX. |
| 118X11E | 2.40 | 3.00 | 2.40 | 3.00 |