

Magic9

Data sheet

** This specifications are subject to be changed without notice*

Magic9 Revision History

| Version | Contents | Date |
|---------|-----------------|------------|
| 0.0 | - First Version | 2011.08.23 |

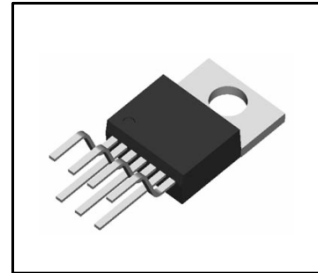
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DESCRIPTION

The Magic9 is specifically designed for LED lighting applications for AC power system. The main applications are LED lighting.

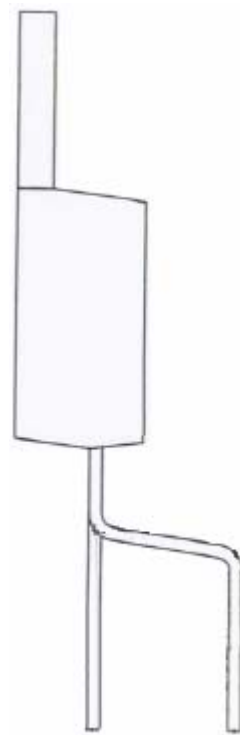
FEATURES

- Constant output current channel : 1
- Maximum sinking output voltage : 320V
- Package : TO220B-7L



TO220B-7L

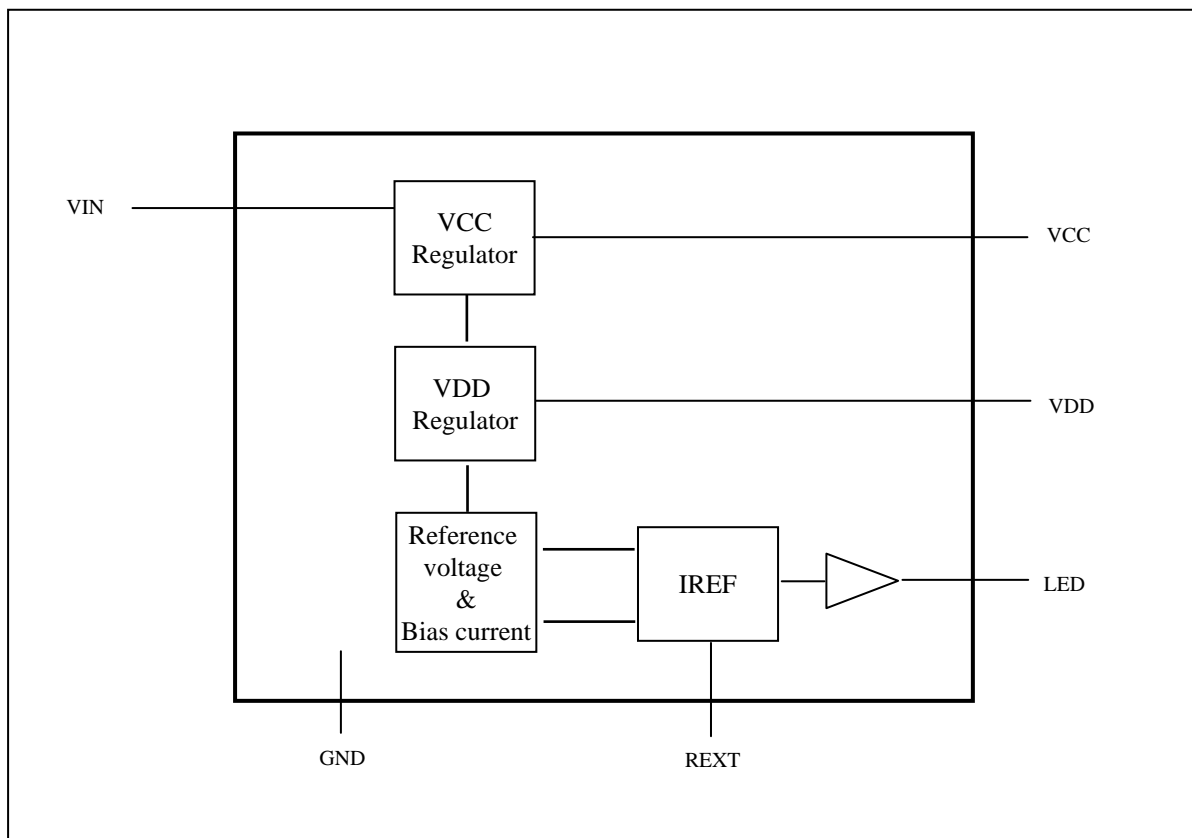
PIN CONFIGURATION



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PIN DESCRIPTION

| PIN NO. | PIN NAME | DESCRIPTION |
|---------|----------|-------------------------------|
| 1 | VIN | Power Input Terminal |
| 2 | VCC | High Voltage Power Terminal |
| 3 | VDD | Internal Logic Power Terminal |
| 4 | NC | |
| 5 | REXT | Resistor connected to GND |
| 6 | LED | LED Driver Terminal |
| 7 | GND | Ground Terminal |

BLOCK DIAGRAM


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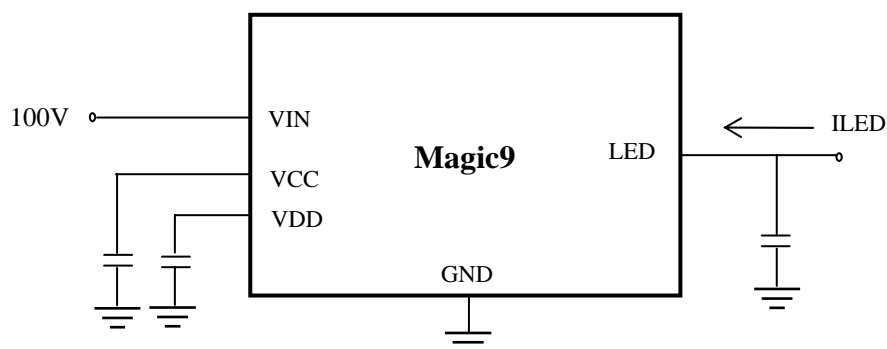
ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

| PARAMETER | SYMBOL | RATING | UNIT |
|----------------------|-------------------|-----------|------|
| Supply Voltage | VIN | 350 | V |
| Output Voltage | VCC | 20 | V |
| Output Current | ILED | 120 | mA |
| Power Dissipation | PD | 2.5 | W |
| Storage Temperature | T _{stg} | -65 ~ 150 | °C |
| Junction Temperature | T _{jmax} | 150 | °C |

(Note) Ambient temperature derated above 25°C in the proportion of 20 mW/ °C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| DC CHARACTERISTICS | SYMBOL | MIN | TYP | MAX | UNIT |
|--|------------------|-----|-----|-----|------|
| VIN Supply Voltage | VIN | 0 | | 315 | V |
| LED Driver Output Current (REXT = 18 kΩ) | ILED | 58 | 62 | 66 | mA |
| VCC Output Voltage | VCC | 9 | | 16 | V |
| VDD Output Voltage | VDD | 3.5 | 5 | 6.5 | V |
| Operating Temperature | T _{opr} | -40 | | 85 | °C |

DC CHARACTERISTIC TEST CIRCUIT


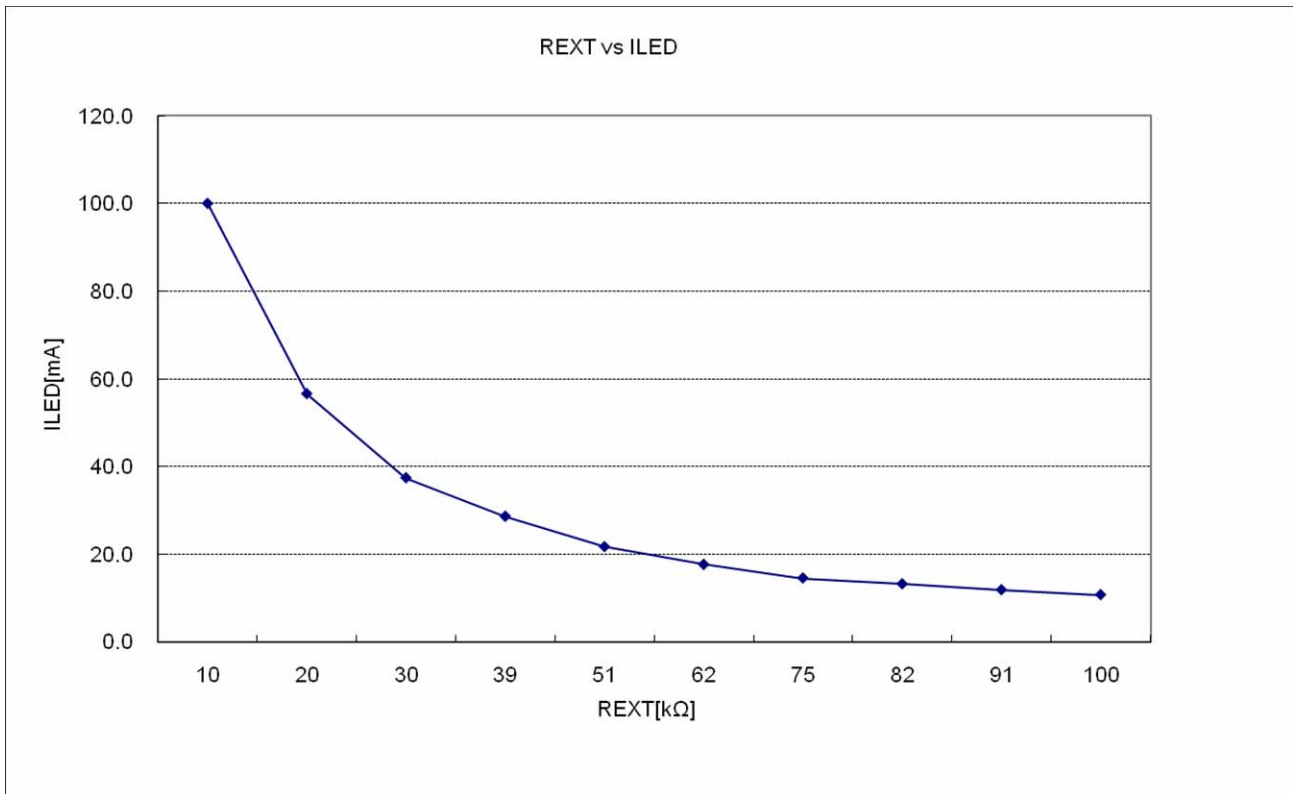
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ADJUSTING OUTPUT CURRENT

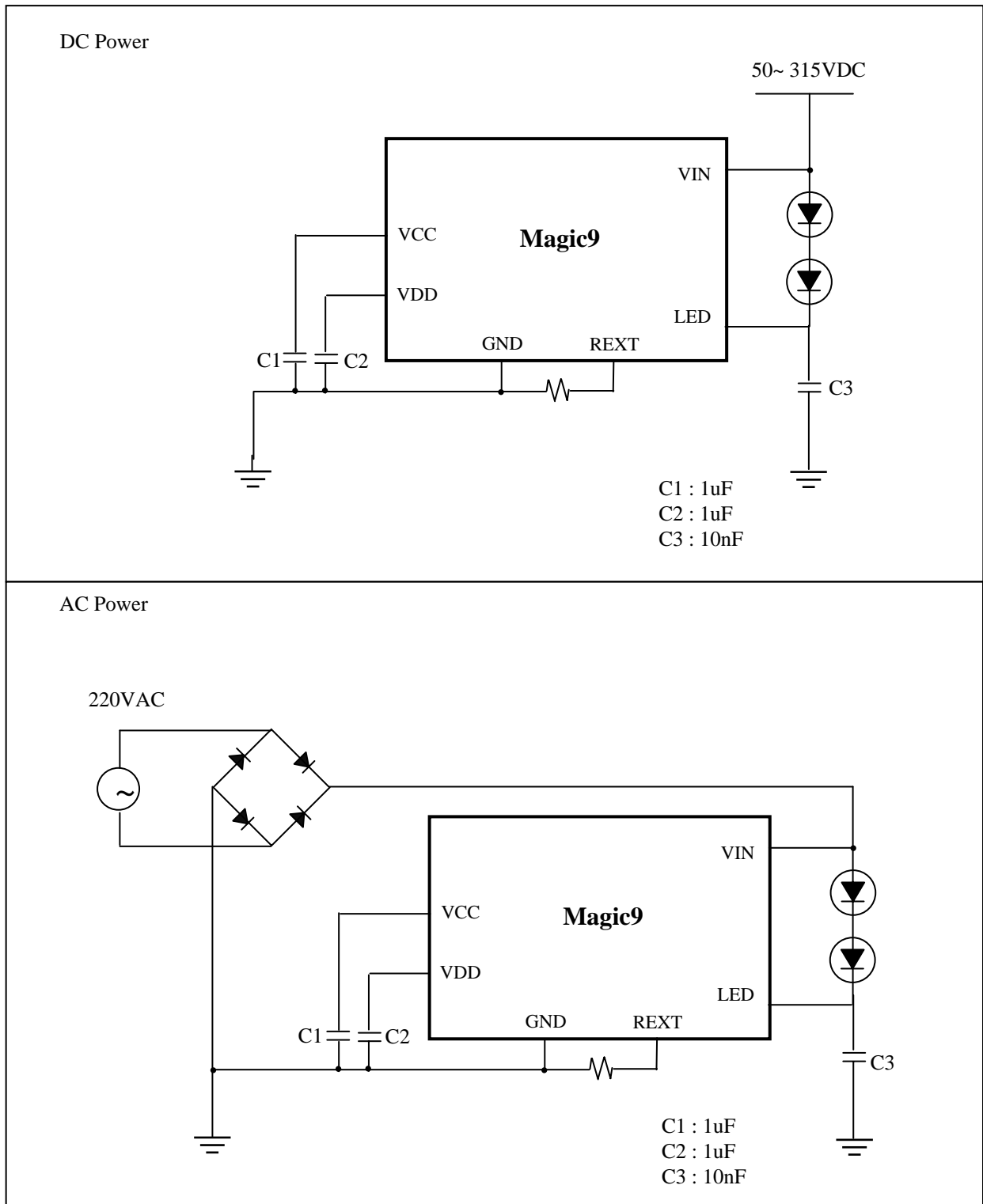
The output current is determined by an external resistor(1% range).

The relationship between ILED and REXT are follows;

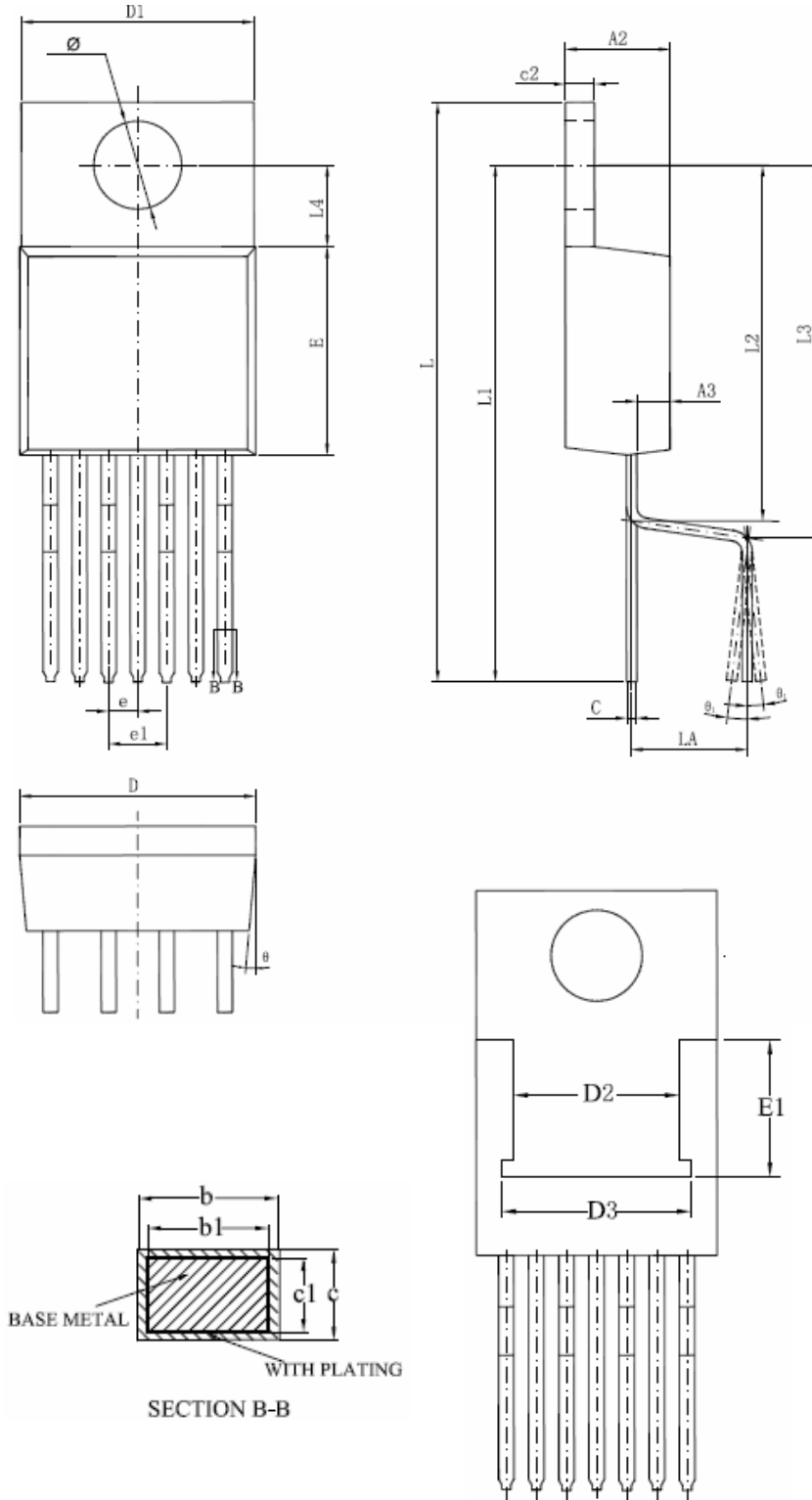
$$I_{LED} [A] = 1100 / R_{EXT}$$



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TYPICAL APPLICATION


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TO220B-7L


| SYMBOL | MILLIMETER | | |
|--------------------|------------|-------|-------|
| | MIN | NOM | MAX |
| A2 | 4.47 | 4.57 | 4.67 |
| A3 | 1.47 | 1.52 | 1.57 |
| b | 0.63 | - | 0.73 |
| b1 | 0.62 | 0.65 | 0.68 |
| c | 0.37 | - | 0.44 |
| c1 | 0.36 | 0.38 | 0.39 |
| c2 | 1.26 | - | 1.32 |
| D | 10.00 | 10.10 | 10.20 |
| D1 | 10.06 | 10.26 | 10.46 |
| D2 | 7.00REF | | |
| D3 | 8.00REF | | |
| E | 8.30 | 8.40 | 8.50 |
| E1 | 5.80REF | | |
| L | 25.07 | 25.27 | 25.47 |
| L1 | 22.32 | 22.52 | 22.72 |
| L2 | 14.72 | 14.92 | 15.12 |
| L3 | 16.77 | 16.97 | 17.17 |
| L4 | 3.46 | 3.56 | 3.66 |
| e | 1.27BSC | | |
| e1 | 2.54BSC | | |
| LA | 4.78 | 5.08 | 5.38 |
| \emptyset | 3.79 | 3.84 | 3.89 |
| θ | - | 5° | - |
| θ_1 | 0° | - | 3° |
| L/F Pad size (mil) | 177 * 177 | | |

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