

DLPA3005 Series LEDs Guide - Customer Version

Updated on 9/25/2023

Baseline 11/30/18 Rev A

Topics

- DLPA3005 Series LED Use Cases
- DLPA3005 Series LED Capabilities
- Example Configuration with Series LEDs

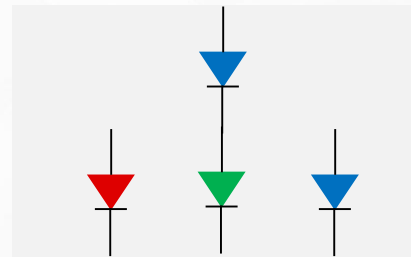
DLPA3005 Series LEDs - Chipsets Use Cases

- Chipsets:

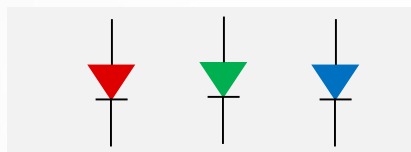
- ❑ DLPC3433/3438 + DLP3010 DMD + DLPA3005
- ❑ DLPC3437 + DLP3310 DMD + DLPA3005
- ❑ DLPC3439 + DLP4710 DMD + DLPA3005

- New Supported Configuration:

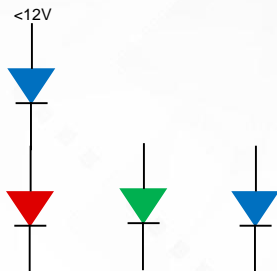
- ❑ DLPA3005 PMIC/LED drivers
 - ❑ Increased illumination capability with DLPA3005 Single and Series LED
 - ❑ **Requires Series LED Software**



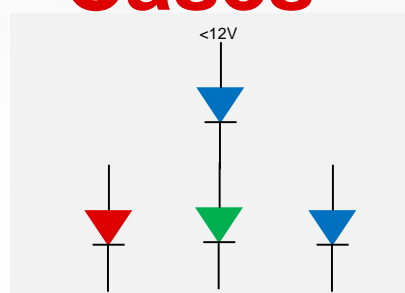
DLPA3005 Series LED – Cases



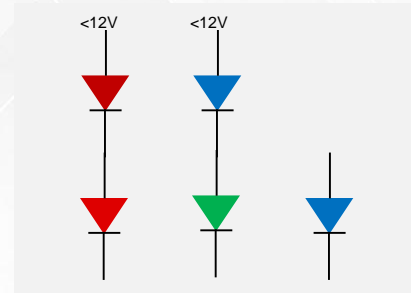
In Production



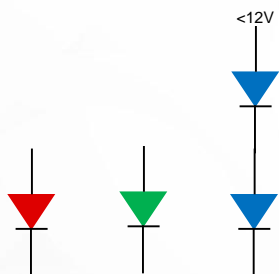
Case 1



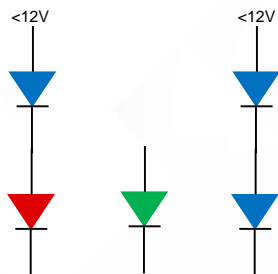
Case 2
(Top-side pumped G)



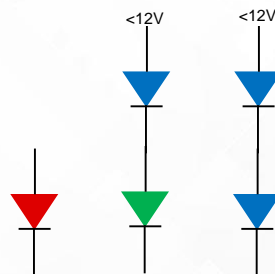
Case 3
(Top-side pumped G)



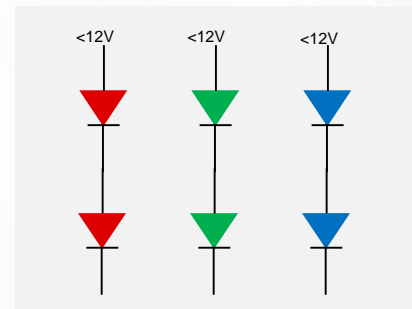
Case 4



Case 5



Case 6



Case 7
(RGB Series)

Typical Applications

[Note1: Supports up to 16A for all Typical Applications](#)

[Note2: Supports up to 32A for Case 2 Top Side Pump with updated schematics](#)

DLPA3005 Series LED Capabilities

Parameters	DLPA3005 16A Design
Input Voltage (VIN)	*14.5-20V
Output LED Voltage (VLED) Max	15.5V
Max Output Current (ILED) based on Reference Schematic	16A
Output Inductor (I _{out})	1μH
**Output Capacitance (I _{out})	88μF

*Ratio metric VIN/VLED design requires higher minimum input voltage to support series LEDs as well as Series LED Software

- VLED Supported Example: $14.5V * 0.85 = 12V$

****Note:** Illumination Inductor (I_{out}) and Capacitor (C_{out}) value selection is based on expected output voltage and current from equations in DLPA3005 datasheet. The reference hardware design is intended to cover a wide selection of LEDs and is not fully optimized.

Changes to Hardware Configuration for Top Side Pump @16A

- DLPA3005 Series LED with 1uH Lout Inductor, 88uF Cout and RC Filter based
 - VIN voltage support of 14.5-20V
 - Improved Voltage Response with RC Filter

