# INNOVATE FOR LIGHT



### **MBI6673 Product Introduction**

单电感多通道输出降压式高功率LED控制芯片

## Lighting Product Roadmap



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# Lighting Product Roadmap



### Single inductor multi output -MBI6673



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# Traditional Stage Lighting Configuration



Each color of LED string would be lighted by one driver, inductor and diode!



## 4 in 1 LED





# **MBI6673 Application Circuit**



Compared to application circuit in P.5, MBI6673 could save 3 inductors, 3 diodes and 3 drivers.



# **MBI6673 Features**

- \* Buck controller of current loading up to 5A.
- $\star$  V<sub>IN</sub>: 12V to 55V.
- \* Hysteretic PFM Configuration without external compensation components.
- ★ Switching Frequency: 40~500 kHz.
- ★ Support PWM Dimming.
- ★ Dimming Resolution: 12bit@4 kHz.
- \* **Protection:** 
  - LED open circuit protection, OTP, UVLO.
- ★ Package: TSSOP-24, QFN4×4-24.





### MBI6673 Block Diagram

#### **DC/DC Switching Logic Circuit**



Shunt Dimming Control Circuit

### <sup>••••••</sup> MBI6673 Block Diagram Snubber circuit of shunt dimming MOS





## **Snubber Circuit Design**



The snubber design of  $R_{SNB}$  and  $C_{SNB}$  is dependent on the length of wire between LED and control board because wire length would affect  $L_R$  and  $C_R$ .



### Macroblock MBI6673 Block Diagram **Shunt Dimming Signal**



### Macrobleck MBI6673 Block Diagram Adjustable Output Current Calibrator



# ACC Compensation Circuit





### Summary

• Support 4-in-1 LED

- Individual PWM shunt dimming channels of RGBW
  - Help customers save BOM cost: 3 inductors, 3 Diodes/MOSFETs & 3 drivers.
- Very high dimming resolution by Shunt-Dimming
  - Dimming signals for RGBW need to be synchronized.
  - Snubber design is very important.
- It is ideal for stage lighting, wall washer lighting and automotive alarm lighting.



### Thank You!

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