

■ 产品特点

- ◆ 666mA 恒流输出，不随输入电压变动
- ◆ 内建 0.3Ω 低导通 MOSFET
- ◆ 具过电流保护、过温度保护、LED 开路与短路保护
- ◆ 通过 CISPR_B03M_QP 辐射 EMI 测试

■ 电气规格

输入电压范围: 12V_{DC}

输出电压范围: 1 颗 LED

输出电流: 666mA ($I_{OUT} = V_{SEN} / R_{SEN}^* = 0.1 / R_{SEN}^*$)

输出电流精确度: 最大±5%

转换效率: 75%

*: 为了降低 R_{SEN} 的误差，建议使用精度 1% 的 R_{SEN} 电阻

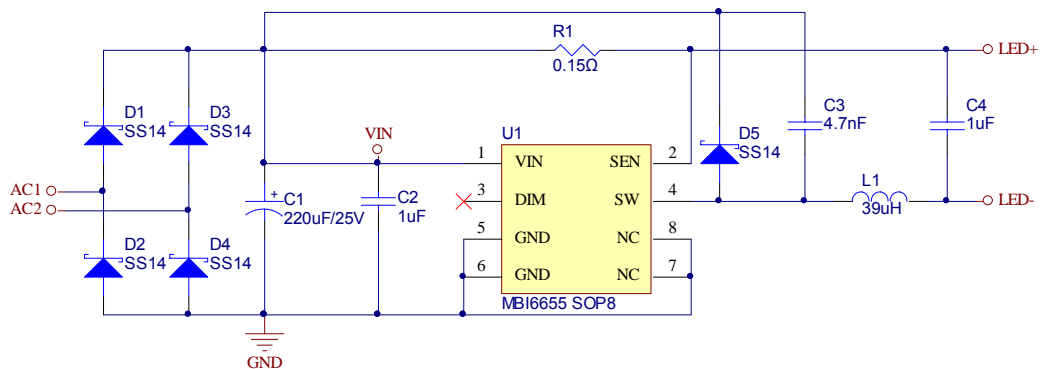
■ 电路尺寸

长度: 17.63mm

宽度: 19.26mm

高度: 11.09mm

■ 电路图



R1: VIKING, 0.15Ω,0805, ±1%, SMD Resistor

C1: JACKCON, 220uF/25V, 6*11, DIP, electrolytic capacitor

C2, C4: VIKING, 1uF/16V, MC03FTB160105, X7R 0603 SMD ceramic capacitor,

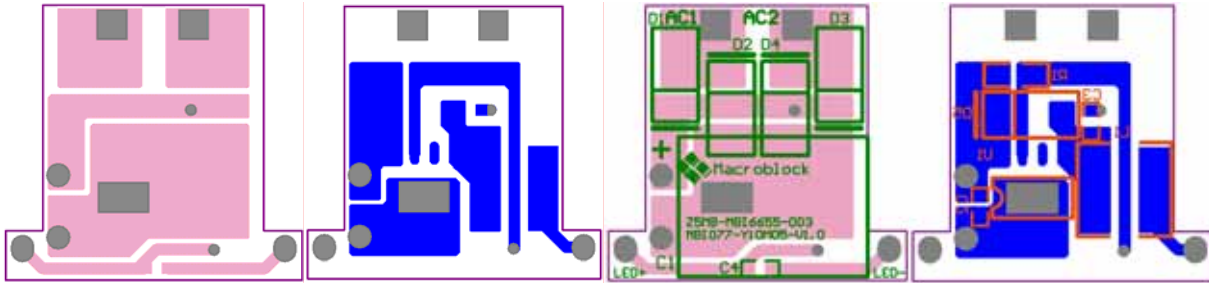
C3: VIKING, 4.7nF/16V, MC03FTB160472, X7R 0603 SMD ceramic capacitor

L1: GOLDENCONNECTIONS, SCD0503T-390M-WE

D1, D2, D3, D4, D5: PANJIT, 40V/1A, SS14

图 1. 应用电路

■ 电路布局



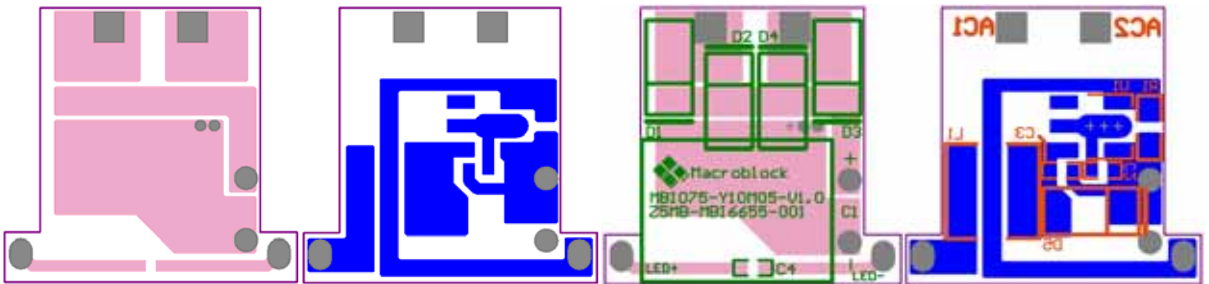
上层
(Top layer)

下层
(Bottom layer)

上层覆盖层
(Top-Over layer)

底层覆盖层
(Bottom-Over layer)

(a) GD 包装



上层
(Top layer)

下层
(Bottom layer)

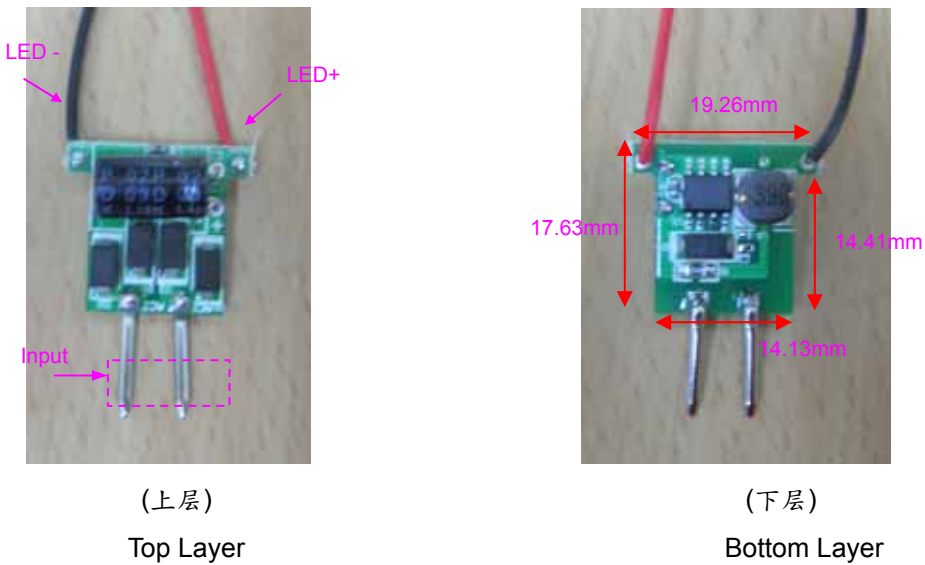
上层覆盖层
(Top-Over layer)

底层覆盖层
(Bottom-Over layer)

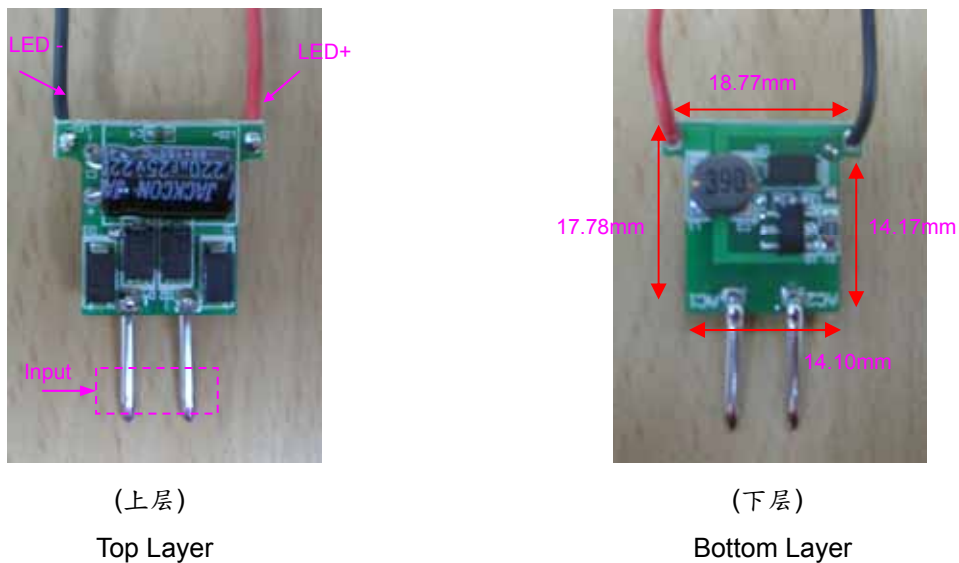
(b) GSB 包装

图 2. 各层电路布局

■ 实体电路配置与照片



(a) GD 包装



(b) GSB 包装

图 3. 实体电路照片图

■ 脚位功能描述

脚位名称	功能描述
Input	输入电源连接脚位，因为 Demoboard 本身有桥式整流器，因此不需担心电源逆接问题。
LED+/-	MR16 Demoboard 输出端，请连接至 LED 正/负端。

■ 组件清单

表 1. 组件清单(GD 包装)

Designator	Part Type	Description	Vendor	Contact Window
C1	220uF/25V	DIP ,electrolytic capacitor	JACKCON	+886-2278-2210
C2, C4	1uF/16V	0603 / X7R / SMD ceramic capacitor	VIKING	+886-3-597-2931-5818
D1,D2,D3,D4,D5	SS14	40V/1A Surface Mount Schottky Barrier Rectifier	PANJIT	+886-7-621-3121-212
L1	39uH	SCD0503T-390M-WE	GOLDENCONNECTIONS	+886-3-5932808-60
R1	0.15Ω	0805 SMD Resistor	VIKING	+886-3-597-2931-5818
U1	MBI6655	Step-Down, 1A LED Driver, SOP8	MBI	+886-3-579-8934

表 2. 组件清单(GSB 包装)

Designator	Part Type	Description	Vendor	Contact Window
C1	220uF/25V	DIP ,electrolytic capacitor	JACKCON	+886-2278-2210
C2, C4	1uF/16V	0603 / X7R / SMD ceramic capacitor	VIKING	+886-3-597-2931-5818
D1,D2,D3,D4,D5	SS14	40V/1A Surface Mount Schottky Barrier Rectifier	PANJIT	+886-7-621-3121-212
L1	39uH	SCD0503T-390M-WE	GOLDENCONNECTIONS	+886-3-5932808-60
R1	0.15Ω	0805 SMD Resistor	VIKING	+886-3-597-2931-5818
U1	MBI6655	Step-Down, 1A LED Driver, SOT89	MBI	+886-3-579-8934

*: 详细组件说明参考 MBI6655 Design Tool 或 MBI6655 应用说明书。

■ 操作方式

◆ 基本操作

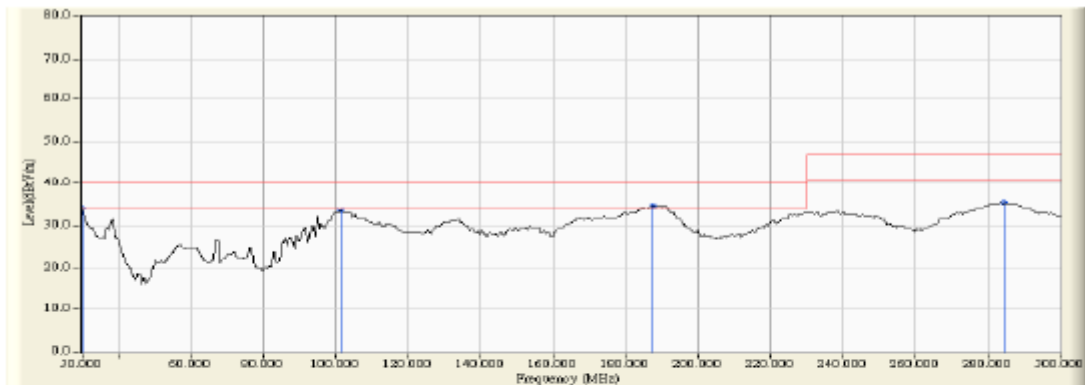
1. 首先把 LED 正端接于 LED+，LED 负端接于 LED-。
2. 将电子式变压器的输出端接于 MR16 的 Input 端，即可点亮 LED。

■ 辐射 EMI 量测结果



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	101.357	-22.701	60.600	37.899	-2.101	40.000	PEAK
2		227.100	-20.268	57.800	37.534	-2.468	40.000	PEAK
3		289.200	-15.167	60.000	44.833	-2.167	47.000	PEAK

(a)辐射 EMI 量测(水平)



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		30.000	-10.960	45.000	34.040	-5.960	40.000	PEAK
2		101.357	-20.963	54.600	33.637	-6.363	40.000	PEAK
3	*	187.757	-16.309	51.000	34.691	-5.309	40.000	PEAK
4		284.571	-15.757	51.200	35.443	-11.557	47.000	PEAK

(b)辐射 EMI 量测(垂直)

图 4. GD 包装

MBI6655 MR16 Demoboard User Manual V1.00-CN



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	38.871	-18.154	41.000	22.846	-17.154	40.000	PEAK
2	101.743	-22.801	45.200	22.400	-17.800	40.000	PEAK
3	* 247.929	-16.680	60.400	43.720	-3.280	47.000	PEAK

(a) 辐射 EMI 量测(水平)



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	39.643	-12.538	40.400	27.862	-12.138	40.000	PEAK
2	90.943	-23.350	52.400	29.050	-10.950	40.000	PEAK
3	* 245.614	-12.866	49.800	36.934	-10.066	47.000	PEAK

(b) 辐射 EMI 量测(垂直)

图 5. GSB 包装