DN70
ZXSC400 Driving 2 serial high power LEDs

Description

This design note shows the ZXSC400 driving 2 serial LEDs. The input voltage ranges from 2V to 3.6V with a maximum output current of 360mA from 2.6V input.

Figure 1 shows a typical constant current solution with the ZXSC400 driving two 1W LEDs in series. The wide input voltage range allows the use of different battery cell combinations. This could be dual alkaline cells with voltage starting from 3V down to 2V or triple NiCad/NiMH cells with voltage starting from 3.6V down to 2.7V.

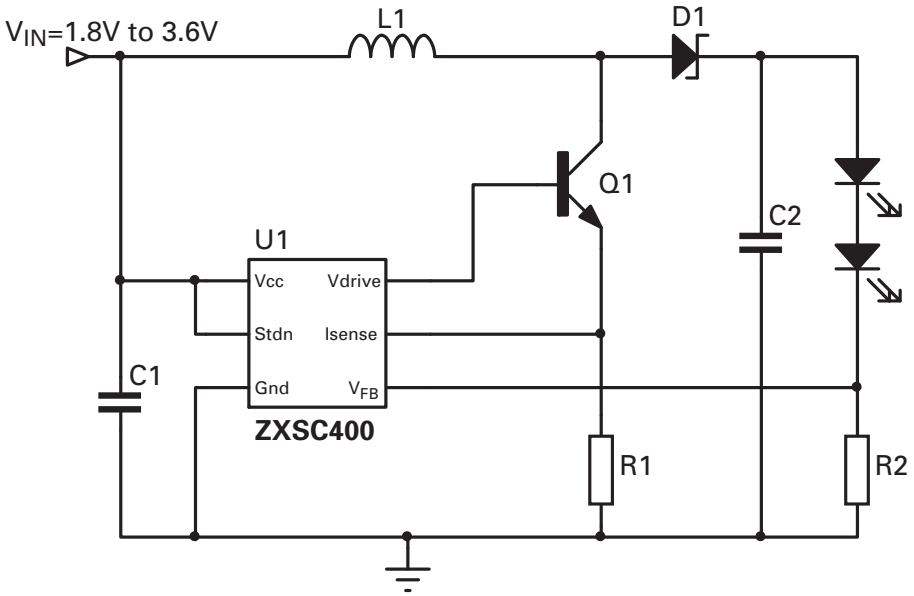


Figure 1 Schematic diagram

Ref.	Value	Part number	Manufacturer	Comments
U1		ZXSC400E6	Zetex	LED driver in SOT23-6
Q1		ZXTN25012EFH	Zetex	Low sat. NPN transistor in SOT23
D1	2A	ZHCS2000	Zetex	2A Schottky in SOT23
L1	22μH	Generic	Generic	I_{SAT} = 2A
R1	18mΩ	Generic	Generic	0805 size
R2	820mΩ	Generic	Generic	0805 size
R3	1KΩ	Generic	Generic	0805 size
C1	22uF/10V	Generic	Generic	
C2	100uF/10V	Generic	Generic	
C3	220nF/10V	Generic	Generic	0805 size

Table 1 Bill of materials

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Typical operating characteristics

(For typical application circuit where T_{amb} = 25°C unless otherwise stated)

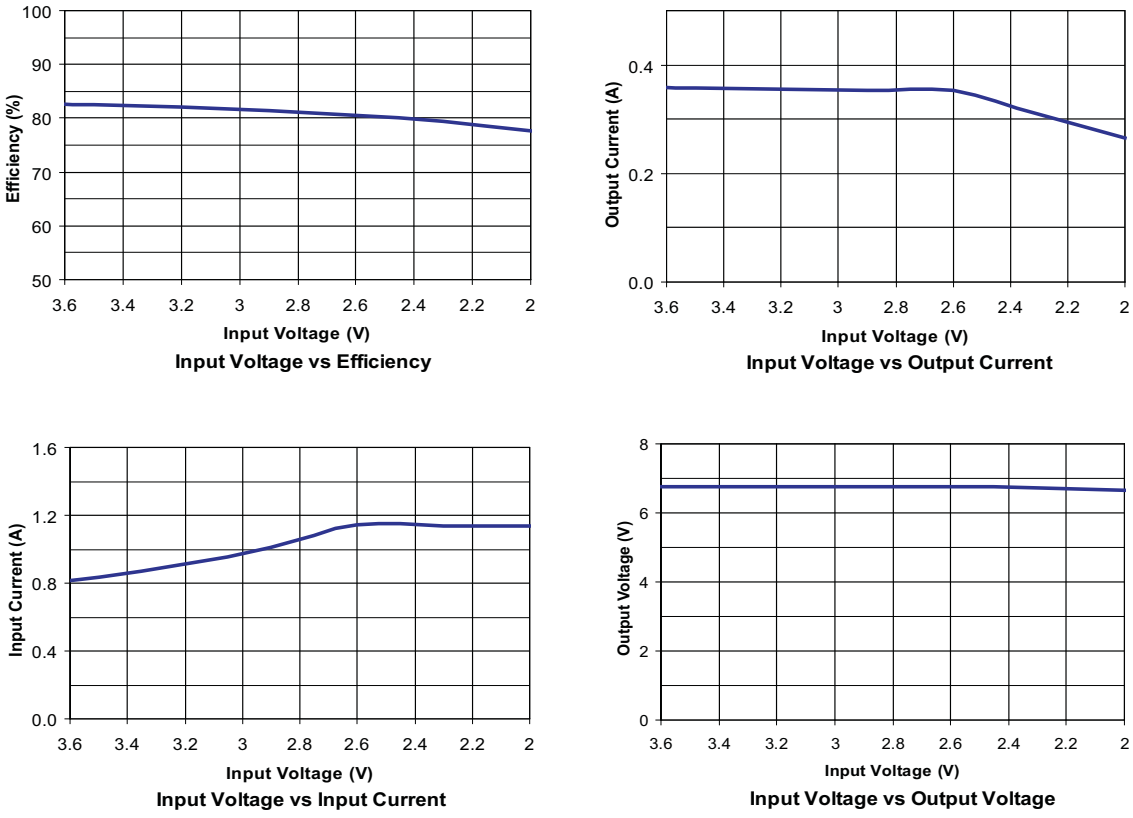


Figure 2 Performance graphs

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