

DN68

ZXSC310 High power torch reference design

Description

This design note shows a typical ZXSC310 LED driver circuit for a high powered LED torch. The input voltage ranges from 0.7V to 1.6V with a maximum output current of 335mA at 1.4V input.

A typical schematic diagram is shown in Figure 1.

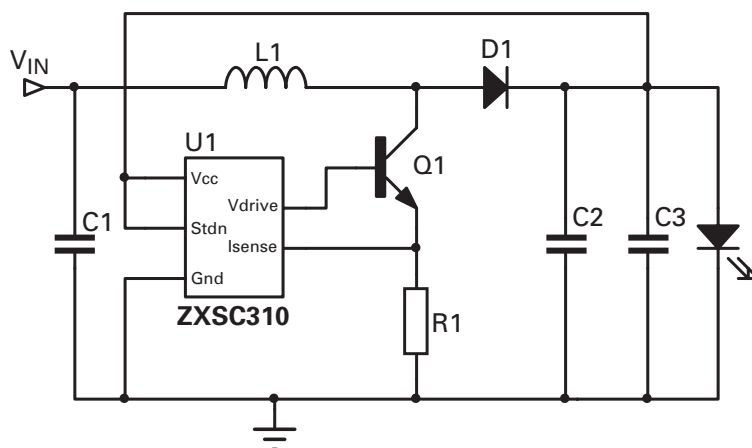
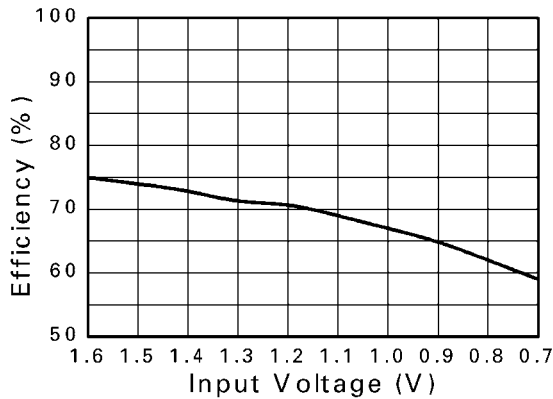


Figure 1 Schematic diagram

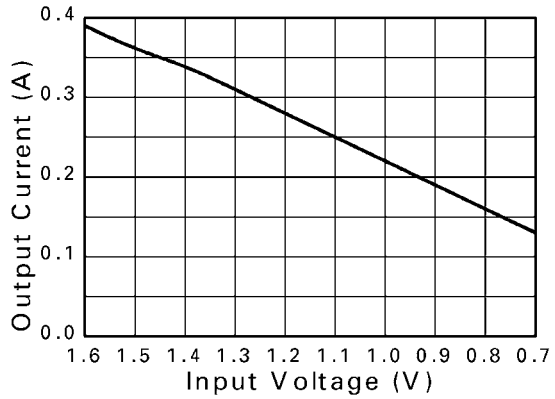
Reference	Value	Part number	Manufacturer	Contact details	Comments
U1		ZXSC310E5	Zetex	www.zetex.com	LED driver in SOT23-5
Q1		FMMT617	Zetex	www.zetex.com	Low sat. NPN in SOT23
D1	2A	ZHCS2000	Zetex	www.zetex.com	2A Schottky in SOT23
L1	7.5 μ H	DO3316P-153x2	Coilcraft	www.coilcraft.com	$I_{SAT} = 3A$
R1	19.5m Ω	Generic	Generic	NA	0805 size
C1	1 μ F	Generic	Generic	NA	
C2	220 μ F	Generic	Generic	NA	
C3	100 μ F	Generic	Generic	NA	

Table 1 Bill of materials

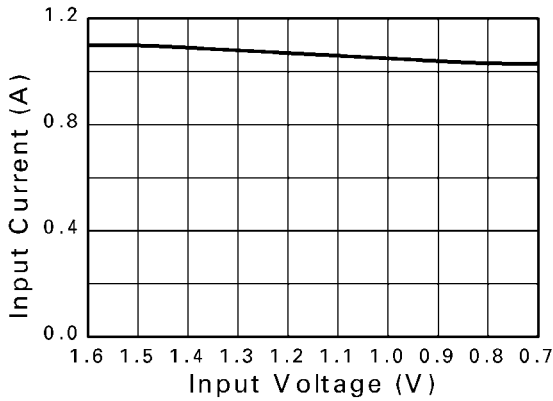
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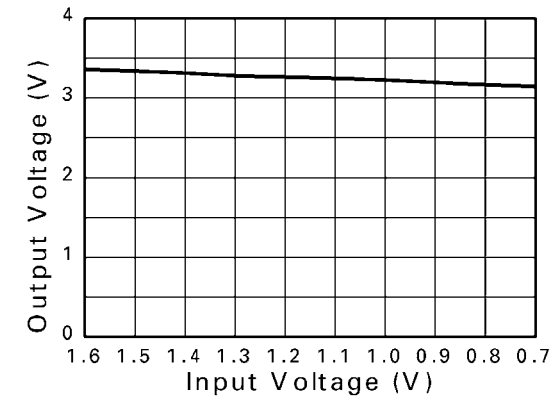
Input Voltage vs Efficiency



Input Voltage vs Output Current



Input Voltage vs Input Current



Input Voltage vs Output Voltage

Figure 2 Performance graphs

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