

# 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.

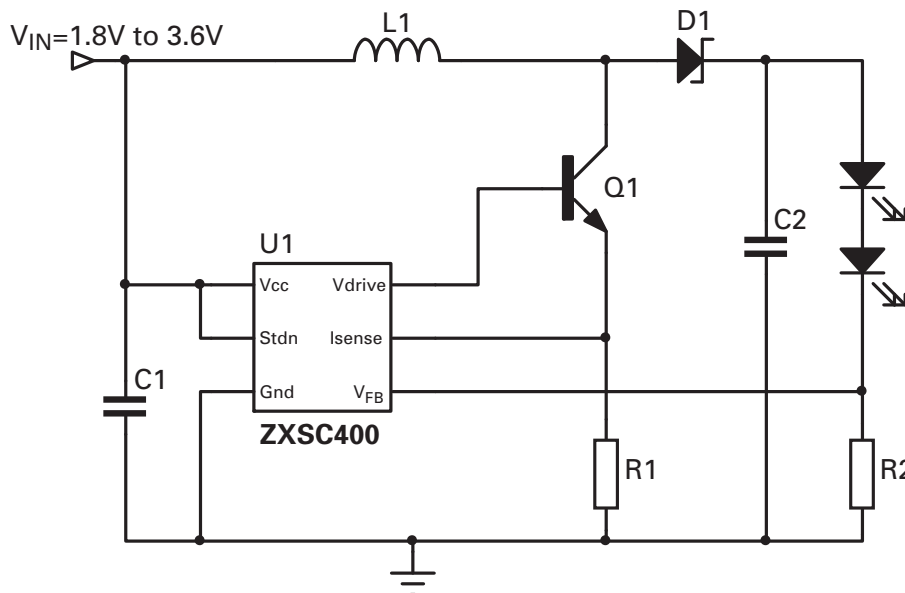


Figure 1 Schematic diagram

| 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   | 22 $\mu$ H      | Generic      | Generic      | $I_{SAT} = 2A$                   |
| R1   | 18m $\Omega$    | Generic      | Generic      | 0805 size                        |
| R2   | 820m $\Omega$   | Generic      | Generic      | 0805 size                        |
| R3   | 1K $\Omega$     | Generic      | Generic      | 0805 size                        |
| C1   | 22 $\mu$ F/10V  | Generic      | Generic      |                                  |
| C2   | 100 $\mu$ F/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  $T_{amb} = 25^{\circ}\text{C}$  unless otherwise stated)

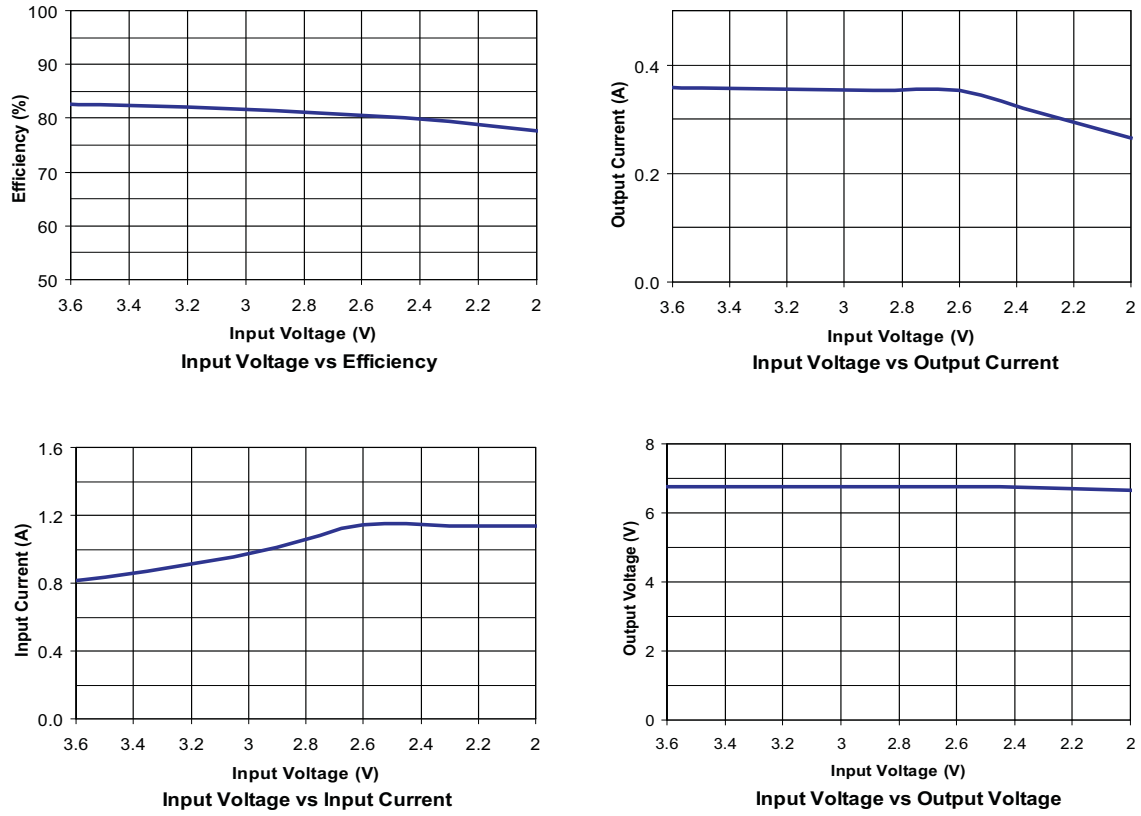


Figure 2 Performance graphs

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|                                   |  |
|-----------------------------------|--|
| "Preview"                         | Future device intended for production at some point. Samples may be available  |
| "Active"                          | Product status recommended for new designs                                     |
| "Last time buy (LTB)"             | Device will be discontinued and last time buy period and delivery is in effect |
| "Not recommended for new designs" | Device is still in production to support existing designs and production       |
| "Obsolete"                        | Production has been discontinued   |

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|                       |   |
|-----------------------|---|
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