Drive multiple LEDs with Nexperia NPIC shift registers

NPIC cascadable shift registers from Nexperia help reduce controllers’ pin-count to save space & reduce BOM efficiently.

Key benefits:
- GPIO expansion with simple control interface
- Reduced component count and footprint
- Self-protecting outputs via integrated clamping
- Suitable for driving inductive loads
- Automotive-qualified options (-Q100 portfolio)

Key features:
- 8-bit & 12-bit types in industry-standard packages
- 5.0V or 3.3V supply, overvoltage-tolerant inputs
- Cascadable solutions for controlling more LEDs
- Inherent current limiting and thermal protection
- Integrated voltage clamping against inductive transients

Example: drive up to 24 LEDs using just 3 controller I/Os with NPIC6C596A, substantially reducing footprint compared to using 74HC595 in combination with external MOSFETs.
NPIC power logic shift registers with open-drain outputs are suitable for medium voltage loads

Nexperia’s NPIC portfolio of serial-in/serial or parallel-out shift registers with storage register and open-drain outputs is available in TSSOP & DQFN packages, for Industrial as well as Automotive (-Q100) applications.

<table>
<thead>
<tr>
<th>Type number</th>
<th>Description</th>
<th>Features</th>
<th>Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Automotive option (Q100)</td>
<td>5 V supply</td>
</tr>
<tr>
<td>NPIC6C595</td>
<td>Power logic 8-bit shift register</td>
<td><img src="https://via.placeholder.com/15" alt="car" /></td>
<td>•</td>
</tr>
<tr>
<td>NPIC6C596</td>
<td>Power logic 8-bit shift register</td>
<td><img src="https://via.placeholder.com/15" alt="car" /></td>
<td>•</td>
</tr>
<tr>
<td>NPIC6C596A</td>
<td>Power logic 8-bit shift register</td>
<td><img src="https://via.placeholder.com/15" alt="car" /></td>
<td>•</td>
</tr>
<tr>
<td>NPIC6C4894</td>
<td>Power logic 12-bit shift register</td>
<td><img src="https://via.placeholder.com/15" alt="car" /></td>
<td>•</td>
</tr>
</tbody>
</table>

### Applications:
- Moderate-load LED signs
- Relays and solenoids
- Graphic & fault status indicators
- Other medium-voltage applications

Visit our website for more information: [nexperia.com/products/logic/family/NPIC/](https://nexperia.com/products/logic/family/NPIC/)

© 2019 Nexperia B.V.
All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

nexperia.com

Date of release: June 2019