VNH7 products are fully integrated H-bridges for driving DC motors. They include a double HSD and two LSDs as a power stage in addition to the control stage with a full set of diagnostics and protections. All features are optimized for DC motor applications. Thanks to their combination of VIPower™ M0-7 technology and dedicated packages, the new VNH7 family offers state-of-the-art application performance and robustness as well as cost effectiveness.

**KEY FEATURES**
- Cross-current protection
- Current limitation
- Over-temperature shutdown.
- Power limitation (ST IP)
- PWM operation up to 20 kHz
- Overvoltage clamp and undervoltage shutdown
- Output protected against loss of ground and loss of \( V_{CC} \)
- Output protected against short to ground and short to \( V_{CC} \)
- Very low standby power consumption
- Multisense for:
  - Motor current monitoring
  - \( V_{bat} \) monitoring
  - \( T_{chp} \) monitoring
  - AEC-Q100 compliant

**KEY BENEFITS**
- Cost-effective and space-saving solution compared to discrete multi-package approach.
- Embedded controls and protection for reduced microcontroller workload.
- Improved flexibility.
- State-of-the-art reliability thanks to self-limiting fast thermal transient (power limitation).

**KEY APPLICATIONS**
- Door lock
- Mirror adjust
- Rear curtain control
- Dual washer pump
VNH7 FAMILY ALLOWS A COMPACT DESIGN

Thanks to very small packages and high integration, these devices allow the implementation of compact and reliable solutions for automotive DC motor control applications.

The SO-16N is a full plastic triple-island package and has a body size of only 38mm². VNH7070AS and VNH7100AS are housed in this package, combining small size with good thermal performance and at very reasonable price.

The PowerSSO-36 triple island has three exposed pads offering optimized thermal performance. This package houses the VNH7040AY, a device able to address motors operating at up to 60 W.

VNH7 FAMILY SUPPORTS AN IMPROVED FLEXIBILITY FOR DIFFERENT CONFIGURATIONS

Supported hardware configurations

H-bridge

Dual half-bridge

Cascaded

VNH7 MOTOR CONTROL ICs

<table>
<thead>
<tr>
<th>Part number</th>
<th>Package</th>
<th>Ron typ (per leg) [mΩ]</th>
<th>Limitation Current Ilim typ [A]</th>
<th>PWM</th>
<th>Multi-sense Monitoring features</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VNH7070AS</td>
<td>SO-16N</td>
<td>70</td>
<td>22</td>
<td>yes</td>
<td>Motor current</td>
<td>Pin to pin with VNH7100AS</td>
</tr>
<tr>
<td>VNH7100AS</td>
<td>SO-16N</td>
<td>100</td>
<td>18</td>
<td>yes</td>
<td>Motor current</td>
<td>Pin to pin with VNH7070AS</td>
</tr>
<tr>
<td>*VNH7040AY</td>
<td>PowerSSO-36</td>
<td>40</td>
<td>49</td>
<td>yes</td>
<td>Motor Current, Battery voltage, Chip Temperature</td>
<td></td>
</tr>
</tbody>
</table>

Note: *In development. Engineering samples available