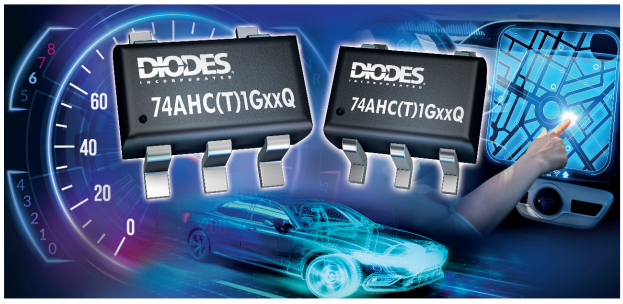
Automotive-compliant Single-Gate Logic Products

Diodes offers a wide portfolio of automotive-compliant single-gate logic products

These devices have been specifically designed, fabricated, and assembled to meet the rigors of the automotive environment. Distinct families offer a range of operating voltages, switching speed and drive capability suitable to be tailored for a specific application.

Single-gate logic eliminates the compromises in PCB routing allowing the designers to place exactly the gate, buffering, or inversion need in a specific position without a concern of having unused gates or excessive routing. We have 3 families covering the 34 most popular functions, available in SOT 25 and SOT353 packages.



74AHC1GxxQ Characteristics

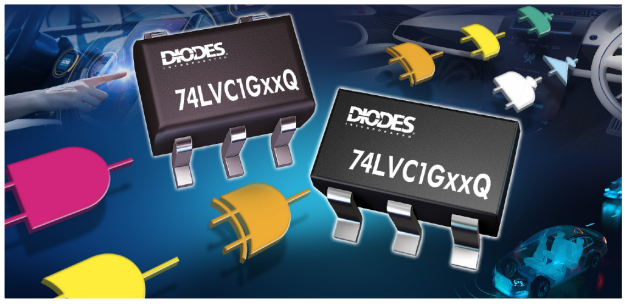
- Supply Voltage Range: 2.0V to 5.5V
- ±8mA Output Drive at 4.5V
- Propagation times of 4ns to 6ns
- Balanced Propagation Delays
- Balanced Drive Capability

74AHCT1GxxQ Characteristics

- Supply Voltage Range: 4.5V to 5.5V
- TTL compatible inputs
- ±8mA Output Drive at 4.5V
- Propagation times of 4ns to 6ns
- Balanced Propagation Delays
- Balanced Drive Capability

Design Notes

- Lower drive currents will allow unterminated circuits to be less susceptible to ringing.



74LVC1GxxQ Characteristics

- Supply Voltage Range: 1.65V to 5.5V
  ±24mA Output Drive at 3.3V
  ±32mA Output Drive at 5.5V
  Propagation times of 2ns to 3ns
  I_{off} Supports Partial-Power-Down Mode Operation

Design Notes

- The I_{off} circuit removes the clamping action be tween the output and V_{CC}.

  When V_{CC} = 0 both inputs and outputs are high impedance, making them ideal for power down isolation

THE DIODES' ADVANTAGE

- **Automotive Compliant**
  AEC-Q100 qualified, manufactured in IATF 16949 certified sites supporting PPAP documentation
- **AEC-Q100 Grade 1 Qualified**
  Supports operation across the -40°C to 125°C ambient temperature range
- **Inputs are not clamped to V_{CC} (all three families)**
  Voltages up to 5.5 volts can be applied to inputs regardless of V_{CC}.
- **Inputs have a small amount of added hysteresis**
  Less susceptible to noise and can tolerate slower transition times.
- **No circuits under bond pads**
  Meets stringent automotive requirements
- **Gold Bond Wire**
  Best solution for extended reliability

Automotive-compliant Single-Gate Logic Products

Orderable Part Number SOT25	Orderable Part Number SOT353	Description	V_{cc} (Min)	V_{cc} (max)	t_{pd}	Output Type	Marking Code
74LVC1G00QW5-7	74LVC1G00QSE-7	2-Input NAND Gate	1.65V	5.5V	2.2ns	push-pull	USQ
74LVC1G02QW5-7	74LVC1G02QSE-7	2-Input NOR Gate	1.65V	5.5V	2.1ns	push-pull	UTQ
74LVC1G04QW5-7	74LVC1G04QSE-7	Inverter	1.65V	5.5V	2.0ns	push-pull	UUQ
74LVC1G06QW5-7	74LVC1G06QSE-7	Open-Drain Inverter	1.65V	5.5V	2.3ns	open drain	UMQ
74LVC1G07QW5-7	74LVC1G07QSE-7	Open-Drain Buffer	1.65V	5.5V	2.2ns	open drain	UNQ
74LVC1G08QW5-7	74LVC1G08QSE-7	2-Input AND Gate	1.65V	5.5V	2.1ns	push-pull	UVQ
74LVC1G14QW5-7	74LVC1G14QSE-7	Schmitt Trigger Inverter	1.65V	5.5V	3.0ns	push-pull	UPQ
74LVC1G17QW5-7	74LVC1G17QSE-7	Schmitt Trigger Buffer	1.65V	5.5V	3.0ns	push-pull	URQ
74LVC1G32QW5-7	74LVC1G32QSE-7	2-Input OR Gate	1.65V	5.5V	2.1ns	push-pull	UWQ
74LVC1G34QW5-7	74LVC1G34QSE-7	Buffer	1.65V	5.5V	2.0ns	push-pull	UKQ
74LVC1G86QW5-7	74LVC1G86QSE-7	2-Input Exclusive OR Gate	1.65V	5.5V	2.3ns	push-pull	UXQ
74LVC1G125QW5-7	74LVC1G125QSE-7	3-State Buffer OE LOW	1.65V	5.5V	2.1ns	3-state	UYQ
74LVC1G126QW5-7	74LVC1G126QSE-7	3-State Buffer OE HIGH	1.65V	5.5V	2.0ns	3-state	UZQ
74AHC1G00QW5-7	74AHC1G00QSE-7	2-Input NAND Gate	2.0V	5.5V	4.9ns	push-pull	YRQ
74AHC1G02QW5-7	74AHC1G02QSE-7	2-Input NOR Gate	2.0V	5.5V	4.6ns	push-pull	YSQ
74AHC1G04QW5-7	74AHC1G04QSE-7	Inverter	2.0V	5.5V	4.5ns	push-pull	YTQ
74AHC1G07QW5-7	74AHC1G07QSE-7	Open-Drain Buffer	2.0V	5.5V	6.0ns	open drain	YKQ
74AHC1G08QW5-7	74AHC1G08QSE-7	2-Input AND Gate	2.0V	5.5V	4.6ns	push-pull	YUQ
74AHC1G09QW5-7	74AHC1G09QSE-7	Open Drain 2-Input AND Gate	2.0V	5.5V	4.9ns	open drain	YNQ
74AHC1G14QW5-7	74AHC1G14QSE-7	Schmitt Trigger Inverter	2.0V	5.5V	4.6ns	push-pull	YVQ
74AHC1G32QW5-7	74AHC1G32QSE-7	2-Input OR Gate	2.0V	5.5V	4.6ns	push-pull	YWQ
74AHC1G86QW5-7	74AHC1G86QSE-7	2-Input Exclusive OR Gate	2.0V	5.5V	4.9ns	push-pull	YXQ
74AHC1G125QW5-7	74AHC1G125QSE-7	3-State Buffer OE LOW	2.0V	5.5V	4.8ns	3-state	YYQ
74AHC1G126QW5-7	74AHC1G126QSE-7	3-State Buffer OE HIGH	2.0V	5.5V	4.8ns	3-state	YZQ
74AHCT1G00QW5-7	74AHCT1G00QSE-7	2-Input NAND Gate, TTL compatible	4.5V	5.5V	5.0ns	push-pull	ZRQ
74AHCT1G02QW5-7	74AHCT1G02QSE-7	2-Input NOR Gate, TTL compatible	4.5V	5.5V	4.9ns	push-pull	ZSQ
74AHCT1G04QW5-7	74AHCT1G04QSE-7	Inverter, TTL compatible	4.5V	5.5V	4.9ns	push-pull	ZTQ
74AHCT1G07QW5-7	74AHCT1G07QSE-7	Open-Drain Buffer, TTL compatible	4.5V	5.5V	5.5ns	open drain	ZPQ
74AHCT1G08QW5-7	74AHCT1G08QSE-7	2-Input AND Gate, TTL compatible	4.5V	5.5V	5.1ns	push-pull	ZUQ
74AHCT1G14QW5-7	74AHCT1G14QSE-7	Schmitt Trigger Inverter, TTL compatible	4.5V	5.5V	5.9s	push-pull	ZVQ
74AHCT1G32QW5-7	74AHCT1G32QSE-7	2-Input OR Gate, TTL compatible	4.5V	5.5V	4.8ns	push-pull	ZWQ
74AHCT1G86QW5-7	74AHCT1G86QSE-7	2-Input Exculsive OR Gate, TTL compatible	4.5V	5.5V	5.0ns	push-pull	ZXQ
74AHCT1G125QW5-7	74AHCT1G125QSE-7	3-State Buffer OE LOW, TTL compatible	4.5V	5.5V	5.5ns	3-state	ZYQ
74AHCT1G126QW5-7	74AHCT1G1262QSE-7	3-State Buffer OE HIGH, TTL compatible	4.5V	5.5V	5.5ns	push-pull	ZZQ

For further information, please visit:
www.diodes.com/contact-us