



New Product Announcement

AH332xQ AH352xQ

Unipolar and Omnipolar Hall Effect Families with Tight Switch Points for Accurate Automotive Proximity Applications

The AH332xQ and AH352xQ are new automotive-compliant, high-sensitivity, unipolar and omnipolar Hall effect switches that are qualified to AEC-Q100 Grade 0 with an extended temperature range of -40°C to +150°C.

The AH332xQ/AH352xQ have 10/3 sensitivity options with extremely tight switch points and drift over the temperature and supply voltage. Their wide input voltage range of 3V to 28V, operating temperature range of -40 to +150°C, and 40V load dump protection enable them to withstand the harsh automotive environment.

The devices provide a reliable solution over their entire operating range by using a chopper-stabilized architecture and an internal-bandgap regulator. For robustness and protection, they have supply-rail reverse blocking with a Zener clamp, and overcurrent limit with a Zener clamp on the output.

Due to their high ESD (8kV) and multiple protection functions, including input/output clamps, the AH332xQ/352xQ provide robust and rugged solutions for automotive proximity detection.

The AH332xQ/352xQ are available in the industry-standard SOT23 (Type S) and SIP-3 packages. The AH332xQ is also available the SC59 package.

Automotive-compliant - AEC qualified, manufactured in facilities certified to IATF 16949, supporting PPAP documents.

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The DIODES Advantage

The AH332xQ/352xQ unipolar/omnipolar sensors provide reliable and accurate automotive proximity detection.

- **Resistant to Physical Stress**
Improves robustness of sensing performance for accuracy
- **Wide 3V~28V Input Voltage Range with High ESD HBM 8kV, CDM 1kV**
Supports multiple applications
- **Fast 10µs "POWER ON" and 4µs Response Time with Wide Bandwidth**
Enables the devices to be suitable for high-speed applications
- **10/3 Sensitivity Options with Open-Drain**
Allows flexibility for different system designs
- **Industry-Standard SOT23 (Type S), SC59, and SIP-3 Packages**
Applies to various mechanical designs

Applications

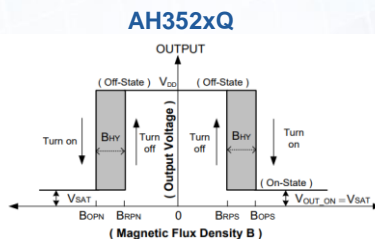
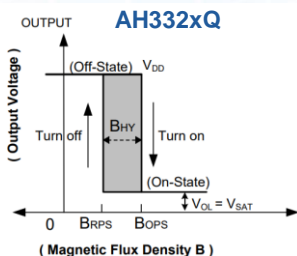
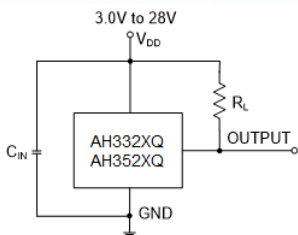
- Position and proximity sensing in automotive applications
- Open and close detection
- Contactless switches
- Level detection
- Door locks
- Door/trunk closures
- Steering locks
- Seatbelt buckles
- Seat positions
- Sunroofs
- Wipers



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AH332xQ AH352xQ

Typical Application Schematic



Automotive Compliant Unipolar and Omnipolar Switches Portfolio

Part Number	Type	AEC-Q100 Grade	Output Type	Operating Voltage	Ave Supply	Reverse Protection	Current Limit	ESD HBM/CDM	B _{OP} (gauss)	B _{IP} (gauss)	Ambient Temp. Range	Package
				V	mA			kV			°C	
AH3322Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	30	20	-40 to +150	SC59, SOT23 (Type S), SIP-3
AH3323Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	55	35	-40 to +150	SC59, SOT23 (Type S), SIP-3
AH3324Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	80	60	-40 to +150	SOT23 (Type S), SIP-3
AH3325Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	100	80	-40 to +150	SOT23 (Type S), SIP-3
AH3326Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	100	85	-40 to +150	SC59, SOT23 (Type S), SIP-3
AH3327Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	115	90	-40 to +150	SC59, SOT23 (Type S), SIP-3
AH3328Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	150	125	-40 to +150	SOT23 (Type S), SIP-3
AH3329Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	175	150	-40 to +150	SOT23 (Type S), SIP-3
AH3320Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	210	185	-40 to +150	SOT23 (Type S), SIP-3
AH3321Q	Unipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	275	250	-40 to +150	SOT23 (Type S), SIP-3
AH3522Q	Omnipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	±20	±10	-40 to +150	SOT23 (Type S), SIP-3
AH3523Q	Omnipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	±30	±20	-40 to +150	SOT23 (Type S), SIP-3
AH3524Q	Omnipolar	0	Open-Drain	3 to 28	3	Yes	Yes	8/1	±40	±25	-40 to +150	SOT23 (Type S), SIP-3

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Packaging	Moisture Sensitivity	Quantity		
				Ammo	Bulk	7" Tape & Reel
AH3322Q-P-A / AH3322Q-P-B	Automotive	SIP-3 (Ammo)/(Bulk)	-	4,000	1,000	-
AH3322Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3322Q-W-7	Automotive	SC59	MSL-1	-	-	3,000
AH3323Q-P-A / AH3323Q-P-B	Automotive	SIP-3 (Ammo)/(Bulk)	-	4,000	1,000	-
AH3323Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3323Q-W-7	Automotive	SC59	MSL-1	-	-	3,000
AH3324Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3324Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3325Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3325Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3326Q-P-A / AH3326Q-P-B	Automotive	SIP-3 (Ammo)/(Bulk)	-	4,000	1,000	-
AH3326Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3326Q-W-7	Automotive	SC59	MSL-1	-	-	3,000
AH3327Q-P-A / AH3327Q-P-B	Automotive	SIP-3 (Ammo)/(Bulk)	-	4,000	1,000	-
AH3327Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3327Q-W-7	Automotive	SC59	MSL-1	-	-	3,000
AH3328Q-P-A / AH3328Q-P-B	Automotive	SIP-3 (Ammo)/(Bulk)	-	4,000	1,000	-
AH3328Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3329Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3329Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3320Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3320Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3321Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3321Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3522Q-P-A	Automotive	SIP-3 (Ammo)	-	4,000	-	-
AH3522Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3522Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3523Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3523Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000
AH3524Q-P-A	Automotive	SIP-3 (Ammo)	-	4,000	-	-
AH3524Q-P-B	Automotive	SIP-3 (Bulk)	-	-	1,000	-
AH3524Q-SA-7	Automotive	SOT23 (Type S)	MSL-1	-	-	3,000