


PRODUCT SELECTION GUIDE

May 2019

INNOVATION WITH PURPOSE

ALLEGRO microsystems

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SENSE

REGULATE

DRIVE

SENSE

SENSOR IC PACKAGE PORTFOLIO

SENSOR INTEGRATED CIRCUITS

The development of Allegro sensor ICs not only includes leading edge innovations in the area of integrated circuit design but also includes application specific innovation in the area of custom package design.

A small sampling of Allegro's custom packaging developments include:

- Proprietary, integrated magnet packages that simplify magnetic system design in automotive speed sensing applications.
  See the SE, SG, SH and SJ packages, and SN, SM, and SP packages.
- Revolutionary, integrated current sensing packages with high bandwidth magnetic design features. See the SOIC, QSOP, EX, and CA/CB packages with integrated, low resistance current conductors and the 1 mm thick KT package.
- Small footprint, low profile DFN packages for communications and consumer products. See the EW and CG packages.

CURRENT SENSING PACKAGES WITH INTEGRATED CONDUCTORS

EX (QFN)
Terminals: 12
Size: 3 x 3 mm body width

CB
Terminals: 5

LC (SOIC-8)
Terminals: 8

L (SOIC-8 and SOIC-16)
Terminals: 8, 16

LF (QSOP-24)
Terminals: 24

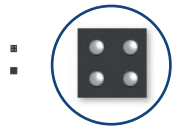
LA / MA (SOIC-16)
Terminals: 16

LR (PSOF)
Terminals: 7

Please Note: Package sizes are photographed to show relative scale.

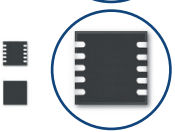
LOW PROFILE, SMALLEST FOOTPRINT PACKAGES

CG (WLCSP)
Terminals: 4
Size: .96 x .96 mm body width



EW (DFN)
Terminals: 6
Size: 1.5 x 2 mm body width

EJ (TDFN)
Terminals: 3-16
Size: 3 x 3 mm body width

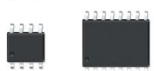


SURFACE MOUNT PACKAGES

LH (SOT23W)
Terminals: 3

LC (SOIC-8)
Terminals: 8

L (SOIC-8 and SOIC-16)
Terminals: 8, 16



LE (TSSOP)
Terminals: 8, 14, 24

SINGLE IN-LINE PACKAGES

UA (TO-92)
Terminals: 3

K
Terminals: 4

KH
Terminals: 3

KT
Terminals: 4

KN
Terminals: 4

UC
Terminals: 3

INTEGRATED MAGNET PACKAGES

SE
Terminals: 4

SG
Terminals: 4

SH
Terminals: 4

SJ
Terminals: 4

SL
Terminals: 3

SP
Terminals: 3

Please Note: Package sizes are photographed to show relative scale.

MAGNETIC SWITCHES AND LATCHES

HALL-EFFECT LATCHES AND BIPOLAR SWITCHES

Part Number	Features	Output	Sensor Type	Supply Voltage Min (V)	Supply Voltage Max (V)	Temperature Ranges
A1260	Vertical Hall Latch	Voltage	1D Vertical	3.0	24.0	-40°C to 150°C
APS122x0	High EMC/ESD	Voltage	1D Planar	2.8	24.0	-40°C to 150°C
APS122x5	5 V Latches	Voltage	1D Planar	2.8	5.5	-40°C to 150°C
APS1329x	Standard Latches	Voltage	1D Planar	2.8	24.0	-40°C to 125°C
APS12400	High EMC/ESD	Voltage	1D Planar	3.0	24.0	-40°C to 150°C
APS12450	High EMC/ESD	Voltage	1D Planar	3.0	30.0	-40°C to 150°C

DUAL HALL-EFFECT LATCHES

Part Number	Features	Output	Sensor Type	Supply Voltage Min (V)	Supply Voltage Max (V)	Temperature Ranges
A1262	2D Quadrature Sensor	Voltage	2D	4.0	24.0	-40°C to 150°C
APS12625	2D SPD/DIR Sensor	Voltage	2D	2.8	5.5	-40°C to 150°C
APS12626	2D Quadrature Sensor	Voltage	2D	2.8	5.5	-40°C to 150°C

MAGNETIC SWITCHES AND LATCHES

THREE-WIRE HALL-EFFECT SWITCHES

Part Number	Features	Output	Sensor Type	Supply Voltage Min (V)	Supply Voltage Max (V)	Temperature Ranges
APS11000	Standard Unipolar and Omnipolar Switch	Voltage	1D Planar	3.3	24.0	-40°C to 150°C
APS11060	Standard Unipolar and Omnipolar Switch	Voltage	1D Vertical	3.3	24.0	-40°C to 150°C
APS11200	Standard Unipolar and Omnipolar Switch	Voltage	1D Planar	2.8	24.0	-40°C to 150°C
APS11205	5 V Unipolar Switch	Voltage	1D Planar	2.8	5.5	-40°C to 150°C
APS11450	Background diagnostics	Voltage	1D Planar	3.0	30.0	-40°C to 150°C
APS13295	General Purpose Switch	Voltage	1D Planar	2.8	24.0	-40°C to 125°C

TWO-WIRE HALL-EFFECT SWITCHES

Part Number	Features	Output	Sensor Type	Supply Voltage Min (V)	Supply Voltage Max (V)	Temperature Ranges
A113x	Unipolar Switches	Current	1D Vertical	3.0	24.0	-40°C to 150°C
APS11500	High EMC/ESD Unipolar Switches	Current	1D Planar	3.0	24.0	-40°C to 150°C
APS11900	Programmable Switch/Latch	Current	1D Planar	3.0	24.0	-40°C to 150°C

MICROPOWER HALL-EFFECT SWITCHES

Part Number	Features	Output	Sensor Type	Supply Voltage Min (V)	Supply Voltage Max (V)	Temperature Ranges
A1266	3D Omnidirectional and Omnipolar	Voltage	3D	2.5	5.5	-40°C to 85°C
A3211/12	Low-Voltage Omnipolar	Voltage	1D Planar	2.5	3.5	-40°C to 85°C
A3213/14	5 V Omnipolar	Voltage	1D Planar	2.5	5.5	-40°C to 85°C -40°C to 150°C
APS11700	3.3V - 24V Micropower	Open Drain	1D Planar	3.3	24.0	-40°C to 150°C
APS11760	3.3V - 24V Micropower	Open Drain	1D Vertical	3.3	24.0	-40°C to 150°C

MAGNETICALLY ACTUATED LIGHTING

Part Number	Topology	# of Channels	IOUT Per Channel (mA)	Operating Input Voltage Min (V)	Operating Input Voltage Max (V)	Package Type
A1569	Linear	1	150	7.0	24.0	eSOIC-8
APS13568	Linear Micropower	1	150	7.0	24.0	eSOIC-8

MAGNETIC LINEAR AND ANGULAR POSITION SENSOR ICs

2D ANGLE SENOR ICs

Part Number	Supply Voltage (V)	Resolution	Output Type	Refresh Rate (usecs)	Response Time (µs)	Temperature Ranges	Packages
A1330	4.5 to 5.5	12 bit	Analog	25	120	-40°C to 150°C	TSSOP-8 (single) TSSOP-8 (dual)
A1333	4.0 to 16.5	12 bit	SPI, PWM, ABI/UVW	1	10	-40°C to 150°C	TSSOP-14 (single die) TSSOP-24 (dual die)
A1335	4.5 to 5.5	12 bit	I^2C, SENT, & SPI	32	60	-40°C to 150°C	TSSOP-14 (single die) TSSOP-24 (dual die)
A1337	3.7 to 16	12 bit	SPI, SENT, & PWM	25	60	-40°C to 150°C	TSSOP-14 (single die) TSSOP-24 (dual die)
A1338	3.7 to 16	12 bit	SPI, SENT, & PWM	25	60	-40°C to 150°C	TSSOP-14 (single die) TSSOP-24 (dual die)
A1339	4.0 to 16.5	12 bit	SPI, PWM, ABI/UVW	1	10	-40°C to 150°C	TSSOP-14 (single die) eTSSOP-24 (dual die)
AAS33001	3.7 to 18	15 bit	SPI, PWM, ABI/UVW	1	10	-40°C to 150°C	TSSOP-14 eTSSOP-24
AAS33051	3.7 to 18	15 bit	SPI, PWM, ABI/UVW	1	10	-40°C to 150°C	TSSOP eTSSOP

1D CUSTOMER PROGRAMMABLE LINEAR SENSOR ICs

Part Number	Supply Voltage (V)	Quiescent Output (V)	Typical Sensitivity (mV/G)	Output Bandwidth (kHz)	Temperature Ranges	Packages
A1356	4.5 to 18	40% to 60% (programmable)	45 to 75 m% D/G (programmable)	0.4 (internal bandwidth)	-40°C to 150°C	KB
A1357	4.5 to 18	40% to 60% (programmable)	35 to 145 m% D/G (programmable)	0.4 (internal bandwidth)	-40°C to 150°C	KB
A1340	4.5 to 5.5	1.5 to 3.5 (programmable)	5 to 11.6 (programmable)	0.375 to 3 (programmable)	-40°C to 150°C	KT
A1341	4.5 to 5.5	±150 %FSO (Fact. Prog.)	0.025 to 0.18 %FSO/G (Fact. Prog.)	0.188 to 3 (programmable)	-40°C to 150°C	KT
A1343	4.5 to 5.5	±150 %FSO (Fact. Prog.)	0.2 to 0.3 %FSO/G (Fact. Prog.)	0.188 to 3 (programmable)	-40°C to 150°C	LE
A1377	4.5 to 5.5	$V_{OUT(sat)L}$ to $V_{OUT(sat)H}$	1mV/G to 14.1mV/G	2.5	-40°C to 125°C	UC
A1342	4.5 to 5.5	Programmable	0.028 to 1.3 % FSO/G (programable)	0.04 to 7.4 (programmable)	-40°C to 150°C	UC
A1346	4.5 to 5.5	Programmable	0.028 to 1.3 % FSO/G (programable)	0.04 to 7.4 (programmable)	-40°C to 150°C	LE
ATS344	3.75 to 9.5	Programmable	.404% FSO/G (programmable)	0.25 to 4 (programmable)	-40°C to 150°C	SP

3D POSITION SENSOR ICs

Part Number	Supply Voltage (V)	Sensitive Orientations	Output Type	Typical Sensitivity	Output Bandwidth	Temperature Ranges	Packages
ALS31300	2.65 to 3.5	X, Y, & Z	I^2C	1LSB/G, 2LSB/G, 4 LSB/G or 0.25LSB/G (Programmed)	3.5kHz to 80kHz (Programmable)	-40°C to 85°C	EJ
ALS31313	2.65 to 3.5	X, Y, & Z	I^2C	1LSB/G, 2LSB/G, 4 LSB/G or 0.25LSB/G (Programmed)	3.5kHz to 80kHz (Programmable)	-40°C to 125°C	LE

MAGNETIC LINEAR AND ANGULAR POSITION SENSOR ICs

1D FACTORY PROGRAMMED LINEAR SENSOR ICs

Part Number	Supply Voltage (V)	Quiescent Output (V)	Typical Sensitivity (mV/G)	Output Bandwidth (kHz)	Temperature Ranges	Packages
A1304	3.0 to 3.6	Typ 50% Vcc	0.5 or 4	20	-40°C to 85°C	LH
A1308	4.5 to 5.5	Typ 50% Vcc	multiple	20	-40°C to 150°C	LH, UA
A1309	4.5 to 5.5	Typ 50% Vcc	9 or -9	20	-40°C to 150°C	LH, UA
A1315	3.0 to 3.63	Typ 50% Vcc	1.35, 2.5, 5	20	-40°C to 150°C	LH, UA
A1324	4.5 to 5.5	Typ 50% Vcc	5	17	-40°C to 150°C	LH, UA
A1325	4.5 to 5.5	Typ 50% Vcc	3.125	17	-40°C to 150°C	LH, UA
A1326	4.5 to 5.5	Typ 50% Vcc	2.5	17	-40°C to 150°C	LH, UA
A1359	4.5 to 5.5	Typ. 50% Vcc / 50% DC	9 or -9	2	-40°C to 150°C	LE
A1454	2.65 to 3.5	Code 2048	2LSB/G or 4LSB/G	2	-40°C to 125°C	LE
A31004	3.0 to 3.63	0.5 V	3.3	20	-40°C to 125°C	LH
ALS31000	4.5 to 5.5	0.7 V	2.4	20	-40°C to 150°C	LH

1D FACTORY PROGRAMMED MICROPOWER LINEAR SENSOR ICs

Part Number	Supply Voltage (V)	Quiescent Output (V)	Typical Sensitivity (mV/G)	Output Bandwidth (kHz)	Temperature Ranges	Packages
A1391	2.5 to 3.5	Typ 50% Vref	1.25	10	-20°C to 85°C	EH
A1392	2.5 to 3.5	Typ 50% Vref	2.5	10	-20°C to 85°C	EH
A1393	2.5 to 3.5	Typ 50% Vref	5	10	-20°C to 85°C	EH
A1395	2.5 to 3.5	Typ 50% Vref	10	10	-20°C to 85°C	EH

CURRENT SENSOR ICs

SIP AND TSSOP PACKAGES 0 TO >1000 A CURRENT SENSOR ICs

Part Number	Type	Typical Sensitivity (mV/G)	Quiescent Output (V)	Bandwidth (kHz)	Supply Voltage (V)	Temperature Ranges	Packages
A1363	Bidirectional, Unidirectional	0.6 to 14	50% VCC (Bi) 10% VCC (Uni)	120	5	-40°C to 150°C	TSSOP
A1365[1]	Bidirectional	0.6 to 14	50% VCC (Bi)	120	5	-40°C to 150°C	SIP
ACS70310	Bidirectional, Unidirectional	1,2.5, 5, 10	50% VCC (Bi) 10% VCC (Uni)	240	5	-40°C to 150°C	SIP

[1] A1365 has an integrated over-current fault output and self-test diagnostics

50 TO 400 A INTEGRATED CURRENT SENSOR ICs

Part Number	Type	Measurement Range (A)	Isolation Voltage (VRMS)	Bandwidth (kHz)	Vcc	Temperature Ranges	Packages
ACS772	Bidirectional, Unidirectional	±50, ±100, ±150, ±200, ±400, 50, 100, 150, 200, 250	4800	200	5	-40°C to 85°C, -40°C to 125°C, -40°C to 150°C	CB
ACS773	Bidirectional, Unidirectional	±50, ±100, ±150, ±200, 250	4800	200	3.3	-40°C to 85°C, -40°C to 125°C, -40°C to 150°C	CB
ACS72981	Bidirectional, Unidirectional	±50, ±100, ±150 50, 100, 150	120	250	3.3,5	-40°C to 125°C, -40°C to 150°C	LR

0 TO 50 A INTEGRATED CURRENT SENSOR ICs

Part Number	Type	Measurement Range (A)	Isolation Voltage (VRMS)	Bandwidth (kHz)	Vcc	Temperature Ranges	Packages
ACS720*	Bidirectional	±15, ±35, >±50	3600	120	5	-40°C to 125°C	SOIC
ACS724LC	Bidirectional, Unidirectional	<±10, ±20, ±30, >±50 10,20,30,40	2400	120	5	-40°C to 150°C	SOIC
ACS724MA	Bidirectional, Unidirectional	±20, ±30, >±50 30, 50	4800	120	5	-40°C to 125°C, -40°C to 150°C	SOIC
ACS725LC	Bidirectional, Unidirectional	<±10, ±20, ±30, ±40, >±50 10, 20, 30	2400	120	3.3	-40°C to 150°C	SOIC
ACS725MA	Bidirectional, Unidirectional	±20, ±30, >±50 30	4800	120	3.3	-40°C to 125°C, -40°C to 150°C	SOIC
ACS730	Bidirectional, Unidirectional	±20, ±40, >±50 40, >50	2400	1000	5	-40°C to 125°C	SOIC
ACS732LA	Bidirectional, Unidirectional	±20, ±40, >±50 >50	3600	1000	5	-40°C to 125°C	SOIC
ACS732MA	Bidirectional	>±50	4800	1000	5	-40°C to 125°C	SOIC
ACS733LA	Bidirectional, Unidirectional	±20, ±40, >50 40	3600	1000	3.3	-40°C to 125°C	SOIC

* Commercial

CURRENT SENSOR ICs

0 TO 50 A INTEGRATED CURRENT SENSOR ICs (CONTINUED)

Part Number	Type	Measurement Range (A)	Isolation Voltage (VRMS)	Bandwidth (kHz)	Vcc	Temperature Ranges	Packages
ACS733MA	Bidirectional	>±50	4800	1000	3.3	-40°C to 125°C	SOIC
ACS70331*	Bidirectional, Unidirectional	±2.5, ±5, 2.5, 5	120	1000	3.3	-40°C to 85°C	QFN
ACS70331OL*	Bidirectional, Unidirectional	±2.5, ±5, 2.5, 5	120	1000	3.3	-40°C to 85°C	SOIC
ACS71020*[1]	Bidirectional	±15, ±30, >±50	4800	8	3.3,5	-40°C to 125°C	SOIC
ACS71240EX	Bidirectional, Unidirectional	<±10, ±30 50	120	120	3.3,5	-40°C to 125°C	QFN
ACS71240LC	Bidirectional, Unidirectional	<±10, ±30, ±45 50	2400	120	3.3,5	-40°C to 150°C	SOIC

* Commercial
[1] ACS71020 is a current, voltage and power sensor IC

MAGNETIC SPEED SENSOR ICs

CAMSHAFT SENSOR ICs

Part Number	Packages	Output Type	Sense	Operating Range	Speed Range	Integrated Components	Key Specifications
ATS605	SG	4-Wire	Independent	0.75 to 3.0 mm	0 to 40 kHz	Magnet	Independent Dual Outputs, Vibration Immunity
ATS675	SE	3-Wire	TPOS	0.5 to 3.0 mm	0 to 8 kHz	Magnet	Timing Accuracy
A16100	UC	3-Wire	Differential	60G to 1200G	0 to >20 kHz	2C	Differential sensing stray field immunity, Customer programming switch points, Eprom
ATS679	SL	3-Wire	TPOS	0.5 to 3.5 mm	0 to 8 kHz	2C, 2R, Magnet	Self-calibrating, True Power On State, High Accuracy, Eprom

CRANKSHAFT SENSOR ICs

Part Number	Packages	Output Type	Output Protocol	Operating Range	Speed Range	Integrated Components	Key Specifications
ATS616	SG	3-Wire	Speed	0.4 - 2.5mm	10 kHz	Magnet	-
ATS627	SG	3-Wire	Speed	0.5 - 3.0mm	0 to 20 kHz	Magnet	Repeatibility, Under-voltage Lockout
A1694	K, KH	3-Wire	Direction	50G to 1100G	0 to 10 kHz	2C, 2R (KH only)	Dual zero-crossing switch points with internal hysteresis, Low Jitter
ATS694	SG, SM	3-Wire	Speed & Direction	50G to 1100G	0 to 10 kHz	2C, 2R (SM only), Magnet	Dual zero-crossing switch points with internal hysteresis, Low Jitter
A1696	UC	3-Wire	Speed & Direction	50G to 1400G	0 to 10 kHz	2C	Center of package switching, Highly repeatable edge accuracy, Low Jitter, Eprom, Algorithms
ATS696	SM	3-Wire	Speed & Direction	50G to 1400G	0 to 10 kHz	2C, 2R, Magnet	Center of package switching, Highly repeatable edge accuracy, Low Jitter, Eprom, Algorithms

MAGNETIC SPEED SENSOR ICs

TRANSMISSION SENSOR ICs

Part Number	Packages	Output Type	Output Protocol	Operating Range	Speed Range	Integrated Components	Key Specifications
A1667	K	3-Wire	Speed	30G to 1400G	0 to 12 kHz	-	Wide hysteresis with small signal lockout for vibration immunity, customer back bias capable
ATS667	SG	3-Wire	Speed	0.5 to 3.1 mm	1 to 12 kHz	-	Wide hysteresis with small signal lockout for vibration immunity
ATS668	SM	3-Wire	Speed	0.5 to 3.0 mm	0 to 12 kHz	2C, 2R, Magnet	Wide hysteresis with small signal lockout for vibration immunity
A19530	UC	3-Wire	Direction	30G to 1500G	0 to 12 kHz	2C	Short/open detection capability, Advanced algorithms and small signal lockout for robust vibration immunity
ATS693	SG	3-Wire	Direction	0.5 to 2.75 mm	0 to 11 kHz	-	Advanced algorithms and small signal lockout for robust vibration immunity
A1684	UB	2-Wire	Speed	30G to 1500G	0 to 12 kHz	1C	Wide hysteresis with small signal lockout for vibration immunity, customer back bias capable
ATS684	SN	2-Wire	Speed	0.5 to 3.0 mm	0 to 12 kHz	1C	Wide hysteresis with small signal lockout for vibration immunity

TRANSMISSION SENSOR ICs (CONTINUED)

Part Number	Packages	Output Type	Output Protocol	Operating Range	Speed Range	Integrated Components	Key Specifications
A19520	UB	2-Wire	Direction	30G to 1500G	0 to 12 kHz	1C	SolidSpeed Digital Architecture™ provides robust, adaptive performance with advanced algorithms that provide vibration immunity over full target pitch and full range dynamic air gap immunity
ATS19520	SN	2-Wire	Direction	0.5 to 2.8 mm	0 to 12 kHz	1C	SolidSpeed Digital Architecture™ provides robust, adaptive performance with advanced algorithms that provide vibration immunity over full target pitch and full range dynamic air gap immunity
A19570	UB	2-Wire	Direction	-	0 to 12 kHz	1C	GMR technology for large air gap capability, advanced algorithms for maintaining performance in the presence of extreme system-level disturbances, including vibration immunity capability over full target pitch

MAGNETIC SPEED SENSOR ICs

WHEEL SPEED SENSOR ICs

Part Number	Packages	Output Type	Output Protocol	Operating Range	Speed Range	Integrated Components	Key Specifications
ARS19200	UB	2-Wire	Speed	20G to 1200G	0 to 5kHz	1C	Advanced threshold switching algoirthm supporting pitch and duty cycle high accuracy over air gap range
ATS19200	SN	2-Wire	Speed	0.5 to 3.0 mm	0 to 5kHz	1C, magnet	Advanced threshold switching algoirthm supporting pitch and duty cycle high accuracy over air gap range
A19250	UB	2-Wire	Speed	5G to 100G	1 to 5kHz	1C	SolidSpeed Digital Architecture™ supports advanced digital processing providing highly accurate edge performance in the presence of extreme system-level disturbances. Compatible orientation for Hall replacement
A19300	UB	2-Wire	Direction	20G to 1400G	0 to 3.9 (FWD, protocol dependent)	1C	SolidSpeed Digital Architecture™ supports advanced algorithms, maintaining pitch accuracy during dynamic air gap disturbances
A19350	UB	2-Wire	Direction	5G to 100G	0 to 3.9 (FWD, protocol dependent)	1C	SolidSpeed Digital Architecture™ supports advanced algorithms, maintaining performance in the presence of extreme system-level disturbances, including vibration immunity capability over the full target pitch

GENERAL PURPOSE SPEED SENSOR ICs

Part Number	Packages	Output Type	Output Protocol	Operating Range	Speed Range	Integrated Components	Key Specifications
A1468	K	3-Wire	Speed	20G to 1200G	0 to 10 kHz	-	Self-calibrating, digital peak detecting algorithms provide robust signal tracking
A17301	UC	3-Wire	Speed	20G to 1200G	0 to 10 kHz	2C	Self-calibrating, digital peak detecting algorithms provide robust signal tracking
ATS468	SG	3-Wire	Speed	-	-	Magnet	Self-calibrating, digital peak detecting algorithms provide robust signal tracking
ATS601	SG	3-Wire	Single element, low or high over tooth	0.5 to 2.5 mm OR 1.0 to 3.0 mm	0 to 8 kHz	Magnet	Twist-insensitive mounting and direction insensitive polarity, first fall edge detection
ATS605	SG	3-Wire	Dual channel digital outputs OR High-resolution position and direction output	0.75 to 3.0 mm	0 to 40 kHz	Magnet	Optional output protocol for either dual channel output for post processing of speed and direction information OR the IC processed output signals for speed and direction information without any post processing required
A17201	UA, UB	2-wire	Speed	+/- 7G (Typ. Switch points)	8 to 20 kHz	1C (UB only)	AC-coupled, differential sensing with integrated filter capacitor provides rejection of common-mode signal changes
A17950	UB	2-Wire	Speed	5G to 200G	100 to 5 kHz	1C	GMR transducer offers superiror magnetic sensitivity for large operating air gap range, low jitter performance, and parallel and perpendicular read orientations

REGULATE

REGULATOR PACKAGE PORTFOLIO

POWER INTEGRATED CIRCUITS

Allegro's power IC packages offer industry-leading thermal performance with limited board space.

TSSOP: Industry-standard TSSOP with optional exposed pad for enhanced thermal performance

QFP: Universal quad flat pack with exposed pad for enhanced thermal performance

QFN/: TDFN Quad and dual, low-profile, surface-mount packages with exposed pad for enhanced thermal performance (wettable flank options available)

MSOP: Industry-standard miniature small outline package with optional exposed pad for enhanced thermal performance

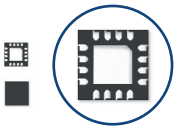
SOIC: Small outline integrated circuit with optional exposed pad for enhanced thermal performance

CSP: Wafer level chip scale

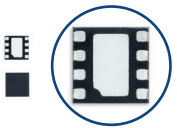
Additional industry-standard packaging options are available to meet individual design requirements.

WITHOUT LEADS

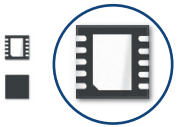
EC, ES, ET, EU, EV
(QFN with exposed pad)
Terminals: 16-48
Size: 3 x 3 mm body width to 7 x 7 mm body width



EE (DFN with exposed pad)
Terminals: 8
Size: 2 x 2 mm body to 3 x 3 mm body width



EJ (TDFN with exposed pad)
Terminals: 3-16
Size: 2 x 2 mm body to 3 x 3 mm body width

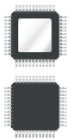


Please Note: Package sizes are photographed to show relative scale.

REGULATOR PACKAGE PORTFOLIO

WITH LEADS

JP (QFP with exposed pad)
Terminals: 32, 48
Size: 7 x 7 mm body width



LJ (SOIC with exposed pad)
Terminals: 8-10
Size: 3.9 mm body width

LV, LP (TSSOP with exposed pad)
Terminals: 16-38
Size: 4.4 mm body width

LY/LZ (MSOP with exposed pad)
Terminals: 10
Size: 3 mm body width

Please Note: Package sizes are photographed to show relative scale.

REGULATORS

DC/DC SWITCHING REGULATORS - NON-SYNCHRONOUS

Part Number	Key Features	V_{IN} Range (V)	I_{OUT} (A)	AEC-Q100 Automotive	R_{DSon} (mΩ)	Package	F_{SW} Range (kHz)
A4450	Wide Input BUCK-BOOST Regulator	3 to 36	1.0	Yes	80	4 x 4 QFN-20 Wettable Flank	250 to 2200
A8586	Wide Input Voltage, Buck Regulator with Adjustable Dithered Frequency and PFM mode	3.8 to 40	3.5	Yes	150	DFN-10 eSOIC-8	250 to 4000
A8586-1/-2	Wide Input Voltage, Buck Regulator with Adjustable Frequency	3.8 to 40	3.5	Yes	150	eSOIC-8	250 to 4000
A8587	Wide Input Voltage, Buck Regulator with Adjustable Dithered Frequency, PFM mode, and NPOR	3.8 to 40	2.0	Yes	150	DFN-10	250 to 4000
A8591	Ultra Low IQ , fixed 5.0 V_{OUT}, Automatic PFM, Dithering	3.6 to 40	2.0	Yes	110	3x3 DFN-10 Wettable Flank	300 to 2400
A8591-1	Ultra Low IQ , fixed 3.3 V_{OUT}, Automatic PFM, Dithering	3.6 to 40	2.0	Yes	110	3x3 DFN-10 Wettable Flank	300 to 2400
ARG81801	Wide Input Voltage, Buck Regulator with Sleep Mode, External Synchronization and POK output for compact, Thermally Efficient designs	4 to 36	3.0	Yes	110	4x4 QFN-24 Wettable Flank	250 to 2400

REGULATORS

DC/DC SWITCHING REGULATORS - SYNCHRONOUS FET

Part Number	Key Features	V_{IN} Range (V)	I_{OUT} (A)	AEC-Q100 Automotive	R_{DSon} (mΩ)	Package	F_{SW} Range (kHz)
A8650	Synchronous, Low V_{IN}, P-Channel HS MOSFET, Pre-Bias	2.5 to 5.5	2	Yes	70 / 55	MSOP-10	250 to 2400
A8651	Dual Synchronous, Low V_{IN}, P-Channel HS MOSFET	2.5 to 5.5	2.0/2.0	Yes	80 / 55 (x2)	eTSSOP-20	100 to 600
A8653	Synchronous Buck Regulator With Cable Drop (USB) Compensation	3 to 40	2.6	Yes	80 / 55	eTSSOP-16	100 to 2200
A8654	Synchronous Buck Regulator, Wide V_{IN}	3 to 40	2.6	Yes	80 / 55	eTSSOP-16	100 to 2200
A8660	Synchronous Regulator Controller for High Current	3 to 45	10	Yes	N/A	4×4 QFN-20 Wettable Flank	200 to 2200

REGULATORS

POWER MANAGEMENT ICs (PMICS) FOR AUTOMOTIVE

Part Number	Key Features	V_{IN} Range (V)	Output	Topology	Output Voltage	Output Current	Package	Frequency (kHz)
A4402	Automotive Buck Regulator With Integrated LDO Watchdog Timer And NPOR	6 to 50	V_{SW} V_{O2}	Buck Linear	Adjustable 6 V - 1.18 V	1.0 A 250 mA	eTSSOP-16	up to 2 MHz
A4405	Automotive COT Buck Regulator With Two Integrated LDO, One LDO Controller, Extensive FMEA	6 to 36	V_{REG} V_{5P} V_5 V_{33}	Pre-Reg Buck Linear Linear Linear Controller	5.45 V 5.0 V 5.0 V 3.3 V	~1A 405 mA 315 mA Adjustable	eTSSOP-20	up to 2.2 MHz
A4407	Automotive COT Buck Regulator With Two Integrated LDO, Two LDO Controllers	6 to 36	V_{REG} V_{5P} V_5 V_{3V3} V_{1V2}	Pre-Reg Buck Linear Linear Linear Controller Linear Controller	5.45 V 5.0 V 5.0 V 3.3 V 1.2 V	~1.5 A 415 mA 310 mA Adjustable Adjustable	eTSSOP-24	up to 2.2 MHz
A4408	Buck or Buck/Boost Pre-Regulator, Synch Buck, 3 LDOs with Watchdog Timet, NPOR and FFo/FF1	2.8 to 36	V_{REG} V_{1V2} V_{5P} V_5 V_{3V3}	Pre-Reg Buck Linear Linear Linear	5.35 V 1.25 V 5.0 V 5.0 V 3.3 V	~1 A 700 mA 255 mA 115 mA 165 mA	eTSSOP-38	250 kHz to 2.4 MHz

POWER MANAGEMENT ICs (PMICS) FOR AUTOMOTIVE (CONTINUED)

Part Number	Key Features	V_{IN} Range (V)	Output	Topology	Output Voltage	Output Current	Package	Frequency (kHz)
A4409	Buck or Buck/Boost Pre-Regulator with Two LDOs, Window Watchdog Timer and NPOR	3 to 36	V_{REG} V_{5P} V_{50}	Buck or Buck Boost Linear Linear	6.6 V 5.0 V 5.0 V	750 mA 300 mA 200 mA	eTSSOP-20	250 kHz to 2.4 MHz
A4411	Buck or Buck/Boost Pre-Regulator, Synch Buck, 3 LDOs with Pulse Width Window Watchdog Timer and NPOR	3.6 to 36	V_{REG} V_{adj} V_{5P} V_{5SNR} V_{5CAN}	Pre-Reg Buck Linear Linear Linear	5.35 V Adjustable 5.0V 5.0 V 5.0 V	~1 A 800 mA 120 mA 150 mA 200 mA	eTSSOP-38	250 kHz to 2.4 MHz
A4412	Buck or Buck/Boost Pre-Regulator, Synch Buck, 5 LDOs with Pulse Width Watchdog Timer and SPI	3.8 to 50	V_{REG} V_{adj} V_{5CAN} V_{5P} V_{5A} V_{5B} 3V3	Pre-Reg SR Buck Linear Linear Linear Linear Linear	5.35 V 1.3-3.3 V 5.0 V 5.0 V 5.0 V 5.0 V 3.3 V	~1 A 400 mA 200 mA 100 mA 55 mA 30 mA 90 mA	eTSSOP-38	2.2 MHz
A4413	Buck or Buck/Boost Pre-Regulator, Synch Buck, 5V Protected LDO, Pulse Width Window Watchdog Timer and NPOR	3.5 to 36	V_{REG} V_{adj} V_{5P}	Pre-Reg Buck Linear	5.35 V Adjustable 5.0V	~1 A 800 mA 75 mA	QFN-32 (wettable flank)	250 KHz to 2.4 MHz

REGULATORS

POWER MANAGEMENT ICs (PMICS) FOR AUTOMOTIVE (CONTINUED)

Part Number	Key Features	V_{IN} Range (V)	Output	Topology	Output Voltage	Output Current	Package	Frequency (kHz)
A8600	4 x Buck, Low ISTANDBY, Two High Side Switches, BU/ACC Detectors For Infotainment Systems	4.4 to 40	V_{SW1} V_{SW2} V_{SW3} V_{SW4}	Buck Buck Buck Buck Controller	Adjustable Adjustable Adjustable Adjustable	1.0 A (2.5 A pk) 1.0 A (2.5 A pk) 2.0 A (2.5 A pk) Adjustable	LQFP-48	425 kHz
A8601	Boost + 3 x LDO + 2 Charge Pumps. For LCD Panels Used In Infotainment Systems	4 to 5.5	V_{OUT} V_{DVDD} V_{AVDD} V_{COM} V_{GH} V_{GL}	Boost Linear Linear Linear Charge Pump Charge Pump	22 V 5 V 5-14 V 2.9-6.8 V 2.4- 26 V -12.9 to -5 V	1.0 A 90 mA 350 mA 110 mA 32 mA 32 mA	eTSSOP-28	350 kHz to 2.25 Mhz
A8603	Boost + 2xLDO + 2 Charge Pumps with I^2C, low IQ	3 to 10	V_{OUT} V_{AVDD} V_{COM} V_{GH} V_{GL}	Boost Linear Linear Charge Pump Charge Pump	19 V 5 to 15 V 2.5 to 7.5 V 10 to 30 V -12 to -4 V	1.5 A 200 mA 36 mA 11 mA 11 mA	QFN-24	350 to 2250

POWER MANAGEMENT ICs (PMICS) FOR AUTOMOTIVE (CONTINUED)

Part Number	Key Features	V_{IN} Range (V)	Output	Topology	Output Voltage	Output Current	Package	Frequency (kHz)
ARG81400	Buck or Buck/Boost Pre-Regulator, Synch Buck, 5 LDOs with Pulse Width Watchdog Timer and SPI	3.8 to 50	V_{REG} V_{adj} V_{5CAN} V_{5P} V_{5A} V_{5B} 3V3	Pre-Reg SR Buck Linear Linear Linear Linear Linear	5.35 V 1.25-3.3 V 5.0 V 5.0 V 5.0 V 5.0 V 3.3 V	~1 A 400 mA 200 mA 100 mA 55 mA 30 mA 90 mA	eTSSOP-38	2.2 MHz
ARG81401	Buck or Buck/Boost Pre-Regulator with Two LDOs, Window Watchdog Timer and NPOR	3 to 36	V_{REG} V_{5CAN} 3V3	(Internal Buck or Buck-Boost)	6.6 V 5.0 V 3.3 V	750 mA 200 mA 300 mA	eTSSOP-20	250 KHz to 2.4 MHz
ARG81402	Buck Pre-Regulator, 5 LDOs, 3 Watchdog Types, NPOR and SPI	6 to 36	V_{REG} V_5 V_{5A} V_{5B} V_{5P} V_{33}	Pre-Reg Linear Linear Linear Linear Linear	5.35V 5.0 V 5.0 V 5.0 V 5.0 V 3.3V	~1.2 A 100 mA 55 mA 30 mA 100 mA 300 mA	5x5 QFN-32 (wettable flank)	2.2 MHz
ARG82800/01	Buck or Buck/Boost Pre-Regulator, 4x LDOs, 4x Hi Side Gate Drivers, Watchdog and SPI	3.8 to 36	V_{REG} V_{UC} V_{5p1} V_{5p2} V_{5c}	Pre-Reg Linear Linear Linear Linear	5.35 V 5.0V/3.3 V 5.0 V 5.0 V 5.0 V	~1 A 350 mA 120 mA 120 mA 100 mA	eTSSOP-38	2.2 MHz

REGULATORS

LINEAR REGULATORS

Part Number	Key Features	V_{IN} Range (V)	V_{OUT} (V)	I_{OUT} (mA)	AEC-Q100	Packages
A4480	Inductorless Buck-Boost, short-to-battery protection	3.5 to 40	5	50	Yes	eSOIC-8
A4481	50V rating, short-to-battery protection	5.25 to 50	5	50	Yes	eSOIC-8

LOW NOISE BLOCK REGULATORS FOR SATELLITE SET-TOP BOXES

Part Number	# of Channels	Output Current	Packages	Notes
A8307	Single	Adjustable 0.5 to 1 A	4 x 4 mm QFN-20	For multiswitch power
A8300/-1	Single	Adjustable 250 to 950 mA	4 x 4 mm QFN-24	Generation 5 (Ceramic or Electrolytic)
A8304	Single	Adjustable 250 to 950 mA	3 x 3 QFN-16	Generation 5 (Electrolytic)
ARG81300	Single	Adjustable 250 to 950 mA	3 x 3 QFN-16	Generation 5 (Ceramic)

LIGHTING

LED DRIVER ICs - AUTOMOTIVE LIGHTING

Part Number	Topology	Number of Channels	I_{OUT} Max (mA)	V_{IN}	WLEDs per Channel	Total WLEDs	Packages
A6217	Buck	1	3000	6 to 48	1 to 12	12	DFN-10, eSOIC-8
A6217-1	Buck	1	1500	6 to 48	1 to 12	12	DFN-10, eSOIC-8
A6214	Buck	1	2000	4.5 to 55	1 to 14	14	eSOIC-10
A6216	Buck	1	2000	4.5 to 55	1 to 14	14	eTSSOP-16
A6260	Linear	1	350	6 to 40	1 to 3	3	eSOIC-8
A6261	Linear	4	400	6 to 50	1 to 3	12	eMSOP-10, eTSSOP-16
A6262	Linear	4	400	6 to 50	1 to 3	12	eMSOP-10, eTSSOP-16
A6263	Linear	4	400	6 to 50	1 to 3	12	eSOIC-8
A6264	Linear	4	400	6 to 50	1 to 3	12	eMSOP-10, eTSSOP-16

LED DRIVER ICs - AUTOMOTIVE LIGHTING (CONTINUED)

Part Number	Topology	Number of Channels	I_{OUT} Max (mA)	V_{IN}	WLEDs per Channel	Total WLEDs	Packages
A6268	Buck-Boost / Boost Controller	1	Scalable 1 A+	5 to 50	2 to 15	15	eTSSOP-16
A6271-1	Buck-Boost / Boost Controller	1	Scalable 1 A+	4.5 to 50	2 to 15	15	eTSSOP-16
A6270-1	Linear Controller	2	Scalable	5.3 to 40	1 to 3	6	eTSSOP-16
A6274/-1	Linear with pre-regulator drive	6	360	5 to 42	1 to 3	18	eTSSOP-20
A6284/-1	Linear with pre-regulator drive	6	720	5 to 42	1 to 3	18	eTSSOP-20
ALT80800	SR Buck	1	2000	4.5 to 55	1 to 12	12	eTSSOP-16
A80802	Buck-Boost or Buck	1	2 A	3.8 to 50	1 to 12	12	3x3 DFN-10 (wettable flank)

LIGHTING

LED DRIVER ICs - AUTOMOTIVE BACKLIGHTING

Part Number	Topology	V_{IN}	Max OVP (V)	I_{OUT} Per Channel (mA)	Number of Channels	I_{OUT} Total (mA)	WLEDs/ Channel	Total WLEDs	Frequency	Packages
ALT80600	Boost	4.5 to 40	40	120	4	480	11	44	0.2 to 2.3 MHz	4 x 4 QFN-24 WF
A8517	Boost	4.5 to 40	40	60	10	600	10	100	0.4 to 2.3	eTSSOP-28
A8522	Boost	4.5 to 40	40	60	8	480	11	88	0.4 to 2.3	eTSSOP-28
A80601	Boost Controller	4.5 to 40	40	210	4	840	11	44	0.2 to 2.3 MHz	4 x 4 QFN-24 WF

LED DRIVER ICs - AUTOMOTIVE BACKLIGHTING (CONTINUED)

Part Number	Topology	V_{IN}	Max OVP (V)	I_{OUT} Per Channel (mA)	Number of Channels	I_{OUT} Total	WLEDs/ Channel	Total WLEDs	Frequency	Packages
A80602	Boost Controller	4.5 to 40	40	140	6	840	11	44	0.2 to 2.3 MHz	4 x 4 QFN-24 WF
A80603	Boost Controller	4.5 to 40	40	120	4	480	11	44	0.2 to 2.3 MHz	4 x 4 QFN-24 WF

LED DRIVER ICs - MAGNETICALLY-ACTUATED

Part Number	Topology	Number of Channels	I_{OUT} per Channel (mA)	V_{IN} (V)	LEDs/ Channel	Total LEDs	Packages
A1569	Linear	1	150	7 to 24	2 to 3	3	eSOIC-8
APS13569	Linear, Micropower	1	150	7 to 24	2 to 3	3	eSOIC-8

DRIVE

POWER IC PACKAGE PORTFOLIO

POWER INTEGRATED CIRCUITS

Allegro's power IC packages offer industry-leading thermal performance with limited board space.

TSSOP: Industry-standard TSSOP with optional exposed pad for enhanced thermal performance

QFP: Universal quad flat pack with exposed pad for enhanced thermal performance

QFN/: TDFN Quad and dual, low-profile, surface-mount packages with exposed pad for enhanced thermal performance (wettable flank options available)

MSOP: Industry-standard miniature small outline package with optional exposed pad for enhanced thermal performance

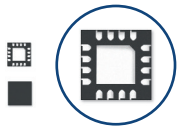
SOIC: Small outline integrated circuit with optional exposed pad for enhanced thermal performance

CSP: Wafer level chip scale

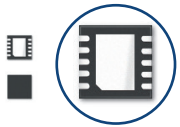
Additional industry-standard packaging options are available to meet individual design requirements.

WITHOUT LEADS

ES, EC, ET, EU, EV
(QFN with exposed pad)
Terminals: 16-48
Size: 3 x 3 mm body width to 7 x 7 mm body width

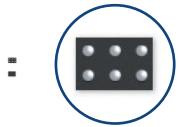


EJ (TDFN with exposed pad)
Terminals: 3-16
Size: 2 x 2 mm body to 3 x 3 mm body width



CHIP SCALE

CG (Chip Scale)
Terminals: 4-12

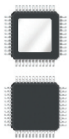


Please Note: Package sizes are photographed to show relative scale.

POWER IC PACKAGE PORTFOLIO

WITH LEADS

JP (QFP with exposed pad)
Terminals: 32, 48
Size: 7 x 7 mm body width



LJ (SOIC with exposed pad)
Terminals: 8-10
Size: 3.9 mm body width

LV, LP (TSSOP with exposed pad)
Terminals: 16-38
Size: 4.4 mm body width

LY/LZ (MSOP with exposed pad)
Terminals: 10
Size: 3 mm body width

LB (SOIC)
Terminals: 16-28
Size: 7.5 mm body width

Please Note: Package sizes are photographed to show relative scale.

MOTOR DRIVERS AND INTERFACE ICs

BRUSHLESS DC MOTOR DRIVERS - MOSFET GATE DRIVER ICs

Part Number	Output Voltage Range (V)	Output Current	Number of Bridges	Key Specifications	Interface	Packages
AMT49105	5.5 to 50	>10A Typically	Half-Bridge x3	LIN Phy, Current Sense Amp, Automotive Diagnostics, BEMF feedback, Bridge Switch, 150mA LDO, Window Watchdog	Direct/SPI	QFN
A89301	50	<20A Typically	Half-Bridge x3	Ultra Low Noise, FOC Commutation, Single Supply, OCP Protection, Fault Output, EEPROM Programmable, Sleep Mode, Closed Loop Speed Control, FG Speed Output	PWM Speed, I2C, Analog	QFN
AMT49406	50	<20A Typically	Half-Bridge x3	FOC Commutation, Single Supply, OCP Protection, Fault Output, EEPROM Programmable, Sleep Mode, Closed Loop Speed Control, FG Speed Output	PWM Speed, I2C, Analog	QFN, eTSSOP
A4911K	5.5 to 50	>10A Typically	Half-Bridge x3	3x Current Sense Amplifier, Single Supply, VDS Monitor, Programmable Fault Output, Advanced Diagnostics, EEPROM Programmable	Direct/SPI	QFP/QFN
A4913K	5.5 to 50	>10A Typically	Half-Bridge x3	High Gate Drive, 3x Current Sense Amplifier, Single Supply, VDS Monitor, Programmable Fault Output, Advanced Diagnostics, EEPROM Programmable	Direct/SPI	QFP/QFN
A4916K	5.5 to 50	>10A Typically	Half-Bridge x3	Single Supply, VDS Monitor, Programmable Fault Output, Advanced Diagnostics, EEPROM Programmable	Half-Bridge x3	QFP/QFN

Note: "K" suffix denotes automotive grade product (AEC-Q100 qualified)

MOTOR DRIVERS AND INTERFACE ICs

BRUSHLESS DC MOTOR DRIVERS - MOSFET GATE DRIVER ICs (CONTINUED)

Part Number	Output Voltage Range (V)	Output Current	Number of Bridges	Key Specifications	Interface	Packages
A4918K	4.5 to 50	>10A Typically	Half-Bridge x3	4.5V Operation, 3x Current Sense Amplifier, Single Supply, VDS Monitor, Programmable Fault Output, Advanced Diagnostics, EEPROM Programmable	Half-Bridge x3	Add QFN
A5931 (K)	5 to 16	>10 A	Three Half Bridges	Sensorless Commutation, High RPM, Internal PWM Current Control, Single Supply, OCP Protection, Sleep Mode, Advanced Diagnostics, EEPROM Programmable, Closed Loop Speed Control, FG Speed Output, RD Rotor Lock Output	PWM Speed/I²C	TSSOP,QFN
A5932 (K)	5.5 to 50	<20A Typically	Half-Bridge x3	Sensorless Communication, High RPM, Internal PWM Current Control, Single Supply, OCP Protection, Sleep Mode, Advanced Diagnostics, EEPROM Programmable, Closed Loop Speed Control, FG Speed Output, RD Rotor Lock Output	PWM Speed/I²C	QFN
A4946	4.8 to 32	1.35A	Half-Bridge x3	Sensor Commutation, Sinusoidal, VDS Monitor, Hall Bias, Lock Detect	Analog, PWM Speed	TSSOP
A5940	4.0 to 18	1.7A	Half-Bridge x3	Sensorless Commutation. Sinusoidal OCP Protection, Lock Detect with Auto Restart	PWM Speed	SOIC
A5941	3.0 to 5.5	1.4A	Half-Bridge x3	Sensorless Commutation. Sinusoidal, Single Supply, OCP Protection, EEPROM Programmable, Soft-start, Lock Detect	PWM Speed	SOIC

BRUSHLESS DC MOTOR DRIVERS - MOSFET GATE DRIVER ICs (CONTINUED)

Part Number	Output Voltage Range (V)	Output Current	Number of Bridges	Key Specifications	Interface	Packages
AMT49413	7 to 50	>10A Typically	Half-Bridge x3	Hall Commutation, Trapazoidal, Current Control, 1x Sense Amp, Diagnostics	Parallel	QFN
AMT49400	4.0 to 18	2A	Half-Bridge x3	Sensorless FOC Control, Single Supply, OCP Protection, EEPROM Programmable, Lock Detect	PWM Speed	SOIC
A5936	5.0 to 16	1.5A	Half-Bridge x3	Sensorless Commutation, Sinusoidal, Internal PWM Current Control, Single Supply, OCP Protection, Sleep Mode, FG Speed Output	PWM Speed	SOIC

BRUSHLESS DC MOTOR DRIVERS - INTEGRATED MOSFET ICs

Part Number	Output Voltage Range (V)	Output Current	Number of Bridges	Key Specifications	Interface	Packages
A5947	40	3.6	Half-Bridge x3	-	PWM Speed, I^2C, Analog	eTSSOP, QFN
A5947K	40	3.6	Half-Bridge x3	-	PWM Speed, I^2C, Analog	eTSSOP, QFN
AMT49400	18	2	Half-Bridge x3	-	PWM Speed	SOIC

Note: Please see the A6861 in "High Side Drivers" for the three phase isolator solution, page 46

Note: "K" suffix denotes automotive grade product (AEC-Q100 qualified)

MOTOR DRIVERS AND INTERFACE ICs

BRUSH DC MOTOR DRIVERS - LOW-VOLTAGE MOTOR DRIVERS (INTEGRATED MOSFET ICs)

Part Number	Output Voltage Range (V)	Output Current Range	Number of Bridges	Logic Supply Voltage Range	Packages
A3909	4 to 18	1.0 A	Dual full	Internally generated	SSOP-10, MSOP-10
A3906	2.5 to 9	1.0 A	Dual full	Internally generated	QFN-20
A3916	2.7 to 15	1.0 A	Dual full	Internally generated	QFN-16, QFN-20
A3918	2.5 to 9	1.0 A	Single full	Internally generated	QFN-16
A3901	2.5 to 5.5	400 mA	Dual full	Internally generated	DFN-10
A3903	2.5 to 5.5	500 mA	Single full	Internally generated	DFN-8
A3908	2.5 to 5.5	500 mA	Single full	Internally generated	DFN-8
A3910	2.5 to 5.5	500 mA	Dual Half	Internally generated	DFN-8

BRUSH DC MOTOR DRIVERS - MOSFET GATE DRIVER ICs WITH PARALLEL INTERFACE

Part Number	Output Voltage Range (V)	Output Current Range	Number of Bridges	Logic Supply Voltage Range	Packages
A3946K	7 to 60	>10 A Typical	Half bridge	Internally generated	SOIC-16, eTSSOP-16
A3921K	7 to 50	> 10 A Typical	Single full	Internally generated	eTSSOP-28
A3922K	5.5 to 50	>10 A Typical	Single full	Internally generated	eTSSOP-28
A3924K	5.5 to 50	>10 A Typical	Single full	Internally generated	eTSSOP-38
A3941K	7 to 50	>10 A Typical	Single full	Internally generated	eTSSOP-28
A4926	5.5 to 50	>10 A Typical	Half bridge	Internally generated	eTSSOP-20
A4927	5.5 to 50	>10 A Typical	Half bridge	Internally generated	eTSSOP-24
A4928	5.5 to 50	>10 A	Half-Bridge x1	—	TSSOP
A4940K	5.5 to 50	>10 A Typical	Single full	3 V to 5.5 V	eTSSOP-24
A4957	4.5 to 50	>10 A Typical	Single full	3 V to 5.5 V	QFN-16
A4955	5.5 to 50	<20 A Typical	Single full	Internally generated	eTSSOP-20, QFN-20
A4956	5.5 to 50	<20 A Typical	Single full	Internally generated	eTSSOP-20, QFN-20
A5929K	5.5 to 50	>10A Typical	Single Full	Internally generated	eTSSOP-24
A5957	5.5 to 50	<20 A Typical	Single full	Internally generated	eTSSOP-20, QFN-20

Note: “K” suffix denotes automotive grade product (AEC-Q100 qualified)

MOTOR DRIVERS AND INTERFACE ICs

BRUSH DC MOTOR DRIVERS - INTEGRATED MOSFET ICs WITH PARALLEL INTERFACE

Part Number	Output Voltage Range (V)	Output Current Range	Number of Bridges	Logic Supply Voltage Range	Packages
A3959	9.5 to 50	3.0 A	Single full	4.5 V to 5.5 V	DIP-24, SOIC-24, eTSSOP-28
A3998	9 to 50	1.5 A	Dual full with dual regulators	3 V to 5.5 V	QFN-32
A4973	5 to 50	1.5 A	Single full	3 V to 5.5 V	DIP-16, SOIC-16
A4950 / A4950K	8 to 40	3.5 A	Single full	Internally generated	eSOIC-8
A4952	8 to 40	2.0 A	Single full	Internally generated	eMSOP-10
A4953	8 to 40	2.0 A	Single full	Internally generated	eSOIC-8
A4954	8 to 40	2.0 A	Dual full	Internally generated	eTSSOP-16
A3950	8 to 36	2.8 A	Single full	Internally generated	eTSSOP-16, QFN-16
A3968	Vcc to 30	650 mA	Dual full	4.75 V to 5.5 V	SOIC-16
A5950 / A5950K	5.5 to 40	3.0 A	Single full	Internally generated	QFN-16, eTSSOP-16
A5989	8 to 40	1.6 A (Step), 3.2 A (DC)	Three full	Internally generated	QFN-36

BIPOLAR STEPPER MOTOR DRIVERS - PARALLEL INTERFACE (I0,I1)

Part Number	Output Voltage Range (V)	Output Current Range	Interface	Packages
A4975	5 to 50	1.5 A	Parallel (I_0, I_1)	DIP-16, SOIC-16
A4970	10 to 45	750 mA	Parallel (I_0, I_1)	DIP-34, SOIC-24
A4990K	7 to 50	1.4 A	Parallel (IN_2, IN_4)	eTSSOP-20
A3988	8 to 36	1.2 A	Parallel (I_0, I_1)	QFN-36, eLQFP-48
A3989	8 to 35	1.2 A (Step), 2.4 A (DC)	Parallel (I_0, I_1)	QFN-36
A3995	8 to 35	2.4 A	Parallel (I_0, I_1)	QFN-36
A4986	8 to 35	2.0 A	Parallel (I_0, I_1)	eTSSOP-24
A4987	8 to 35	1.0 A	Parallel (I_0, I_1)	QFN-24, eTSSOP-24
A3966	4.5 to 30	650 mA	Parallel (I_0, I_1)	SOIC-16
A3916	2.7 to 15	1.0 A	Parallel (I0, I1)	QFN-16, QFN-20
A3906	2.5 to 9	1.0 A	Parallel (I_0, I_1)	QFN-20
A3901	2.5 to 5.5	400 mA	Parallel (I_0, I_1)	DFN-10
A5988	8 to 40	1.6 A	Parallel (Phase, I_0, I_1)	QFN-36, eLQFP-48
A5989	8 to 40	1.6 A (Stepper), 3.2 A (DC)	Parallel (Phase, I_0, I_1) (Phase,Enable, Mode)	QFN-36
A5990	8 to 40	1.6 A	Parallel (Phase, I_0, I_1)	QFN-40
AMT49701	4 to 18	1.0 A	Parallel	TSSOP
AMT49702	3.5 to 15	1.0 A	Parallel	TSSOP

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MOTOR DRIVERS AND INTERFACE ICs

BIPOLAR STEPPER MOTOR DRIVERS - SERIAL INTERFACE

Part Number	Output Voltage Range (V)	Output Current Range	Interface	Packages
A3992	15 to 50	1.5 A	Serial	DIP-24, eTSSOP-24
A3985	12 to 50	<10 A Typical (MOSFET gate driver IC)	Serial	TSSOP-38
A3998	9 to 50	1.5 A	Serial	QFN-32
A3981K	7 to 50	1.4 A	SPI / Parallel (Translator)	eTSSOP-28
A4979	7 to 50	1.5 A	SPI / Parallel (Translator)	eTSSOP-28
A4980K	3.3 to 50	1.4 A	SPI / Parallel (Translator)	eTSSOP-28
A4993K	3.8 to 50	1.4 A	SPI / Parallel (Translator)	eTSSOP-28
AMT49700K	42	1.6A	SPI/Parellel (Translator) w/ Motion Control	QFN

BIPOLAR STEPPER MOTOR DRIVERS - STEP / DIRECTION INTERFACE

Part Number	Output Voltage Range (V)	Output Current Range	Interface	Packages
A4989	12 to 50	<10 A Typical (MOSFET gate driver IC)	Parallel (Translator)	TSSOP-38
A3987	8 to 50	1.5 A	Parallel (Translator)	eTSSOP-24
A3981K	7 to 50	1.4 A	Parallel / SPI (Translator)	eTSSOP-28
A4979	7 to 50	1.5 A	SPI / Parallel (Translator)	eTSSOP-28

BIPOLAR STEPPER MOTOR DRIVERS - STEP / DIRECTION INTERFACE (CONTINUED)

Part Number	Output Voltage Range (V)	Output Current Range	Interface	Packages
A4980K	3.3 to 50	1.4 A	Parallel / SPI (Translator)	eTSSOP-28
A4992K	7 to 50	1.4 A	Parallel / SPI (Translator)	eTSSOP-20
A5984	8 to 40	2.0 A	Parallel (Translator)	QFN-24, QFN-32, eTSSOP- 24
A3977	8 to 35	2.5 A	Parallel (Translator)	eTSSOP-28
A3979	8 to 35	2.5 A	Parallel (Translator)	eTSSOP-28
A3982	8 to 35	1.5 A	Parallel (Translator)	SOIC-24
A3983	8 to 35	1.5 A	Parallel (Translator)	eTSSOP-24
A3984	8 to 35	1.5 A	Parallel (Translator)	eTSSOP-24
A4982	8 to 35	2.0 A	Parallel (Translator)	QFN-32, eTSSOP-24
A4983	8 to 35	2.0 A	Parallel (Translator)	QFN-28
A4984	8 to 35	2.0 A	Parallel (Translator)	QFN-24, QFN-32, eTSSOP- 24
A4985	8 to 35	1.0 A	Parallel (Translator)	QFN-24, QFN-32, eTSSOP- 24
A4988	8 to 35	2.0 A	Parallel (Translator)	QFN-28
A3967	4.75 to 30	750 mA	Parallel (Translator)	SOIC-24
A5976	8 to 40	2.8 A	Parallel (Translator)	eTSSOP-28
A5977	8 to 40	2.8 A	Parallel (Translator)	eTSSOP-28
A5979	8 to 40	2.8 A	Parallel (Translator)	eTSSOP-28
A5985	8 to 40	2.0 A	Parallel (Translator)	QFN-28
A5984	8 to 40	2.0 A	Parallel (Translator)	QFN-32, eTSSOP-24

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MOTOR DRIVERS AND INTERFACE ICs

HIGH SIDE DRIVERS

Part Number	Output Voltage	Output Current (per channel)	Number of Outputs	Description	Serial Input	Parallel Input	High Side / Low Side	Packages
A3942K	60	4 x pre-drive	4	Four channel high side MOSFET gate driver IC	Y	Y	High Side	TSSOP-38
A2982	50	8 x 350 mA	8	Eight channel high side driver IC	N	Y	High Side	SOIC-20
A6850K	40	2 x 25 mA	2	Two channel high side protected switch with current monitor outputs	N	Y	High Side	SOIC-8
UDN2987-6	35	8 x 350 mA	8	Eight channel high side driver IC with over-current protection	N	Y	High Side	SOIC-20
A6861K	50	3 x pre-drive	3	3 channel high side MOSFET gate driver	N	Y	High Side	TSSOP-16
A6862K	50	3 x pre-drive	3	3 channel high side MOSFET gate driver	N	Y (ENABLE, IG)	High Side	TSSOP-16

LOW SIDE DRIVERS

Part Number	Output Voltage	Output Current (per channel)	Number of Outputs	Description	Serial Input	Parallel Input	High Side / Low Side	Packages
A2550K	50	3 x 250 mA	3 x low side 1 x LDO	3 channel low side relay driver / 5V regulator, POR, and watchdog	N	Y	Low Side	eTSSOP-16
A3944K	50	N/A	6	Six channel low side MOSFET Pre-driver IC	Y	N/A	N/A	eTSSOP-28

PHOTOELECTRIC SMOKE DETECTOR ICs

Part Number	Output Voltage	Reduced Sensitivity Timer	Horn Pattern	Supply Voltage (VDC)	Temperature Range (°C)	Packages
A5303	Photo	Yes	Temporal (T3)	2.3 to 5.5	-20 to 85	TSSOP-20
A5366	Photo	Yes	Temporal (T3)	6 to 12	-25 to 75	DIP-16, SOIC-16
A5358	Photo	Yes	Continuous Pulsing	6 to 12	-25 to 75	DIP-16, SOIC-16

IONIZATION SMOKE DETECTOR ICs

Part Number	Output Voltage	Reduced Sensitivity Timer	Horn Pattern	Supply Voltage (VDC)	Temperature Range (°C)	Packages
A5348	Ion	Yes	Continuous Pulsing	6 to 12	-10 to 60	DIP-16
A5367	Ion	Yes	Temporal (T3)	6 to 12	-10 to 60	DIP-16

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