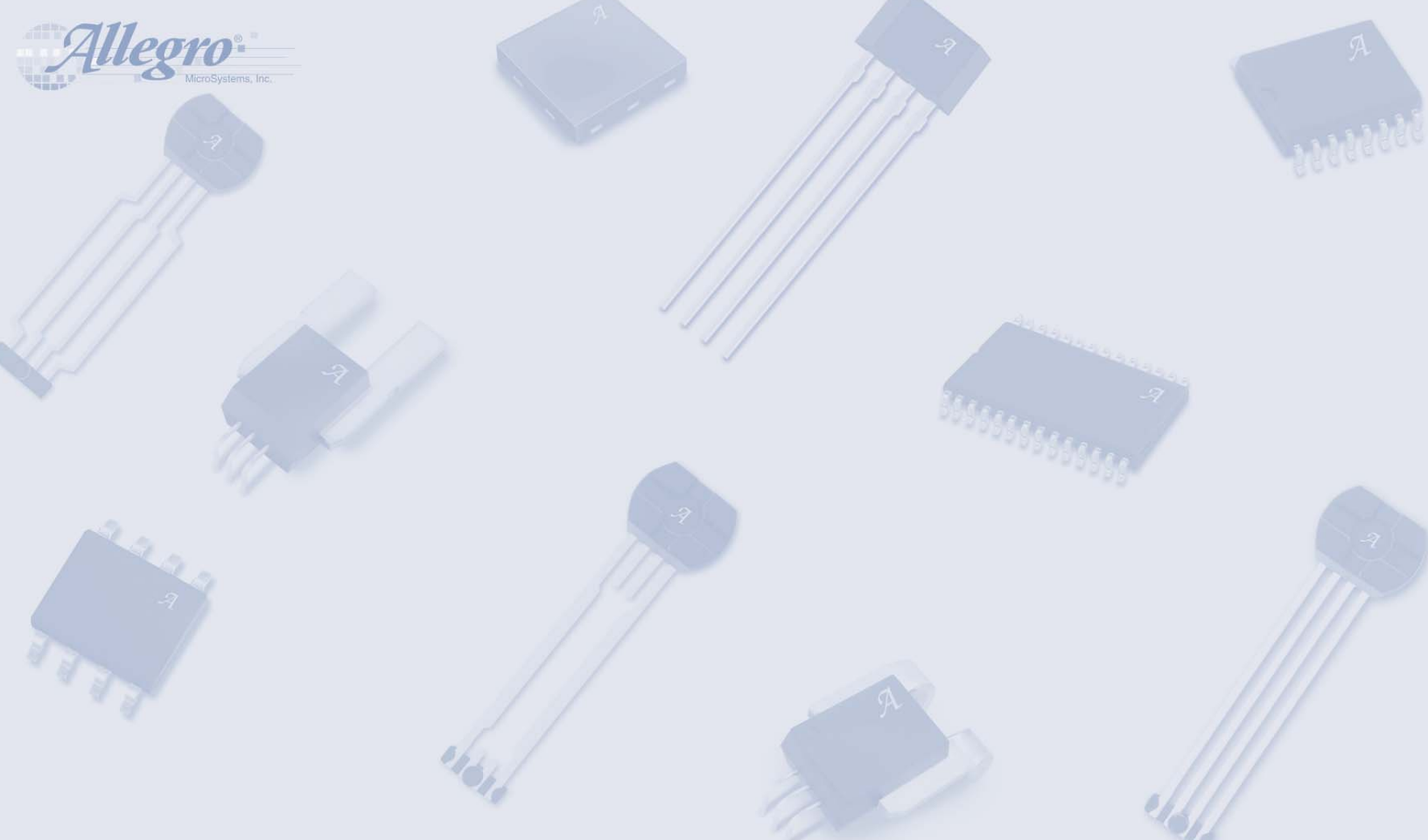
Product Selection Guide

January 2009

Allegro® MicroSystems, Inc.

High-Performance Power ICs and Hall-Effect Sensors



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Allegro Sensors

Allegro MicroSystems, Inc. is a leader in developing and manufacturing innovative, reliable, high-performance Hall-effect magnetic sensors. The development of Allegro sensors 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.
- Revolutionary, integrated current sensing packages with high bandwidth magnetic design features. See the SOIC 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 EL, EW and CG packages. The package options shown below are a sampling of Allegro's most recent, high technology packages. For specific package information, please visit Allegro's website at: www.allegromicro.com/en/Products/Packaging.

Current Sensing Packages with Integrated Conductors

CA/CB
Terminals: 5

L/LC (SOIC-8)
Terminals: 8

Surface Mount Packages

LH (SOT23W)
Terminals: 3

L/LC (SOIC-8)
Terminals: 8

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

Allegro Sensors

Single In-Line Packages

UA (TO-92)
Terminals: 3

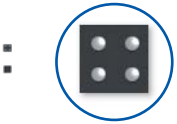
K
Terminals: 4

KT
Terminals: 4

KN
Terminals: 4

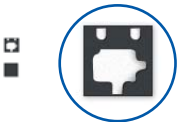
Low Profile, Smallest Footprint Packages

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



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

EL (DFN)
Terminals: 3, 6
Size: 2 x 2 mm body width



Integrated Magnet Packages

SE
Terminals: 4

SG
Terminals: 4

SH
Terminals: 4

SJ
Terminals: 4

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

Allegro Integrated Circuits

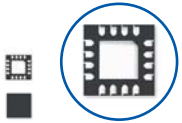
Allegro MicroSystems, Inc. is a leader in developing, manufacturing and marketing high-performance power integrated circuits and integrated Hall-effect magnetic sensors. Allegro's innovative solutions serve high-growth applications within the automotive, communications, computer/office automation, consumer and industrial markets.

- Allegro's power packages offer industry-leading thermal performance with limited board space.
- TSSOP – Industry-standard TSSOP with optional thermal pad for enhanced power dissipation
- QFP – Universal quad flat pack with thermal pad for enhanced performance
- QFN/TDFN – Quad and dual, low-profile, surface-mount packages with thermal pad for enhanced performance
- MSOP – Industry-standard miniature small outline package
- SOIC – Small outline integrated circuit with some thermal pad versions for enhanced performance
- CSP – Wafer level chip scale
- Additional industry-standard packaging options are available to meet individual design requirements.

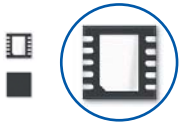
The package options shown below are a sampling of Allegro's most recent, high technology packages. For specific package information, please visit Allegro's website at: www.allegromicro.com/en/Products/Packaging.

Without Leads

ES, EC, ET, EU, EV
(QFN with exposed pad)
Terminals: 16-48
Size: 3x3 mm body width to 7x7 mm body width

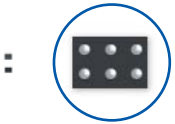


EJ (TDFN with exposed pad)
Terminals: 3-16
Size: 2x2 mm body to 3x3 mm body width



Chip Scale

CG (Chip Scale)
Terminals: 4-12



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

With Leads

JP (QFP with exposed pad)
Terminals: 48
Size: 7x7 mm body width

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

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

LP (TSSOP with exposed pad)
Terminals: 16-32
Size: 4.4 mm body width

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

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

Linear Hall-Effect Sensors							
P/N	Supply Voltage (V)	Quiescent Output (V)	Typical Sensitivity (mV/G)	Output Bandwidth (kHz)	Temp Ranges	Packages	Features
A1301	4.5 to 6.0	Typ 50% Vcc	2.50	20	E, K	LH, LT, UA	Continuous-time
A1302	4.5 to 6.0	Typ 50% Vcc	1.30	20	E, K	LH, LT, UA	Continuous-time
A1321	4.5 to 5.5	Typ 50% Vcc	5.00	30	E, L	LH, UA	Chopper-stabilized
A1322	4.5 to 5.5	Typ 50% Vcc	3.13	30	L	LH, UA	Chopper-stabilized
A1323	4.5 to 5.5	Typ 50% Vcc	2.50	30	E, L	LH, UA	Chopper-stabilized
A1373	4.5 to 5.5	0.7 to 4.5 (Programmable)	1.75 to 11.25 (Programmable)	2.5	E, L	KB	Chopper-stabilized
A1374	4.5 to 5.5	0.7 to 4.5 (Programmable)	1.75 to 11.25 (Programmable)	20	E, L	KB	Chopper-stabilized
A1381	4.5 to 5.5	2.3 to 2.6 (Programmable)	6 to 9 (Programmable)	12	E, L	LH, UA	Chopper-stabilized
A1382	4.5 to 5.5	2.3 to 2.6 (Programmable)	4 to 6.25 (Programmable)	17	E, L	LH, UA	Chopper-stabilized
A1383	4.5 to 5.5	2.3 to 2.6 (Programmable)	2.75 to 4.25 (Programmable)	21	E, L	LH, UA	Chopper-stabilized
A1384	4.5 to 5.5	2.3 to 2.6 (Programmable)	2 to 3	27	E, L	LH, UA	Chopper-stabilized
A1386	4.5 V to 5.5	2.3 to 2.6 (Programmable)	2.1	20	E, L	LH, UA	Chopper-stabilized
A1391	2.5 to 3.5	Typ 50% Vref	1.25	10	S	EH	Chopper-stabilized
A1392	2.5 to 3.5	Typ 50% Vref	2.50	10	S	EH	Chopper-stabilized
A1393	2.5 to 3.5	Typ 50% Vref	5	10	S	EH	Chopper-stabilized, µPower
A1395	2.5 to 3.5	Typ 50% Vref	10	10	S	EH	Chopper-stabilized, µPower

Unipolar Hall-Effect Digital Switches

P/N	Operate Point (G)	Release Point (G)	Hysteresis (G)	Temp Range	Packages	Output	Replaces	Features
A1101	30 to 175	10 to 140	20 to 80	E, L	LH, UA	Open Collector	A3141	
A1102	115 to 245	60 to 190	30 to 80	E, L	LH, UA	Open Collector	A3142	
A1103	205 to 355	150 to 300	30 to 80	E, L	LH, UA	Open Collector	A3143	
A1104	35 to 450	25 to 430	>20	E, L	LH, UA	Open Collector	A3144	
A1106	260 to 430	160 to 330	70 to 140	E, L	LT, UA	Open Collector	A3121, A3122, A3123	
A1120	<50 (typ 35)	>5 (typ 25)	Typ 10	E,L	LH, UA	Open Collector	A3240	Supply Voltgage 3 V to 24 V Chopper-Stabilized
A1142	<115	>45	5 to 30	E, L	LH, UA	Current Source	A3361	Output high without magnetic field
A1143	<115	>45	5 to 30	E, L	LH, UA	Current Source	A3163, A3362	Output low without magnetic field, inverted output
A1145	20 to 60	10 to 55	5 to 30	E, L	LH, UA	Current Source		
A1146	20 to 60	10 to 55	5 to 30	E, L	LH, UA	Current Source		
A1147	20 to 80	10 to 60	5 to 30	E, L	LH, UA	Current Source		
A1148	20 to 80	10 to 60	5 to 30	E, L	LH, UA	Current Source		
A1180	60 to 200		5 to 30	E, L	LH, UA	Current Source		
A1182	60 to 200		5 to 30	E, L	LH, UA	Current Source		
A1183	60 to 200		5 to 30	E, L	LH, UA	Current Source		
A1184	300 to 600		5 to 30	E, L	LH, UA	Current Source		
A1185	10 to 60		5 to 30	E, L	LH, UA	Current Source		
A1186	10 to 60		5 to 30	E, L	LH, UA	Current Source		
A3241	<120	>40	>10 Typ 25	E, L	LH, UA	Open Collector		Chopper-stabilized
A3242	<205	>105	>10 Typ 25	E, L	LH, UA	Open Collector		Chopper-stabilized
A3250	50 to 350	Typ 13 G below Bop	5< 13-18 Typ <35	L	UA	Open Collector		Programmable switchpoints
A3251	50 to 350	Typ 13 G below Bop	5< 13-18 Typ <35	L	UA	Open Collector		Programmable switchpoints
A3295	<75	>5	Typ 10	K	LH, UA	Open Collector		Programmable switchpoints
A3340	50 max	5 G min	6 G typ	E, L	LH, UA	Open Collector		Chopper-Stabilized

Temperature range codes: S = -20°C to 85°C E = -40°C to 85°C K = -40°C to 125°C L = -40°C to 150°C

Omnipolar Hall-Effect Digital Switches

P/N	Operating Voltage	Operate Point (G)	Release Point (G)	Hysteresis (G)	Temp Ranges	Packages	Supply Current	Features
A3211	2.5 V to 3.5 V	±55	±10	Typ 7.7	E	EL, EH, LH	6 µA (typ)	Inverted output; operates at approx. 0.1% duty cycle
A3212	2.5 V to 3.5 V	±55	±10	Typ 7.7	E	EH, EH, LH, UA	6 µA (typ)	Operates at approx. 0.1% duty cycle
A3213	2.4 V to 5.5 V	±70	±10	Typ 7.7	E, L	LH, UA	825 µA (max)	
A3214	2.4 V to 5.5 V	±70	±10	Typ 7.7	E, L	LH, UA	14 µA (max)	Operates at approx. 0.1% duty cycle
A3245	3.6 V to 24 V	±55	±10	Typ 15	E, L	LH, UA	1.5 mA (typ)	Integrated voltage regulator
A1171	1.65 V to 3.5 V	±55	±6	Typ 6	E	EW	4.0 µA (typ) (VDD = 1.8 V)	Complementary outputs Also unipolar operating mode
A1172	1.65 V to 3.5 V	±55	±6	Typ 6	E	CG	4.0 µA (typ) (VDD = 1.8 V)	Wafer Level Chip Scale Package (WLCSP)

BLDC Motor Drivers with Integrated Hall for Commutation

P/N	Continuous Load Current	Number of Bridges	Output	Motor Type	Package	Operate Point (G)	Features
A1442	±200	Full bridge	MOS	BLDC	EW	±75	Reverse battery and short circuit protection, Active braking function, Thermal shutdown protection, Soft-switching
A1444	±200	Full bridge	MOS	BLDC	EW	±75	Reverse battery and short circuit protection, Externally controlled speed regulation, Active braking function, Thermal shutdown protection
A1448	±200	Full bridge	MOS	BLDC	EW	±75	Reverse battery and short circuit protection, Direct input PWM Speed Control, Active braking function, Thermal shutdown protection, Soft-switching

Low Power Hall-Effect Digital Latches

P/N	Operating Voltage	Operate Point (G)	Release Point (G)	Hysteresis (G)	Temp Ranges	Packages	Supply Current	Features
A1174	1.65 V to 3.5 V	5 to 55	-55 to -5	Typ 72	E	EW	82 mA (Vdd = 3 V)	Innovative clocking scheme of current control and direction detection

Bipolar Hall-Effect Digital Switches

P/N	Operate Point (G)	Release Point (G)	Hysteresis (g)	Temp Range	Packages	Output	Replaces	Features
A1202	<75	>-75	>30	E, L	LH, UA		UGx3133	
A1203	<95	>-95	>30	E, L	LH, UA		UGx3132	
A1205	-40 to 50	-50 to 40	5 to 55	E, L	LH, UA		A3134	Optimized for pulsed Vcc
A3230	-10 to 25	-25 to 10	5 to 25	E, L	LH, UA			Chopper-stabilized (bipolar switch)

Hall-Effect Digital Latches

P/N	Operate Point (G)	Release Point (G)	Hysteresis (g)	Temp Range	Packages	Output	Replaces	Features
A1210	25 to 150	-150 to -25	>50 (typ 180)	E, L	LH, UA	Open Collector	UGN3177	
A1211	15 to 180	-180 to -15	>80 (typ 180)	E, L	LH, UA	Open Collector	UGN3175	
A1212	50 to 175	-175 to -50	100 to 350	L	LH, UA	Open Collector	A3187	
A1213	80 to 200	-200 to -80	160 to 400	E, L	LH, UA	Open Collector	A3188, A3189	
A1214	140 to 300	-300 to -140	280 to 600	E, L	LH, UA	Open Collector	A3185	
A1220	5 to 40	-40 to -5	Typ 45	E, L	LH, UA	Open Collector	A3280	Supply Voltage 3 V to 24 V, Chopper-stabilized
A1221	15 to 90	-90 to -15	Typ 100	E, L	LH, UA	Open Collector	A3281	Supply Voltage 3 V to 24 V, Chopper-stabilized
A1242	5 to 80	-80 to -5	40 to 110	E, L	LH, UA	Current Source		Two-wire operation
A3283	100 to 180	-180 to -100	Typ 300	E, L	LH, LT, UA	Open Collector		Chopper-stabilized
A3290	5 to 50	-50 to -5	10 to 100	K	LH, UA	Open Collector		Chopper-stabilized
A3291	10 to 100	-100 to -10	20 to 100	K	LH, UH	Open Collector		Chopper-stabilized

Highly-Accurate Analog Speed Sensors with Digital Outputs

P/N	Operate Point (G)	Release Point (G)	Hysteresis (g)	Temp Ranges	Packages	Minimum Speed (Hz)
A1421	0 to 27.5	-12.5 to 7.5	Typ 15	L	K	20
A1422	5 to 35	-35 to -5	Typ 30	L	K	20
A1423	10 to 100	-100 to -10	Typ 130	L	K	20
A1425	-11 to 11	-11 to 11	Typ 8.5	L	K	20

Dual Element Speed & Direction Sensors for Ring Magnets

P/N	Operate Point (G)	Release Point (G)	Hysteresis (g)	Temp Ranges	Packages	Outputs Pins
A3423	55 max	-55 min	Typ 30	E, L	K, L	Speed & Direction
A3425	30 max	-30 min	Typ 14	E, L	K, L	Dual Channel Quadrature

Gear-Tooth Hall-Effect Speed Sensors (Includes IC and Magnet)

P/N	Supply Voltage	Output Type	Power-On State	Specified Air Gap Range (>20 Hz)	Key Spec *See datasheet for details*	Minimum Speed	Applications	Temp and Packages
ATS616	3.5 to 24	3-wire	High (off)	0.4 to 2.50 mm	Timing accuracy	10 Hz	Camshaft and Crankshaft	LSG
ATS625	4 to 24	3-wire	High (off)	0.5 to 2.50 mm	Repeatability	Zero speed	Crankshaft	LSG
ATS635/36	4.2 to 24	3-wire	Low (off) / High (off)	2.50 mm max	User programmable switch point	Zero speed	Coarse	LSE
ATS643	4 to 24	2-wire	High (current)	0.5 to 2.50 mm	Duty cycle	Zero speed	Transmission	LSH
ATS667	4.0 V to 24 V	3-wire	High	0.5-2.5 mm	Duty Cycle	Zero-speed	Transmission	L, SG
ATS675	3.3 to 26.5	3-wire	TPO	0.5 to 2.50 mm	Timing accuracy	Zero speed	Camshaft	LSE
ATS682	4.0 V to 18 V	2-wire	High	0.5-2.75 mm	Duty Cycle	Zero-speed	ABS	L, SH

Integrated Leadframe Current Sensors - Unidirectional, Bidirectional and Hot Swap Controllers

Type	P/N	Measurement Range	Isolation Voltage (V)	Bandwidth (kHz)	Temp Ranges	Packages	Features
Bidirectional	ACS712	±5 A to 30 A	2100	>50	E	SOIC-8	Low noise, fast response, shielded current sensor
Unidirectional	ACS713	20 A to 30 A	2100	>50	E	SOIC-8	Unidirectional version of the ACS712
Bidirectional	ACS714	±5 A to 30 A	2100	80	E, L	L	Low noise, high speed current sensor with integrated shield; Automotive grade
Unidirectional	ACS715	20 A to 30 A	2100	80	E, L	L	Unidirectional version of ACS714 - Automotive grade
Bidirectional	ACS754	±50 A to 200 A	3000	35	S, K, L	CB	Higher accuracy than ACS752
Unidirectional	ACS755	50 A to 130 A	3000	35	S, K, L	CB	Unidirectional version of the ACS754
Bidirectional	ACS756	±50 A to 100 A	3000	120	S, K	CA	Most accurate, highest bandwidth current sensor for monitoring currents from 50 to 100 A
Hot swap controller	ACS761	±20 A	N/A	50	E	LF	Hall-effect hot swap protection IC

Linear Hall-Effect Current Sensors

P/N	Supply Voltage	Quiescent Output (V)	Typical Sensitivity	Output Bandwidth (kHz)	Temp Ranges	Packages	Features
A1351	4.5 to 5.5	50 % (QDC)	0.055 to 0.095 % DC/G	0.125	K	KT	PWM output, Factory programmed TC to 0 %/°C
A1360	4.5 to 5.5	Typ 10% or 50% Vcc	0.7 to 1.4 mV/G Programmable	50	L	KT	Factory programmed TC to 0 %/°C
A1361	4.5 to 5.5	Typ 10% or 50% Vcc	1.4 to 4.5 mV/G Programmable	50	L	KT	Factory programmed TC to 0 %/°C
A1362	4.5 to 5.5	Typ 10% or 50% Vcc	4.5 to 16 mV/G Programmable	50	L	KT	Factory programmed TC to 0 %/°C

VF Display Drivers

P/N	Maximum Output Voltage (V)	Maximum Output Current (mA)	Number of Outputs	Sink/Source	Latched Output	Serial Input	Packages	Features
A6810	60	25	10	Source	Yes	Yes	DIP-18, SOIC-20, PLCC-20	
A6812	60	25	20	Source	Yes	Yes	SOIC-28, PLCC-28	
A6818	60	25	32	Source	Yes	Yes	PLCC-44	

Relay/Solenoid Drivers

P/N	Maximum Output Voltage (V)	Maximum Output Current (mA)	Number of Outputs	Sink/Source	Latched Output	Serial Input	Packages	Features
A2557	60	300	4	Sink	No	No	DIP-16, SOIC-16, PLCC-28	
A6B595	50	150	8	Sink	Yes	Yes	DIP-20, SOIC-20	
A6800	50	350	4	Sink	Yes	No	DIP-14, SOIC-14	Clamp diodes
A6801	50	350	8	Sink	Yes	No	DIP-22, SOIC-24, PLCC-28	Clamp diodes
A6841	50	350	8	Sink	Yes	Yes	DIP-18, SOIC-20	Clamp diodes
A2987-6	35	350	8	Source	No	No	DIP-20, SOIC-20	Clamp diodes, current limit, TSD
A2981	50	350	8	Source	No	No	DIP-18	Clamp diodes
A2982	50	350	8	Source	No	No	DIP-18, SOIC-20	Clamp diodes
UDx2559	60	600	4	Sink	No	No	DIP-16, PLCC-28, SOIC-16	-40 to 125°C temp range available

LED Constant-Current Drivers and Switches							
P/N	Maximum Output Current (mA)*	Maximum Output Voltage (V)	Number of Outputs	Latched Output	Serial Input	Packages	Features
A6282	50	13	16	Yes	Yes	QFN-24, SOIC-24, HTSSOP-24	CC, TSD, UVLO
A6285	80	13	16	Yes	Yes	QFN-32	CC, DotC, SOTO, TSD, UVLO
A6275	90	17	8	Yes	Yes	DIP-16, SOIC-18	CC, UVLO
A6276	90	17	16	Yes	Yes	DIP-24, SOIC-24, HTSSOP-24	CC, UVLO
A6278	90	17	8	Yes	Yes	DIP-16, SOIC-18, HTSSOP-16	CC, LOD, SOTO, TSD, UVLO
A6279	90	17	16	Yes	Yes	DIP-24, SOIC-24, HTSSOP-24, QFN-28	CC, LOD, SOTO, TSD, UVLO
A6833	100	30	32	Yes	Yes	PLCC-44	
A6832	100	40	32	Yes	Yes	PLCC-44	
A6280	150	17	3	Yes	Yes	DIP-16, QFN-16	CC, DotC, PWM, TSD, UVLO
A6281	150	17	3	Yes	Yes	QFN-16	CC, DotC, PWM, TSD, UVLO, internal PWM clock
A6277	150	24	8	Yes	Yes	DIP-20, SOIC-20	CC, UVLO, High/Low brightness control pin
A6B595	150	50	8	Yes	Yes	DIP-20, SOIC-20	-40 to 125°C temp range available
A6821	350	50	8	Yes	Yes	DIP-16, SOIC-16	
A6260SLJ	350 (more if current-limit switch is bypassed)	39	1	No	No	SOIC-8	Thermal foldback, Reverse battery protection; Enable input for PWM; Slew-rate limiting
A6210GEU	3000	40	1	No	No	QFN-16	High switching frequency, up to 2 MHz, Integrated power MOSFET, Only 6 external components required, Disable input for PWM, Thermal shutdown
UDx2559	600	60	4	No	No	DIP-16, PLCC-28, SOIC-16	-40 to 125°C temp range available

Note: CC = Constant Current, DotC = Dot Correction, LOD = LED Open Detection, PWM = PWM control per channel, SOTO = Staggered Output Turn-on, TSD = Thermal Shutdown, UVLO = Under-Voltage Lockout

*** Per Channel**

Smoke Detector ICs								
P/N	Sensor Type	Reduced Sensitivity Timer	Horn Pattern	Supply Voltage (VDC)	Reverse Battery Protect	Temperature Range (°C)	Packages	Features
A5348	Ion	Y	Continuous Pulsing	6 to 12	Y	0 to 50	DIP-16	
A5349	Ion	Y	Continuous Pulsing	6 to 12		0 to 50	DIP-16	For AC-powered application only
A5350	Ion		Continuous Pulsing	6 to 12	Y	0 to 50	DIP-16	
A5364	Ion		Temporal (T3)	6 to 12	Y	0 to 50	DIP-16	
A5367	Ion	Y	Temporal (T3)	6 to 12	Y	-10 to 60	DIP-16	
A5358	Photo	Y	Continuous Pulsing	6 to 12		-25 to 75	DIP-16, SOIC-16	Warns on degraded chamber sensitivity
A5366	Photo	Y	Temporal (T3)	6 to 12		-25 to 75	DIP-16, SOIC-16	Warns on degraded chamber sensitivity

Common features

All devices include:

– Maximum supply current of 9 µA at 9 V supply

– Piezo horn driver

– Interconnect feature: alarm condition on one interconnected device causes alarm indication on all other interconnected devices

– Low battery alert signal

For additional smoke detector products, please see www.allegromicro.com/ic/safety.asp

Brushless DC Motor Drivers

P/N	Output Voltage Range	Output Current	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Features
A3904	24 V to 5.5 V	127 mA	One linear sink driver	Linear MOSFET	I^2C	Internally generated	Voice Coil	DFN-6, WLCSP-6 Bare die	8 bit D to A, 1 x 0.7 mm WLCSP Internal sense resistor
A4930	8 V to 36 V	1 to 10 A Typical	Single full bridge	MOSFET gate driver	Parallel	Internally generated	Single phase BLDC fan	5 x 5 mm DFN-28	Dead time protection, FG, RD outputs Lock protection, Soft start, Hall element input, PWM current limit
A4931	8 V to 38 V	1 to 10 A Typical	Three half bridges	MOSFET gate driver	Parallel	Internally generated	Three-phase brushless	5 x 5 mm DFN-28	PWM current limit, FG out, Hall element input, Locked rotor protection, UVLO, TSD
A3932	12 V to 50 V	2 to 25 A Typical	Three half bridge gate drivers	MOSFET gate driver	Parallel	Internally generated	Three-phase brushless	TSSOP-38	SR, Tach, Fault output, Power MOSFET protection, Brake, PWM
A3936	9 V to 50 V	3.0 A	Three half bridges	DMOS	Parallel	3.0 V to 5.5 V	Three-phase brushless	PLCC-44	Hall commutation logic, Sleep, SR, MD, Brake, Tach, PWM
A3938	12 V to 50 V	2 to 25 A Typical	Three half bridge gate drivers	MOSFET gate driver	Parallel	Internally generated	Three-phase brushless	TSSOP-38	SR, Fault output, Power MOSFET protection, Power loss brake, PWM
A8904	4 V to 14 V	1.2 A	Three half bridges	DMOS	Serial	4.5 V to 5.5 V	Three-phase brushless	SOIC-24, eTSSOP-28	Sensorless commutation, FLL Speed control, Linear current control

Note: SR = Synchronous rectification; Tach = Tachometer output; FLL = Frequency locked loop; OCP = Over current protection; DAC = Digital to analog converter; MD = Mixed decay; SPI = Serial peripheral interface; EMI = Electromagnetic interference; Sleep = Low power mode

DC Brush and Bipolar Stepper Motor Drivers

P/N	Output Voltage Range	Output Current Range	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Features
A3949	8 V to 36 V	2.8 A	Single full	DMOS	Parallel	Internally generated	DC brush	SOIC-16, e-TSSOP-16	Sleep, Internally generated logic supply
A3950	8 V to 36 V	2.8 A	Single full	DMOS	Parallel	Internally generated	DC brush	e-TSSOP-16, QFN-16	OCP, Fault output, Sleep, Internally generated logic supply
A3953	Vcc to 50 V	1.3 A	Single full	Bipolar	Parallel	3.0 V to 5.5 V	DC brush	DIP-16, SOIC-16	Sleep, Fast/slow decay, Brake, Satlington® sink outputs, PWM
A3955	Vcc to 50 V	1.5 A	Single full	Bipolar	Parallel	4.5 V to 5.5 V	MicroStepper (up to 8 steps/full step)	DIP-16, SOIC-16	3-Bit DAC, MD, Satlington® sink outputs, PWM
A3959	9.5 V to 50 V	3.0 A	Single full	DMOS	Parallel	4.5 V to 5.5 V	DC brush	DIP-24, SOIC-24, eTSSOP-28	Slow/fast/mixed decay, SR, Sleep, Brake, PWM
A3964	5 V to 30 V	800 mA	Dual full	Bipolar	Parallel	4.75 V to 5.25 V	Stepper	DIP-24, SOIC-24	2.5 V reference, PWM
A3966	Vcc to 30 V	650 mA	Dual full	Bipolar	Parallel	4.75 V to 5.5 V	Stepper	SOIC-16	Full, Half, Satlington® sink outputs, PWM

DC Brush and Bipolar Stepper Motor Drivers *(continued)*

P/N	Output Voltage Range	Output Current Range	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Features
A3967	4.75 V to 30 V	750 mA	Dual full	Bipolar	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 8 steps/full step)	SOIC-24	Two-wire (Step/DIR) interface, MD, Sleep, Satlington® sink outputs, PWM
A3968	Vcc to 30 V	650 mA	Dual full	Bipolar	Parallel	4.75 V to 5.5 V	DC brush	SOIC-16	Brake function, Satlington® sink outputs, PWM
A3969	5 V to 30 V	650 mA	Dual full	Bipolar	Parallel	3.0 V to 3.6 V	Stepper	QFN-28	Full, Half, Satlington® sink outputs, PWM
A3972	15 V to 50 V	1.5 A	Dual full	DMOS	Serial	4.5 V to 5.5 V	MicroStepper (up to 32 steps/full step)	DIP-24	6-Bit DAC, SPI, SR, MD, Sleep, PWM
A3973	15 V to 35 V	1.0 A	Dual full	DMOS	Serial	4.5 V to 5.5 V	MicroStepper (up to 32 steps/full step)	DIP-24, SOIC-24	6-Bit DAC, MD, SPI, SR, Sleep, PWM
A3974	15 V to 50 V	1.5 A	Dual full	DMOS	Serial	4.5 V to 5.5 V	DC Brush	PLCC-44	MD, Sleep, SPI, SR, Brake function
A3977	8 V to 35 V	2.5 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 8 steps/full step)	PLCC-44, e-TSSOP-28	Two-wire (Step/DIR) interface, MD, Sleep, SR, PWM
A3979	8 V to 35 V	2.5 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 16 steps/full step)	e-TSSOP-28	Two-wire (Step/DIR) interface, MD, Sleep, SR, PWM

DC Brush and Bipolar Stepper Motor Drivers *(continued)*

P/N	Output Voltage Range	Output Current Range	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Features
A3982	8 V to 35 V	1.5 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	Stepper full/half step	SOIC-24	Two-wire (Step/DIR) interface, MD, Sleep, SR, PWM, 2.0 A peak
A3983	8 V to 35 V	1.5 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 8 steps/full step)	e-TSSOP-24	Two-wire (Step/DIR) interface, MD, Sleep, SR, PWM, 2.5 A peak
A3984	8 V to 35 V	1.5 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 16 steps/full step)	e-TSSOP-24	Two-wire (Step/DIR) interface, MD, Sleep, SR, PWM, 2.0 A peak
A3985	12 V to 50 V	2 A to 10 A Typical	External Dual full	MOSFET gate driver	Serial	3.0 V to 5.5 V	MicroStepper (up to 32 steps/full step)	TSSOP-38	Serial interface, Sleep, 6 bit linear DACs, PWM, SR, MD
A3986	12 V to 50 V	2 A to 10 A Typical	External Dual full	MOSFET gate driver	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 16 steps/full step)	TSSOP-38	Two-wire (Step/Dir) interface, Sleep, DAC, PWM, SR, MD
A3987	8 V to 50 V	1.5 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 16 steps/full step)	e-TSSOP-24	Two-wire (Step/Dir) interface, MD, Sleep, SR, PWM, OCP
A3988	8 V to 36 V	1.2 A	Quad full	DMOS	Parallel	3.0 V to 5.5 V	MicroStepper (up to 4 steps/full step)	QFN-36 eLQFP-48	2-bit DAC, MD, PWM, Drop-in (not pin to pin) for two L6219 (A2916)

DC Brush and Bipolar Stepper Motor Drivers *(continued)*

P/N	Output Voltage Range	Output Current Range	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Features
A3989	8 V to 36 V	1.2 A (step) 2.4 A (DC)	Three full	DMOS	Parallel	3.0 V to 5.5 V	MicroStepper and DC Brush (up to 4 steps/full step)	QFN-36	2-bit DAC, MD, PWM, Drop-in (not pin to pin) for L6219 (A2916), Brake, fast/slow decay
A3992	15 V to 50 V	1.5 A	Dual full	DMOS	Serial	4.5 V to 5.5 V	MicroStepper (up to 32 steps/full step)	DIP-24, eTSSOP-24	6-bit DAC, MD, SPI, SR, Sleep, PWM, OCP
UDN2916 A6219	10 V to 45 V	750 mA	Dual full	Bipolar	Parallel	4.75 V to 5.25 V	MicroStepper (up to 4 steps/full step)	DIP-34, SOIC-24, PLCC-44	Internal PWM current control, 2-Bit DAC
A3901	2.5 V to 5.5 V	400 mA	Dual full	MOSFET	Parallel	Internally generated	Stepper or DC brush	DFN-10	Full, Half, Brake, Sleep, 3.0 x 3.0 x 0.75 mm DFN
A3903	2.5 V to 5.5 V	500 mA	Single full	MOSFET	Parallel	Internally generated	DC brush	DFN-8	Forward, Reverse, Brake, Standby, Linear voltage control 2.0 x 2.0 x 0.55 mm DFN
A3906	2.5 V to 9 V	1.0 A	Dual full	MOSFET	Parallel	Internally generated	Stepper or DC brush	QFN-20	Full, Half, Brake, Sleep, UVLO, Low RDS on, Internal PWM current control, Peak current flag outputs, SR
A3904	2.4 V to 5.5 V	127 mA	Voice coil driver	MOSFET	I^2C	1.8 V to 5.5 V	Voice coil	DFN-6, Wafer, WLCSP	8-bit DAC, 500 uA resolution, Small package footprint, Sleep
A3995	8 V to 36 V	2.4 A	Dual full	DMOS	Parallel	3.0 V to 5.5 V	DC brush	QFN-36	Brake, Fast/slow decay, SR, PWM
A4983	8 V to 35 V	2.0 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 16 steps/full step)	QFN-28	Two-wire (Step/DIR) interface, MD, Sleep, SR, PWM, 2.0 A peak

DC Brush and Bipolar Stepper Motor Drivers – Automotive Grade

P/N	Output Voltage Range	Output Current	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Features
A3941K	7 V to 50 V	N/A	Single full	MOSFET gate driver	Parallel	Internally generated	DC Brush	e-TSSOP-28	Automotive temperatures, automotive diagnostics, small outline thermally enhanced package
A3946K	7 V to 60 V	N/A	Half bridge	MOSFET gate driver	Parallel	Internally generated	DC Brush	SOIC-16 e-TSSOP-16	Automotive temp, Charge pump for low-battery operation, Fault output, 60 V operation
A3980K	7 V to 50 V	1.0 A	Dual full	DMOS	Parallel (Translator)	3.0 V to 5.5 V	MicroStepper (up to 16 steps/full step)	e-TSSOP-28	Protected output drivers, Two-wire (Step/DIR) interface, Fault reporting
UDQ2916	10 V to 45 V	750 mA	Dual full	Bipolar	Parallel	4.75 V to 5.25 V	Stepper	DIP-24, SOIC-24 PLCC-44	Internal PWM current control, 2-bit DAC

Three-Phase Brushless DC Motor Drivers – Automotive Grade

P/N	Output Voltage Range	Output Current	Number of Bridges	Output	Interface	Logic Supply Voltage Range	Motor Type	Packages	Key Features
A3930/31K	7 V to 50 V	N/A	Three half bridges	MOSFET gate driver	Hall-based state machine	Internally generated	Three-phase brushless	eLQFP-48	Hall commutation logic, Sleep, SR, MD, Brake, Tach, PWM, Fault output, Prepositioning state (A3931 only)
A3935K	7 V to 40 V	N/A	Three half bridges	MOSFET gate driver	Parallel	4.75 V to 5.25 V	Three-phase brushless	QSOP-36 eLQFP-48	Automotive temp, Boost converter for low-battery operation, Fault output
A4935K	7 V to 50 V	N/A	Three half bridges	MOSFET gate driver	Parallel	3.0 V to 5.5 V	Three-phase brushless	eLQFP-48	Automotive temperatures, Automotive diagnostics, Integrated charge pump

Display Drivers and Other Power ICs — Automotive Grade

P/N	Maximum Output Voltage (V)	Description	Maximum Output Current (mA)	Number of Outputs	Sink/Source	Latched Output	Serial Input	Packages
A6260K	40	Constant current LED driver	350 mA	1	Source – constant current	No	No	SOIC-8-exposed pad
A6810K	60	VF Display driver	25	10	Source	Yes	Yes	DIP-18, SOIC-20, PLCC-20
A6812K	60	VF Display driver	25	20	Source	Yes	Yes	SOIC-28, PLCC-28
A6818K	60	VF Display driver	25	32	Source	Yes	Yes	PLCC-44
A6850K	40	Two-channel sensor interface IC	25	2	Source	No	No	SOIC-8
A2550K	60	Relay driver / Vreg	250	3x Relay 1 x 5 V Vreg	Sink	No	No	eTSSOP-16
A2557K	60	Relay/solenoid driver/LED	300	4	Sink	No	No	DIP-16, SOIC-16, PLCC-28
A2559K	60	Relay/solenoid driver/LED	600	4	Sink	No	No	DIP-16, PLCC-28, SOIC-16
A3942K	60	Four Channel High-side MOSFET Pre-Driver IC	-	4	-	-	Yes	TSSOP-38

Power Management ICs — Automotive Grade

P/N	Description	Input Voltage	Number of Outputs	Output Ratings	Package	Features
A4401K	Flyback converter/ VF power supply IC	7 V to 40 V	Single	Single pre-driver output for external pass element	SOIC-8	Adaptive quasi-resonant flyback converter for low EMI
A8450K	Multi-output regulator	6 V to 45 V	Quad	1.2 V to 3.3 V @ 200 mA 3.3 V @ 200 mA 5 V @ 200 mA 5 V @ 200 mA	SOIC-24	Internal buck regulator with two linear regulators (5 V tracking) and two linear controllers (3.3 V and 1.8 V to 3.3 V adjustable), 135°C operation, Fault flag

Power Management ICs

General Purpose						
P/N	**Topology**	**Input Voltage**	**Output**	**Output Current**	**Packages**	**Features**
A4490	Triple Output Buck	4.5 V to 34 V	Three adjustable outputs rated at 0.8 V to 24 V	Each output rated at 2.2 A peak switch current	4 x 4 mm QFN-20	Three independent adjustable regulators, Multi phase switching, 550 KHz fixed frequency, Power on reset flag with programmable delay, -40°C to 85°C operation
A8498	Buck	8 V to 50 V	0.8 V to 24 V	5 A peak switch current	eSOIC-8	50 V maximum input voltage, Adjustable output voltage, High efficiency, Adjustable fixed off-time buck converter
A8499	Buck	8 V to 50 V	1.2 V to 24 V	3 A peak switch current	eSOIC-8	50 V maximum input voltage, Adjustable output voltage, High efficiency, Adjustable fixed off-time buck converter
A8697	Buck	8 V to 25 V	0.8 V to 20 V	7 A peak switch current	eSOIC-8	25 V maximum input voltage, Adjustable output voltage, High efficiency, Adjustable fixed off-time buck converter
A8698	Buck	8 V to 25 V	0.8 V to 20 V	5 A peak switch current	eSOIC-8	25 V maximum input voltage, Adjustable output voltage, High efficiency, Adjustable fixed off-time buck converter

Display Power and Backlight						
P/N	**Topology**	**Input Voltage**	**Output**	**Output Current**	**Packages**	**Features**
A8430	Boost	2.5 V to 10 V	36 V max	300 mA peak switch current	3x3 mm TDFN 5L	WLED driver for LCD backlight – 1.2 MHz boost converter with integrated 36 V switch in 0.75 mm high 3x3 mm package with TSOT-23-5 footprint
A8431	Boost	2.5 V to 10 V	32 V max	300 mA peak switch current	2x3 mm TDFN 6L	Same as A8430, plus 35 V overvoltage protection and 2x3 mm package
A8434	Charge Pump	2.7 V to 5.5 V	1-6 channels, 6 V max	Iout max = 30 mA per channel	3x3 mm TQFN 16L	1 MHz six-channel charge pump, Adaptive control scheme (1x/1.5x/2x), 30 mA per channel, 0.5% channel current matching, Multiple dimming schemes, Soft start, OVP

Display Power and Backlight (continued)

P/N	Topology	Input Voltage	Output	Output Current	Packages	Features
A8435	Charge Pump	2.7 V to 5.5 V	1-4 channels, 6 V max	Iout max = 30 mA per channel	3x3 mm TQFN 16L	1 MHz four-channel charge pump, Adaptive control scheme (1x/1.5x), 30 mA per channel, 0.5% channel current matching, Multiple dimming schemes, Soft start, OVP
A8483	Boost	2.5 V to 10 V	36 V max	350 mA peak switch current	3x3 mm TDFN 5L	1.2 MHz boost converter for OLED/LCD/VARACTOR/HDTV power, Extended (0.9 V to 18 V) input voltage with bias supply, 0.75 mm high 3x3 mm package with TSOT-23-5 footprint
A8500	Boost	4.2 V to 5.5 V (5 V to 25 Vbat)	47 V max	2 A peak switch current	4x4 mm TQFN 26L	Drives multiple LED strings e.g., 16-96 LEDs at 25 mA, 200 KHz to 2 MHz boost, 50 V internal FET, Flexible dimming methods, Adjustable switching frequency
A8501	Boost	8 V to 21 V	19.5 V max	3.6 A peak switch current	eTSSOP-28L	Single Vin supply (e.g., 12 V), Drives multiple LED strings e.g., 9-36 LEDs at 100 mA, 600 KHz to 2.2 MHz (adjustable) boost, 40 V internal FET, Flexible dimming methods, Multiple protection schemes
A8503	Boost	4.3 V to 5.5 V (5 V to 22 Vbat)	44 V max	2.2 A peak switch current	4x4 mm TQFN 26L	Drives multiple LED strings e.g., 10-60 LEDs at 25 mA, 600 kHz to 2 MHz (adjustable) boost, 55 V internal FET, Flexible dimming methods, Multiple protection schemes
A8504	Boost	4.2 V to 5.5 V (5 V to 25 Vbat)	47 V max	2 A peak switch current	4x4 mm TQFN 26L	Drives multiple LED strings e.g., 16-88 LEDs at 40 mA, 200 KHz to 2 MHz boost, 50 V internal FET, Flexible dimming methods, Adjustable switching frequency
A8530	Charge Pump	2.7 V to 5.5 V	1-6 channels, for WLED Backlight and/or Flash/Torch	Total Iout max = 320 mA DC	3x3 mm TQFN 16L	1 MHz six-channel charge pump, Adaptive control scheme (1x/1.5x/2x), 30 mA per 1-4 channel, 100 mA per 5-6 channel, 0.5% channel current matching, Multiple dimming schemes, Soft start, OVP

XENON Photoflash Cap Chargers with IGBT Driver						
P/N	**Topology**	**Input Voltage**	**Output**	**Output Current**	**Packages**	**Features**
A8424	Flyback	3.0 V to 5.5 V (1.5 V to 11.0 Vbat)	Adjustable	0.5 to 1.5 A peak switch current	3x3 mm TQFN 16L	Optimized for digital still cameras or camcorders
A8425	Flyback	3.0 V to 5.5 V (1.5 V to 11.0 Vbat)	Adjustable	1.0 to 3.2 A peak switch current	3x3 mm TQFN 16L	Optimized for SLR cameras
A8426	Flyback	3.0 V to 5.5 V (1.5 V to 11.0 Vbat)	Adjustable	1.0 to 3.2 A peak switch current	3x3 mm TQFN 16L	Optimized for SLR cameras
A8427	Flyback	2.3 V to 5.5 V (1.5 V to 6.0 Vbat)	Adjustable	0.8 to 2.4 A peak switch current	3x3 mm TQFN 16L	Optimized for SLR cameras
A8436	Flyback	3 V to 5.5 V (or 1.5 V min if Vcc supplied)	Adjustable	Three-level peak switch current: 1.0 A, 1.2 A, 1.4 A	3x3 mm TDFN 10L	Xenon flash capacitor charger with integrated 40 V switch, IGBT driver, and low-leakage feedback
A8437	Flyback	Vin = 2.3 V to 5.5 V	Adjustable	0.3 to 1.2 A peak switch current	3x3 mm TQFN 16L or 1.2x1.6 mm WLCSP	Optimized for mobile phones
A8438	Flyback	3 V to 5.5 V (or 1.5 V min if Vcc supplied)	Adjustable	Three-level peak switch current: 1.6 A, 1.8 A, 2.0 A	3x3 mm TDFN 10L	Same as A8436 but higher output current
A8439	Flyback	3 V to 5.5 V (or 1.5 V min if Vcc supplied)	Adjustable	Eight-level peak switch current: 0.27 A to 1.5 A	3x3 mm TDFN 10L	Same as A8436 but feedback is continuous, Programmable output current, and Auto refresh function
A8837	Flyback	3 V to 5.5 V (or 1.5 V min if Vcc supplied)	Adjustable	Eight-level peak switch current: 0.7 A to 2 A	3x3 mm TDFN 10L	Xenon flash capacitor charger with integrated 40 V switch, IGBT driver, Programmable output current, and Low-leakage feedback

LNB Regulators for Satellite STB Power

P/N	Topology	Input Voltage	Output	Output Current	Packages	Features
A8281	Buck/ Linear	Vo+4.5 V to 48 V	Single, adjustable	Iout max = 750 mA	SOIC-16	Buck/LDO, Integrated FET, 22 kHz tone (DiSEqC™ compatible), Current limit, Fault flag
A8282	Buck/ Linear	Vo+4.5 V to 48 V	Single, adjustable	Iout max = 750 mA	SOIC-24	Same as A8281, plus selectable Vout 12 V, 13 V, 14 V or 18 V, 19 V, 20 V, 21 V
A8285	Boost/ Linear	8 V to 16 V	Single, adjustable	Iout max = 500 mA	SOIC-16	Boost/LDO, Integrated FET, 16 selectable output voltages from 12.7 V to 20.4 V, I²C™ interface, 22 kHz tone (DiSEqC™ compatible), Current limit, Fault flag
A8287	Boost/ Linear	8 V to 16 V	Single, adjustable	Iout max = 500 mA	SOIC-24	Same as A8285, plus 22 kHz tone detection
A8290	Boost/ Linear	8 V to 16 V	Single, adjustable	Iout 900 mA limited	5x5 mm QFN 28L	Same as A8287, plus higher current limit for DIRECTV™ applications, 48 mSec ODT timer, additional diagnostics, Integrated DiSEqC™ Bypass FET
A8291	Boost/ Linear	8 V to 16 V	Single, adjustable	Iout 600 mA limited	5x5 mm QFN 28L	Same as A8290 but lower output current limit for non-DIRECTV™ applications
A8286	Boost/ Linear	8 V to 16 V	Dual, adjustable	Iout 900 mA limited per channel	5x5 mm QFN 28L	Same as A8290 (less Bypass FET), with dual channel outputs and A8290 single-footprint option
A8292	Boost/ Linear	8 V to 16 V	Dual, adjustable	Iout 600 mA limited per channel	5x5 mm QFN 28L	Same as A8286 but lower output current limit for non-DIRECTV™ applications
A8293	Boost/ Linear	9 V to 16 V	Single, adjustable	Iout 700 mA limited	4x4 mm QFN 20L	Same features as A8290, but in smaller 4x4 pkg and for DiSEqC 1.x apps (no tone detect, no bypass FET, no need for DiSEqC filter)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