PRODUCTS SELECTION GUIDE

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The above manual is for reference only and the final interpretation shall be subject to Shanghai Chipanalog Microelectronics

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Shanghai Chipanalog Microelectronics Co., Ltd.

Chipanalog is a high-tech company specialized in high-end analog and mixed-singal integrated products R&D and sales, offering isolation, interface, driver and power management as well as high performance analog chips for industrial control, power and renewable energy and automotive electronics sectors.

Established in 2016 and with years of fast development, Chipanalog has become a well-known supplier who has partnered with over 2,000 customers and be professional in in high-end analog solution fields, such as isolation and interface. Abided by our value of "Ambition, Innovation, Excellence and Honesty", Chipanalog strives to provide chips with superior quality for the customers all over the world by sticking to our initiatives and forging ahead.





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SAFETY REGULATORY APPROVALS

ISO26262 / VDE / UL / AEC-Q100 / C & S IOPT Certifications



PRODUCTS DESCRIPTION



Isolation

Our broad portfolio of isolation products adopts Chipanalog's capacitive isolation technology based on silicon oxide (SiO2) insulation barrier that provides galvanic isolation between two power domains. We offer standard digital isolators with power, standard digital isolators, low-power digital isolators, isolated I2C, isolated CAN transceivers, isolated RS-422/RS-485 transceivers, isolated RS-422/RS-485 transceivers with built-in low EMI isolated power supply, isolated transceivers with emulated opitcal digital inputs, fully-integrated isolated power supply/ error isolation amplifiers and fully-differential isolation amplifiers. This series is featured as superior isolation, high stability and reliability which has been used in great variety of industrial applications by over 2,000 customers.

Interface

Chipanalog's interface product family includes CAN/LIN/SBC transceivers, RS-485/422/232 transceivers, HOMEBUS etc.. Featured as high-voltage fault protection, high-ESD protection, extended common-mode voltage range and strong resistance for interference, these devices are applicable to industrial, automotive, communications and home appliances application scenarios that have harsh application environment and high requirement.



Driver & Power

Chipanalog offers driver and power supply product lines include motor driver andgate driver, etc.. for a broad application in industrial control and automotive electronics sectors.



ISOLATION

Digital Isolation

CA-IS37XX Basic Digital Isolator

CA-IS38XX Reinforced Digital Isolator

CS817xXX Ultra-low Power Digital

Isolation

CA-IS36XX Digital Isolator with Isolated Power Supply CA-IS308X, CA-IS208X Lsolated RS-485/422

Isolation Interface

CA-IS305X, CA-IS205X

CA-IS302X

Lsolated I2C

Lsolated CAN

CA-IS306X

CA-IS309X, CA-IS209X Lsolated RS-485/422 with Lsolated Power Supply

solated Power Supply	Isolation /
A-IS3105 J.SW Fully Integrated Isolated Power Supply	CA-IS1200, Current-ser Amplifiers
CA-IS3110	CA-IS130X

Others

CA-IF4023

Homebus

CA-IF4288, CA-IF4289

AISG

Power Supply

Isolated Error Amplifier

CA-IS310X

stion Amplifier/ADC

tion Optocoupler Compatible with Single Channel Isolated Drive

Isolated Driver

CA-IS3221

CA-IS130X CA-IS3222 solated ADC Modulator Isolated Drive with Dual Channel

PRODUCT MATRIX

RS-485/422/232

12V CS485XX, 30V CA-IF48XX,

CA-IF3232E, CA-IF3223E, CA-IF3221E

70V CA-IF49XX RS - 485/422 Transceiver

The RS - 232 Transceiver

INTERFACE

CA-IF1042X, CA-IF1043X, CA-IF1044X, CA-IF1145X, CA-IF1462X/1463X CAN with Wake Up Function

CA-IF1021, CA-IF2021, CA-IF1027,

CAN/LIN/SBC

Standard CAN/CAN FD

CA-IF1051X

CA-IF4420X

CA-IF2027 LIN Transceiver

CA-IF1028 LIN SBC

Polarity control CAN Transceiver

DRIVER & POWER

Motor Driver / Gate Driver / LED Driver Power Management IC

HPA

High Precision Voltage Reference High Precision ADC











Chipanalog CA-IS36XX Selection Table-High Performance Digital Isolators with Integrated Isolating Power Supply

Part Number	Integrate isolated power supply(Y/N)	Nunber of Channels	Number of reversed channels	Insulation Rating (V _{RM} S	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (1Mbps,mA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CA-IS3621LW	Y	2	1	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3640HW	Y	4	0	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3641HW	Y	4	1	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3642HW	Y	4	2	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3643HW	Y	4	3	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3644HW	Y	4	4	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3640LW	Y	4	0	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3641LW	Y	4	1	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3642LW	Y	4	2	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3643LW	Y	4	3	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3644LW	Y	4	4	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3640HVV	V Y	4	0	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3641HVV	V Y	4	1	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3642HVV	V Y	4	2	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3643HVV	V Y	4	3	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3644HVV	V Y	4	4	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3640LVW	Y Y	4	0	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3641LVW	Y Y	4	1	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3642LVW	I Y	4	2	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3643LVW	Y Y	4	3	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3644LVW	Y	4	4	5000	150	10	6000	DC-150M	3-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)

Chipanalog CA-IS37XX Selection Table-Standard Digital Isolators

Part Number	Nunber of Channels	Number of reversed channels	Insulation Rating (V _{RM} S	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (1Mbps,mA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CA-IS3720HS	2	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3721HS	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3722HS	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3720LS	2	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3721LS	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3722LS	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3720HG	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8-WB(G)
CA-IS3721HG	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8-WB(G)
CA-IS3722HG	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8-WB(G)
CA-IS3720LG	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8-WB(G)
CA-IS3721LG	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8-WB(G)
CA-IS3722LG	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8-WB(G)
CA-IS3720HW	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3721HW	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3722HW	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3720LW	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3721LW	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3722LW	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)

INDUSTRIAL

Isolation

Isolation

Chipanalog CA-IS37XX Selection Table-Standard Digital Isolators

Part Number	Nunber of Channels	Number of reversed channels	Insulation Rating (V _{RMS}	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (1Mbps,mA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CA-IS3730HN	3	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3731HN	3	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3730LN	3	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3731LN	3	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3730HW	3	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3731HW	3	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3730LW	3	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3731LW	3	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3731HB	3	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3731LB	3	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
Part Number	Nunber of Channels	Number of reversed channels	Insulation Rating (VRMS	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (1Mbps,mA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CA-IS3740HN	4	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3741HN	4	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3742HN	4	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3740LN	4	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3741LN	4	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3742LN	4	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3740HW	4	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3741HW	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3742HW	4	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3740LW	4	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3741LW	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3742LW	4	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3740HB	4	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3741HB	4	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3742HB	4	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3740LB	4	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
CA-IS3741LB	4	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
CA-IS3742LB	4	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
	Maria	Number of	Insulation	0.117	Course Darks	500 0 - Kr	Data Data	Operating	Operating current	0.11	D. C. W.	Temperature	
Part Number	Channels	reversed channels	Rating (V _{RM} S	(kV/µs)	(kVpk)	(Two sides,V)	(bps)	Voltage Range (V)	per channel (1Mbps,mA,typ)	mode	output	Range (°C)	Package
CA-IS3760HN	6	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3761HN	6	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3762HN	6	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3763HN	6	3	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-NB(N)
CA-IS3760LN	6	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3761LN	6	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-I\$3762LN	6	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-I\$3763LN	6	3	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3760HW	6	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3761HW	6	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3762HW	6	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3763HW	6	3	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3760LW	6	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3761LW	6	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3762LW	6	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3763LW	6	3	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3760HB	6	0	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3761HB	6	1	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3762HB	6	2	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3763HB	6	3	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SSOP16(B)
CA-IS3760LB	6	0	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
CA-IS3761LB	6	1	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
CA-IS3762LB	6	2	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)
CA-IS3763LB	6	3	3750	50	5	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SSOP16(B)

Isolation

Chipanalog CS817X Selection Table-Low Power Digital Isolators

Part Number	Nunber of Channels	Number of reversed channels	Insulation Rating (V _{RMS}	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (200Kbps,uA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CS817x22HS	2	0	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)
C\$817x22L\$	2	1	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)
CS817x20HS	1	1	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)
CS817x20LS	2	1	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)

Chipanalog CA-IS38XX selection table-Reinforced Digital Isolators

Part Number	Nunber of Channels	Number of reversed channels	Insulation Rating (V _{RM} S	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (200Kbps,uA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CA-IS3831HW	3	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3831LW	3	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3841HW	4	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3841LW	4	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3862HW	6	2	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3831LWW	3	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WWB(WW)
CA-IS3840HWW	4	0	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	High	-40~125	SOIC16-WWB(WW)
CA-IS3841HWW	4	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WWB(WW)
CA-IS3841LWW	4	1	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	High	-40~125	SOIC16-WWB(WW)
CA-IS3842HWW	4	2	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WWB(WW)
CA-IS3842LWW	4	2	5700	150	8	6000	DC-150M	2.25-5.5	1.5	Push-pull	High	-40~125	SOIC16-WWB(WW)

CA-IS36XX

Digital Isolators with Isolated Power Supplies

The CA-IS36XX family integrated signal and power isolation devices simplify system design and reduce board area. These devices are high-performance, dual-channel and four-channel, unidirectional reinforced digital isolators with up to 5kV_{RMS} isolation rating and ultra-fast data rate (up to 150Mbps). The integrated isolated DC-DC converter provides up to 500mW of isolated power and different output voltage configurations. The CA-IS36XX family of devices offers high electromagnetic immunity and low emissions while isolating different ground domains and block high-voltage/high-current transients from sensitive or human interface circuitry. The CA-IS3621/3622 devices come with individual enable control pin for the A side of the isolator which can be used to put the outputs in high impedance for multi-master driving applications to reduce power consumption.

The CA-IS36XX family devices are specified over the -40°C to +125°C operating temperature range and are available in 16-pin SOIC wide body package.

Key Features

Integrated High-efficiency DC-DC Converter with on-chip Transformer

- ◆ Regulated output options: 3.3 V or 5.0 V
- Soft-start to limit inrush current and overshoot
- Overload and short-circuit protection
- Thermal shutdown
- ◆ Low emissions

Robust Galvanic Isolation of Digital Signals

- ♦ High lifetime: > 40 years
- ♦ Withstands 5kVRMS for 60s
- ◆ ±150 kV/µs typical CMTI
- Schmitt trigger inputs

Interfaces Directly with Most Micros and FPGAs

- ◆ Data rate: DC to 150Mbps
- ♦ 3V to 5.5V single supply operation
- Default output High (CA-IS362xH, CA-IS364xH) and Low (CA-IS362xL, CA-IS364xL) Options

Simplified Schematic



CA-IS3641 DVDD CS SCLK V02 ADC MCU SD VO3 SD VI4 DGND SEL GNDB

Best in Class Propagation Delay and Skew

- ♦ 10ns typical propagation delay
- ◆ 1ns pulse width distortion
- ◆ 2ns propagation delay skew (chip -to-chip) No Start-Up Initialization Required Enable Control Input (CA-IS3621/CA-IS3622) Wide Operating Temperature Range: -40°C to 125°C Wide-body SOIC16-WB(W) Package

Applications

Industrial automation systems Motor control Medical equipment **Test and Measurement**

CA-IS37XX

Standard Digital Isolators

The CA-IS37XX devices are high-performance, low-power multi-channel, unidirectional digital isolators with up to 3.75kV_{RMS}(narrow-body package) or 5kV_{RMS}(wide-body package) isolation rating and ultra-fast data rate (up to 150Mbps). These devices offer high electromagnetic immunity and low emissions while isolating different around domains and block high-voltage/high-current transients from sensitive or human interface circuitry. Each isolation channel has a logic input and output buffer separated by capacitive silicon dioxide (SiO₂) insulation barrier, the integrated Schmitt trigger on each input provide excellent noise immunity.

The CA-IS37XX family devices are specified over the -40°C to +125°C operating temperature range and are available in 8-pin SOIC, 16-pin SOIC, 16-pin SSOP narrow body packages and 8-pin SOIC, 16-pin SOIC wide body packages.

Key Features

Robust Galvanic Isolation of Digital Signals

♦ High lifetime: >40 years

♦ Up to 3750 VRMS isolation rating (narrow body packages) and up to 5000 V_{RMS} isolation rating (wide body packages)

- ◆ ±150 kV/µs typical CMTI
- ♦ Schmitt trigger inputs

Interfaces Directly with Most Micros and FPGAs

- ◆ Data rate: DC to 150Mbps
- ◆ Accepts 2.5V to 5.5V supplies
- Default output High (CA-IS37xxH) and Low (CA-IS37xxL) Options

Low Power Consumption

- ◆ 1.5mA per channel at 1Mbps with VDD = 5.0V
- 6.6mA per channel at 100Mbps with VDD = 5.0V

Best in Class Propagation Delay and Skew

- ◆ 8ns typical propagation delay
- Ins pulse width distortion
- 2ns propagation delay skew (chip -to-chip)
- ◆ 5ns minimum pulse width

No Start-Up Initialization Required

Simplified Schematic





Package Options Narrow-body SOIC8(S), SOIC16-NB(N), SSOP16(B) packages ◆ Wide-body SOIC8-WB(G)、SOIC16-WB(W) packages Wide Operating Temperature Range: -40°C to 125°C Safety Regulatory Approvals ◆ VDE 0884-11 reinforced isolation ◆ UL certification according to UL1577 ♦ IEC 62368-1, IEC 61010-1, GB 4943.1-2011 and

GB 8898-2011 certifications

Applications

Industrial Automation Motor Control **Medical Systems Isolated Power Supplies Solar Inverters**



CS817xXX

Ultra Low-Power Digital Isolators

The CS817xXX family of ultra-low-power digital isolators using Chipanalog's "Pulse-Coding" capacitive isolation technology, offers as low as 70µA per channel low quiescent current. These isolated CMOS digital I/Os feature up to 3kV_{RMS} isolation rating and ±150 kV/µs typical CMTI, provide high electromagnetic immunity and low EMI. All device versions have Schmitt trigger inputs for high noise immunity and each isolation channel has a logic input and output buffer separated by capacitive silicon dioxide (SiO₂) insulation barrier.

The CS817xXX family of devices is specified over the -40°C to +125°C operating temperature range and is available in 8-pin SOIC narrow body package.

Applications

Home appliances

Medical electronics

Isolated ADC. DAC

Motor control

Power inverters

Li+ battery pack protection

Industrial automation systems

Isolated switch mode supplies

Key Features

Ultra Low Power

- ♦ 99µA per channel at DC, 3.3V
- ♦ 117µA per channel at 10kbps, 3.3V
- ◆ 221µA per channel at 200kbps, 3.3V

Data Rate is up to 200kbps 2.5V to 5.5V Wide Operating Supply Voltage Range

Robust Galvanic Isolation of Digital Signals

- ♦ High lifetime: >40 years
- ♦ Up to 3kVRMS isolation rating
- ◆ ±150 kV/µs typical CMTI
- Schmitt trigger inputs for high noise immunity
- ♦ High electromagnetic immunity

No Start-up Initialization Required

Default Output High and Low Options

RoHS-Compliant Package:

\$OIC8(\$) narrow body

Wide Operating Temperature Range: -40°C to 125°C

Simplified Schematic





CA-IS38XX

Ultra Low-Power Digital Isolators

The CA-IS383x devices are high-performance triple-channel digital isolators with precise timing characteristics and low power consumption. The CA-IS383x devices provide high electromagnetic immunity and low emissions, while isolating CMOS digital I/Os. All device versions have Schmitt trigger input for high noise immunity. Each isolation channel consists of a transmitter and a receiver separated by silicon dioxide (SiO2) insulation barrier. The CA-IS3830 device has all three channels in the same direction with output enable on output side (B side) and the CA-IS3831 device has two forward and one reverse-direction channels with output enable on both sides. All devices have fail-safe mode option. If the input power or signal is lost, default output is low for devices with suffix L and high for devices with suffix H.

Key Features

Signal Rate: DC to 150Mbps Wide Operating Supply Voltage: 2.5V to 5.5V Wide Operating Temperature Range: -55°C to 125°C

No Start-Up Initialization Required Default Output High and Low Options High Electromagnetic Immunity High CMTI: ±150kV/µs (Typical) Low Power Consumption (Typical):

- ◆ 1.5mA per Channel at 1Mbps with 5.0V Supply
- ♦ 6.6mA per Channel at 100Mbps with 5.0V Supply

Precise Timing (Typical)

- ♦ 8ns Propagation Delay
- ◆ 1ns Pulse Width Distortion
- ◆ 2ns Propagation Delay Skew
- ◆ 5ns Minimum Pulse Width

Isolation Rating up to 5.7kVrms Isolation Barrier Life: >40 Years

Simplified Schematic



- Tri-state Outputs with ENABLE Schmitt Trigger Inputs RoHS-Compliant Packages SOIC16 Wide Body
- ♦ SOIC16 Extra Wide Body

Applications

Industrial Automation Systems Motor Control Medical Electronics Isolated Switch Mode Supplies Solar Inverters Isolated ADC, DAC



Isolated Interface



Isolation

Chipanalog CA-IS302X Selection Table-Low Power Single/Dual Direction I2C Isolators

Part Number	SCK Mode	Insulation Rating (V _{RM} s	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-I\$3020\$	Dual Direction	3750	150	8	8000	2	3~5.5	-40~125	SOIC8(S)
CA-I\$3021\$	Single Direction	3750	150	8	8000	2	3~5.5	-40~125	SOIC8(S)
CA-IS3020G	Dual Direction	5000	150	10	8000	2	3~5.5	-40~125	SOIC8-WB(G)
CA-IS3021G	Single Direction	5000	150	10	8000	2	3~5.5	-40~125	SOIC8-WB(G)
CA-IS3020W	Dual Direction	5000	150	10	8000	2	3~5.5	-40~125	SOIC16-WB(W)
CA-IS3021W	Single Direction	5000	150	10	8000	2	3~5.5	-40~125	SOIC16-WB(W)

Isolation

Chipanalog CA-IS305X Selection Table-Isolated CAN Transceivers

Part Number	Bus fault protection (V)	Insulation Rating (V _{RM})s	CMTI (kV/µs)	Surge Rating (kVpk)	Bus ESD Rating (V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-I\$3050G	±58	5000	150	10	4000	1	2.5~5.5	-40~125	SOIC8-WB(G)
CA-I\$3052G	±58	5000	150	10	4000	1	2.5~5.5	-40~125	SOIC8-WB(G)
CA-IS3050W	±58	5000	150	10	4000	1	2.5~5.5	-40~125	SOIC16-WB(W)
CA-IS3052W	±58	5000	150	10	4000	1	2.5~5.5	-40~125	SOIC16-WB(W)
CA-I\$3050U	±58	3750	150	8	4000	1	2.5~5.5	-40~125	DUB8 (U)
CA-IS1044S	±58	5000	100	5	4000	5	2.5~5.5	-40~125	SOIC8(S)

Chipanalog CA-IS306X/206X Selection Table-Isolated CAN Transceivers

Part Number	Integrate isolated power supply (Y/N)	Bus fault protection (V)	Insulation Rating (V _{RM})S	CMTI (kV/µs)	Surge Rating (kVpk)	Bus ESD Rating (V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IS3062W	Y	±58	5000	150	10	5000	1	4.5~5.5	-40~125	SOIC16-WB(W)
CA-IS2062W	Y	±58	2500	150	10	5000	1	4.5-5.5	-40~125	SOIC16-WB(W)

Chipanalog CA-IS308X/208X Selection Table- Isolated RS-485/RS-422 Transceivers

Part Number	Operation Mode	Insulation Rating (V _{RM})s	CMīi (kV/µs)	Surge Rating (kVpk)	Bus ESD Rating (V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IS3080WX	Full Duplex	5000	150	10	8000	0.5	2.5~5.5	-40~125	SOIC16-WB(W)
CA-IS3086WX	Full Duplex	5000	150	10	8000	10	2.5~5.5	-40~125	SOIC16-WB(W)
CA-IS3082WX	Half Duplex	5000	150	10	8000	0.5	2.5~5.5	-40~125	SOIC16-WB(W)
CA-IS3082WNX	Half Duplex	5000	150	10	8000	0.5	2.5~5.5	-40~125	SOIC16-WB(W)
CA-IS3088WX	Half Duplex	5000	150	10	8000	10	2.5~5.5	-40~125	SOIC16-WB(W)
CA-IS2082B	Half Duplex	5000	150	4	6000	5	2.5~5.5	-40~125	SSOP16(B)

Chipanalog CA-IS309X/209X Selection Table- Isolated RS-485/RS-422 Transceivers

Part Number	Integrate isolated power supply (Y/N)	Operation Mode	Insulation Rating (V _{RM} S	CMTI (kV/µs)	Surge Rating (kVpk)	Bus ESD Rating (V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IS3092W	Y	Half Duplex	5000	150	10	8000	0.5	3~5.5	-40~125	SOIC16-WB(W)
CA-IS2092W	Y	Half Duplex	2500	150	10	8000	0.5	3~5.5	-40~125	SOIC16-WB(W)

Chipanalog CA-IS398X Selection Table- Isolated RS-485/RS-422 Transceivers

Part Number	Output Interface	Number of high speed channels	Low pass debounce time (ms)	CMTI (kV/µs)	Surge Rating (kVpk)	Bus ESD Rating (V)	Data Rate (Mbps)	Operating Voltage Range (V)	Voltage Rating (V)	Output Mode	Temperature Range (°C)	Package
CA-IS3980S	Parallel	0	0/10/30/100	100	4	4000	0.25	2.25~5.5	2500	Push-pull	-40~125	SSOP20(Y)
CA-IS3980P	Serial	0	0	100	4	4000	0.25	2.25~5.5	2500	Push-pull	-40~125	SSOP20(Y)
CA-IS3988P	Serial	8	0	100	4	4000	2	2.25~5.5	2500	Push-pull	-40~125	SSOP20(Y)

CA-IS302X

Low-Power Bidirectional I²C Isolators

The CA-IS302x devices are complete dual-channel, bidirectional, galvanic digital isolators with up to 3.75kV_{RMS} (narrow-body package) or up to 5kV_{RMS} (wide-body package) isolation rating and ±150kV/µs typical CMTI. All device versions have Schmitt trigger inputs for high noise immunity and each isolation channel has a logic input and output buffer separated by capacitive silicon dioxide (SiO₂) insulation barrier to provide high electromagnetic immunity and low EMI. These devices feature high-integration design and only require fewer external components to build an isolated I²C interface. This family of devices operates from DC to 2.0MHz. The CA-IS3020 offers two bidirectional, open-drain channels for applications, such as multi-master I²C, that require data and clock to be transmitted in both directions on the same line. The CA-IS3021 provides an isolated I²C compatible interface supporting master mode only, with a unidirectional clock (SCL), and bidirectional data (SDA) channel.

The CA-IS302x series of devices are specified over the -55°C to +125°C operating temperature range and are available in 8-pin SOIC narrow body package, 8-pin SOIC wide body package and 16-pin SOIC wide body package. The wide temperature range and high isolation voltage make the devices ideal for using in harsh industrial environments.

RoHS-Compliant Packages

Applications

Motor control systems

Medical Equipment

Instrumentation

Battery Management

Narrow-body SOIC8-NB(S) package

♦ Wide-body SOIC8-WB(G) package

I2C, SMBus, PMBus™ Interfaces

Wide-body SOIC16-WB(W) package

Key Features

Bidirectional Data Transfer from DC to 2.0MHz Robust Galvanic Isolation of Digital Signals

- ♦ High lifetime: >40 years
- Withstands up to 3.75kVRMS (narrow-body package) and 5kVRMS (wide-body packages) isolation rating
- Narrow-body and wide-body packages
 (4mm or 8mm creepage and clearance)
- ♦ ±150 kV/µs typical CMTI
- Schmitt trigger inputs for high noise immunity
- High electromagnetic immunity and withstands ±10kV surge
- \bullet ±8kV Human Body Model ESD Protection

3.0V to 5.5V Wide Supply Operation Open-drain Outputs

- ◆ 3.5mA Side A sink current capability
- ♦ 35mA Side B sink current capability

Wide Operating Temperature Range: -55°C to 125°C

Simplified Schematic





CA-IS305X

3.75kV_{RMS} and 5kV_{RMS} Isolated CAN Transceivers

The CA-IS305x family of devices is isolated controller area network (CAN) transceiver that has superior isolation and CAN performance to meet the needs of the industrial applications. All devices of this family have the logic input and output buffers separated by a silicon oxide (SiO₂) insulation barrier that provide galvanic isolation. These transceivers operate up to 1Mbps data rate and feature integrated protection for robust communication, including current limit, thermal shutdown, and the extended ±40V fault protection on the CAN bus. The dominant timeout detection prevents bus lockup caused by controller error or by a fault on the TXD input. Also, these CAN receivers incorporate an input common-mode range (CMR) of ±12V.

All devices operate over -40°C to +125°C temperature range and are available in wide-body SOIC8 and SOIC16 packages; also, the CA-IS3050 is available in small SOP8 package.

Key Features

Meets the ISO 11898-2 physical layer standards Integrated protection increases robustness

- ◆ 3.75kVRMS and 5kVRMS withstand isolation voltage for 60s
- ◆ ±150kV/µs typical CMTI
- ◆ ±40V fault-tolerant CANH and CANL
- ±12V extended common-mode input range (CMR)
- Transmitter dominant timeout prevents lockup, data rates down to 37 kbps
- Thermal shutdown
- Date rate is up to 1Mbps

Low loop delay: 150ns (typical), 210ns (maximum)

I/O voltage range supports 2.5V to 5V CAN controller interface

Ideal passive behavior when unpowered Wide operating temperature range: -40°C to 125°C

Simplified Schematic



Wide-body SOIC8 (G), SOIC16-WB(W) packages and small SOP8(U) package.

Safety Regulatory Approvals

- ◆ VDE 0884-11 reinforced isolation certification
- ◆ UL certification according to UL1577
- ◆ IEC 62368-1, IEC 61010-1, GB 4943.1-2011 and
- GB 8898-2011 reinforced insulation certifications

Applications

Industrial Controls Building Automation Security and Protection System Transportation Medical Telecom HVAC



CA-IS1044S

Isolated CAN Transceivers with ±58V Fault Protection

The CA-IS1044S isolated control area network (CAN) transceiver meet the ISO 11898-2 physical layer standards. Each transceiver channel has the logic input and output buffers separated by a silicon oxide (SiO₂) insulation barrier that provides up to 3kV_{RMS} galvanic isolation rating. Isolation improves communication by breaking ground loops and reduces noise where there are large differences in ground potential between ports.

This device is designed for using in CAN FD networks up to 2Mbps and features current limit, thermal shutdown, extended ±58V fault protection on the CAN bus lines and ±30V input common-mode range (CMR). The CA-IS1044S is in a standard 8-pin SOIC package and operates over the -40°C to +125°C temperature range.

Key Features

Meets the ISO 11898-2 physical layer standards Integrated protection increases robustness

- ◆ 3.0 kVRMS withstand isolation voltage for 60s
- ◆ ±100kV/µs typical CMTI
- ◆ ±58V fault-tolerant CANH and CANL
- ±30V extended common-mode input range (CMR)
- Transmitter dominant timeout prevents lockup
 Thermal shutdown
- Ideal passive behavior when unpowered Low loop delay: 150ns (typical), 210ns (maximum)
- 2.5V to 5.5V Logic-Supply Range -40°C to +125°C Operating Temperature Available in SOIC(8) package

Applications

Industrial Controls Building Automation Security and Protection System Transportation Medical Telecom HVAC

Simplified Schematic





CA-IS306X

5kV_{RMS} Isolated CAN Transceivers with Integrated DC-DC Converter

The CA-IS306x is a family of galvanically-isolated CAN transceivers with a built-in isolated DC-DC converter, that eliminates the need for a separate isolated power supply in space constrained isolated designs. It has the logic input and output buffers separated by a silicon oxide (SiO₂) insulation barrier that provides up to $5kV_{RMS}$ (60s) of galvanic isolation. Isolation improves communication by breaking ground loops and reduces noise where there are large differences in ground potential between ports. The transceivers operate up to 1Mbps data rate and feature integrated protection for robust communication, including current limit, thermal shutdown, and the extended ±40V fault protection on the CAN bus.

The CA-IS3062 is available in wide-body 16 pin SOIC(W) package, operates over -40°C to +125°C temperature range.

Key Features

Meets the ISO 11898-2 physical layer standards Integrated DC-DC converter for cable-side power

Integrated protection increases robustness

- ◆ 5.0kVRMS withstand isolation voltage for 60s (galvanic isolation)
- ♦ ±150kV/µs typical CMTI
- ◆ ±40V fault-tolerant CANH and CANL
- ±12V extended common-mode input range (CMR)
- Transmitter dominant timeout prevents lockup, data rates down to 37 kbps
- Thermal shutdown
- Date rate is up to 1Mbps
- Operating from a single 5V supply on the logic side
- Low loop delay: 150ns (typical), 210ns (maxi-

Simplified Schematic



mum) Ideal passive behavior when unpowered Wide operating temperature range: -40°C to 125°C Wide-body SOIC16-WB(W) package

Applications

Industrial Controls Building Automation Security and Protection System Transportation Medical Telecom



CA-IS308X

5kV_{RMS} Isolated Half/Full-Duplex RS-485/RS-422 Transceivers

The CA-IS308x family of devices is isolated RS-485/RS-422 transceiver that has superior isolation and RS485 performance to meet the needs of the industrial applications. All devices of this family have the logic input and output buffers separated by a silicon oxide (SiO₂) insulation barrier that provides up to 5000V_{RMS} (60s) of galvanic isolation and ±150kV/µs typical CMTI. Robust isolation coupled with extended ESD protection and increased speeds enables efficient communication in noisy environments, making them ideal for communication between logic-side and bus-side in a wide range of applications, such as motor drivers, PLC communication modules, telecom rectifiers, elevators, HVACs etc. applications.

The CA-IS308x series devices are available in wide-body SOIC16 package which is the industry standard isolated RS-485/RS-422 package, and operate over -40°C to +125°C temperature range.

Key Features

High-performance and compliant with RS-485 EIA/TIA-485 standard

Up to 10Mbps data rate

1/8 unit load enables up to 256 nodes on the bus 2.5V to 5.5V logic side supply voltage and 3.0 V to 5.5 V bus side supply voltage

Integrated protection for robust communication

◆ 5kVRMS withstand isolation voltage for 60s (galvanic isolation)

- ◆ ±150kV/µs typical CMTI
- ♦ High lifetime: >40 years

◆ ±8kV Human Body Model (HBM) ESD protection on bus I/O, ±6kV HBM ESD protection on logic I/O

Short-circuit protection and thermal shutdown

◆ True fail-safe guarantees known receiver output state

Wide operating temperature range: -40°C to 125°C

Wide-body SOIC16-WB(W) package Safety regulatory approvals

◆ VDE 0884-11 and DIN EN & IEC 62368-1 VDE reinforced isolation certifications (pending)

♦ UL certification according to UL1577

◆ IEC 62368-1, IEC 61010-1, GB 4943.1-2011 and GB 8898-2011, CQC reinforced insulation certifications

Applications

Industrial automation equipment Grid infrastructure Solar inverter Motor drivers HVAC

Simplified Schematic





CA-IS2082B

3kV_{RMS} Isolated Half-Duplex RS-485/RS-422 Transceivers

The CA-IS2082B is a galvanically-isolated half-duplex RS-485/RS-422 transceiver that has superior isolation and high electromagnetic immunity, low EMI. This device has the logic input and output buffers separated by a silicon oxide (SiO₂) insulation barrier that provides galvanic isolation and improves communication by breaking ground loops and reduces noise where there are large differences in ground potential between ports. The receiver is 1/8-unit load, allowing up to 256 transceivers (loads) on a common bus. Also, this RS-485/RS-422 transceiver does not require fail-safe bias resistors because a true fail-safe feature is integrated into the devices. Fail-safe feature is used to keep the receiver's output in a defined state when the receiver is not connected to the cable, the cable has an open or the cable has a short.

The CA-IS2082B is available in 16-pin SSOP package, and operates over -40°C to +125°C temperature range.

Key Features

High-performance and compliant with RS-485 EIA/TIA-485 standard

Up to 5Mbps data rate

1/8 unit load enables up to 256 nodes on the bus

2.5V to 5.5V logic side supply voltage and 4.5 V

to 5.5 V bus side supply voltage

Integrated protection for robust communication

♦ 3.0kVRMS withstand isolation voltage for 60s (galvanic isolation)

- ♦ ±100kV/µs typical CMTI
- ♦ High lifetime: >40 years

◆ ±8kV Human Body Model (HBM) ESD and ±12kV IEC 61000-4-2 Contact Discharge ESD protection on bus I/O, ±6kV HBM ESD protection on logic I/O

 Short-circuit protection and thermal shutdown

◆ True fail-safe guarantees known receiver

Simplified Schematic



output state Wide operating temperature range: -40°C to 125°C SSOP16(B) package

Applications

Industrial automation equipment Grid infrastructure Solar inverter Motor drivers HVAC



CA-IS309X

5kV_{RMS} Isolated RS-485/RS-422 Transceivers with Integrated DC-DC Converter

The CA-IS309x family of devices is isolated RS-485/RS-422 transceiver with a built-in isolated DC-DC converter, that eliminates the need for a separate isolated power supply in space constrained isolated designs. All devices of this family have the logic input and output buffers separated by a silicon oxide (SiO₂) insulation barrier that provides up to $5kV_{RMS}$ (60s) of galvanic isolation and $\pm 150kV/\mu$ s typical CMTI. Isolation improves communication by breaking ground loops and reduces noise where there are large differences in ground potential between ports. An integrated DC-DC converter generates the 3.3V or 5V operating voltage for the cable-side.

The CA-IS309x series devices are available in wide-body SOIC20 package and SOIC16 package which is the industry standard isolated RS-485/RS-422 package, and operate over -40°C to +125°C temperature range.

Key Features

High-performance and compliant with RS-485 EIA/TIA-485 standard

Up to 10Mbps(CA-IS3096/98 only) data rate 1/8 unit load enables up to 256 nodes on the bus

3V to 5.5V supply voltage range Integrated DC-DC converter for cable-side power

- ♦ 3.3V and 5V output options (VISO \leq VCC)
- High integration with internal transformer
- ◆ Soft-start reduces input inrush current
- Overload and short-circuit protection
- ♦ Thermal shutdown

Integrated protection for robust communication

- 5kVRMS withstand isolation voltage for 60s (galvanic isolation)
- ◆ ±150kV/µs typical CMTI
- ♦ High lifetime: >40 years
- ±8kV Human Body Model(HBM) ESD, ±12kV

Simplified Schematic



 True fail-safe guarantees known receiver output state

Wide operating temperature range: –40°C to 125°C

Wide-body SOIC16-WB(W) and SOIC20-WB(T) packages

Applications

I2C, SMBus, PMBus™ Interfaces Motor control systems Medical Equipment Battery Management Instrumentation



CA-IS2092W

2.5kV_{RMS} Isolated RS-485/RS-422 Transceivers with Integrated DC-DC Converter

The CA-IS2092W is isolated half-duplex RS-485/RS-422 transceiver with internal isolated DC-DC converter, that eliminates the need for a separate isolated power supply in space constrained isolated designs. This device has the logic input and output buffers separated by a silicon oxide (SiO2) insulation barrier that provides up to 2.5kVRMS galvanic isolation and ± 150 kV/µs typical CMTI that improves communication by breaking ground loops and reduces noise where there are large differences in ground potential between ports. An integrated DC-DC converter generates the 3.3V or 5V operating voltage for the cable-side.

The CA-IS2092W is available in wide-body SOIC16 package which is the industry standard isolated RS-485/RS-422 package, and operates over -40°C to +125°C temperature range.

Key Features

High-Performance and Compliant with RS-485

EIA/TIA-485 Standard

Slew-rate-limited Driver with up to 500kbps Data Rate

1/8 unit load enables up to 256 nodes on the bus

3V to 5.5V Supply Voltage Range (VCC) Integrated DC-DC Converter for Cable-side Power

- ♦ 3.3V and 5V output options (VISO \leq VCC)
- ♦ High integration with internal transformer
- ♦ Soft-start reduces input inrush current
- Overload and short-circuit protection
- Thermal shutdown

Integrated Protection for Robust Communication

 2.5kVRMS withstand isolation voltage for 60s (galvanic isolation)

♦ ±150kV/µs typical CMTI

Simplified Schematic





High lifetime: >40 years
 ±8kV Human Body Model(HBM) ESD protection and ±16kV IEC 61000-4-2 Contact
 Discharge ESD protection on bus I/O
 True fail-safe guarantees known receiver output state
 Wide Operating Temperature Range: -40°C to 125°C
 Wide-body SOIC16-WB(W) Package

Applications

Industrial automation equipment Grid infrastructure Solar inverter Motor drivers HVAC



EANALE **Isolated Signal Chain**

Isolation

Chipanalog CA-IS1200/1300 Selection Table - Isolated Amplifier

Part Number	High-side Power Supply (V)	Low-side Power Supply (V)	Differential input voltage (mV)	CMRR(dB)	PSRR (dB)	Norminal Gain	GERR (%)	Isolation Voltage (V _{RMS})	CMTI (kV/µs)	Output Noise (mVR _{MS})	Surge Rating (kVpk)	ESD Rating (V)	Temperature Range (°C)	Package
CA-IS1200U	3-5.5	3-5.5	±250	-98	-100	8	±0.5	3750	150	0.33	6	HBM ±4000 CDM ±2000	-40~125	DUB8(U)
CA-IS1200G	3-5.5	3-5.5	±250	-98	-100	8	±0.5	5000	150	0.33	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC8-WB(G)
CA-IS1300G25G	3-5.5	3-5.5	±250	-93	-100	8.2	±0.5	5000	150	0.33	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC8-WB(G)
CA-IS1300B25G	3-5.5	3-5.5	±250	-98	-100	8.2	±0.5	5000	150	0.33	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC8-WB(G)

Chipanalog CA-IS120X/130X Selection Table - Isolated Modulator

Part Number	High-side Power Supply (V)	Low-side Power Supply (V)	Differential input voltage (mV)	CMRR(dB)	PSRR (dB)	CLK (MHz)	GERR (%)	lsolation Voltage (V _{RMS})	CMTI (kV/µs)	Coder	Surge Rating (kVpk)	ESD Rating (V)	Temperature Range (°C)	Package
CA-IS1204W	4.5-5.5	3-5.5	±250	-98	-100	5-21 IN	±2	5000	150	Uncode	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC16-WB(W)
CA-I\$1306M25G	3-5.5	3-5.5	±250	-98	-100	5-21 IN	±0.2	5000	150	Uncode	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC8-WB(G)
CA-IS1305AM25W	4.5-5.5	3-5.5	±250	-98	-100	5-21 IN	±0.3	5000	150	Uncode	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC16-WB(W)
CA-IS1306AM25W	4.5-5.5	3-5.5	±250	-98	-100	5-21 IN	±0.3	5000	150	Uncode	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC16-WB(W)

INDUSTRIAL

CA-IS1200

3.75kV_{RMS} Isolated Precision Amplifier for Current Sensing

The CA-IS1200 is isolated precision amplifier and optimized for shunt resistor-based current sensing or other small signal measurement applications. The input-side (high-side) and output-side (low-side) are separated by unique silicon oxide (SiO₂) capacitive isolation barriers that provide up to 3.75kV_{RMS} galvanic isolation per UL1577 certification. In systems with different voltage domains, this isolation technical is typically used to protect the low voltage side from the high voltage side in case of any faults. This device also features up to 150kV/µs common mode transient immunity and enable efficient signal transmission in noisy environments. The CA-IS1200 device also features fail-safe output to support high safety system design.

The CA-IS1200 is specified over the -40°C to +125°C operating temperature range and are available in 8-pin SOP package.

Key Features

Full-Scale Sense Voltage Range: ±250 mV Fixed Gain: 8V/V

Low Input Offset Voltage and Offset Drift

◆ ±0.2mV@ 25°C input offset voltage and ±4µ V/°C offset drift

Low Gain Error and Gain Drift

◆ ±0.3% @ 25°C gain error, ±50 ppm/°C gain drift

Low Nonlinearity and Drift: 0.03%, ±1 ppm/°C 3.3V or 5V Power Supply Operating for both Input-side and Output-side **Robust Isolation Barrier**

- ◆ High lifetime: >40 years
- ◆ Up to 3750VRMS isolation rating
- ◆ ±150 kV/µs typical CMTI

Fault Diagnostic Functions Improve System Safety

Applications

125°C

Industrial Motor Controls and Drives **Isolated Power Supplies** UPS

8-pin SOP package (DUB8)

Wide Operating Temperature Range: -40°C to

CA-IS1300

5kV_{RMS} Isolated Precision Amplifier for Current Sensing

The CA-IS1300 family of devices is isolated precision amplifier and optimized for shunt resistor-based current sensing or other small signal measurement applications. The analog input-side (high-side) and digital output-side (low-side) are separated by unique silicon oxide (SiO₂) capacitive isolation barriers that provide up to 5kV_{RMS} galvanic isolation per UL1577 certification. In systems with different voltage domains, this isolation technical is typically used to protect the low-voltage side from potentially harmful voltages and damage. These devices also feature up to 150kV/µs common mode transient immunity and enable efficient signal transmission in noisy environments. This family of devices also features fail-safe output to support high safety system design.

The CA-IS1300 is specified over the -40°C to +125°C operating temperature range and are available in 8-pin SOIC wide body package.

Key Features

Full-Scale Sense Voltage Range: ±50mV or ±250 mV

Fixed Gain: 8.2V/V or 41V/V

Low Input Offset Voltage and Offset Drift

◆ CA-I\$1300G05: ±0.1mV@ 25°C input offset voltage and ±1 µV/°C offset drift

CA-IS1300G25: ±0.2mV@ 25°C input offset voltage and ±4µV/°C offset drift

Low Gain Error and Gain Drift

◆ ±0.3% (max) @ 25°C gain error, ±50 ppm/°C aain drift

Low Nonlinearity and Drift: 0.03%, ±1 ppm/°C 3.3V or 5V Power Supply Operating for both Input-side and Output-side **Robust Isolation Barrier**

- ♦ High lifetime: >40 years
- ♦ Up to 5000 V_{RMS} isolation rating

Simplified Schematic



Simplified Schematic





◆ ±150 kV/us typical CMTI Fault Diagnostic Functions Improve System Safetv Wide Operating Temperature Range: -40°C to 125°C 8-pin SOIC Wide Body Package

Applications

Industrial Motor Controls and Drives **Isolated Power Supplies** Frequency Inverters



CA-IS1204

5kVRMs Isolated Sigma-Delta Modulator for Current Sensing

The CA-IS1204 device is precision isolated sigma-delta (Σ - Δ) modulator shunt resistor-based current sensing or other small signal measurement applications. Low offset, low gain error and drift guarantee that measuring accuracy is maintained over the entire operating temperature range. The analog input-side (high-side) and digital output-side (low-side) are separated by unique silicon oxide (SiO₂) capacitive isolation barriers that provide up to 5kV_{RMS} galvanic isolation per UL1577 certification. In systems with different voltage domains, this isolation technical is typically used to protect the low voltage side from the high voltage side in case of any faults. This device also features up to 150kV/ μ s common mode transient immunity and enable efficient bit-stream transmission in noisy environments. It's fail-safe output is ideal to support high safety system design.

The CA-IS1204 device specified for operation with 5MHz to 21MHz clock input. The internal sigma-delta modulator combined with an external digital decimation sinc³ filter within FPGA or DSP, can achieve up to 85 dB signal-to-noise ratio (SNR) at 78.1 Ksps.

The CA-IS1204 is specified over the -40°C to +125°C operating temperature range and is available in 16-pin SOIC wide body package.

Key Features

Full-Scale Sense Voltage Range: ±250 mV Ultra-Low Input Offset Voltage and Gain Error

- ◆ ±1mV (max) input offset voltage
- ◆ ±2% (max) at 25°C gain error

Excellent AC Performance

- ◆ SNR: 85dB (typ)
- ◆ THD: -91dB (typ)

Robust Isolation Barrier

- ♦ High lifetime: >40 years
- ♦ Up to 5000 VRMS isolation rating
- ♦ ±150 kV/µs typical CMTI

Fault Diagnostic Functions Improve System Safety

External Clock Input

Wide Operating Temperature Range: -40°C to 125°C 16-pin SOIC Wide-body Package

Applications

Industrial Motor Controls and Drives Isolated Power Supplies Frequency Inverters

Simplified Schematic





CA-IS1305/1306

5kV_{RMS} Isolated Sigma-Delta Modulator with External Clock Input

The CA-IS1305/CA-IS1306 family of devices is series of precision isolated sigma-delta (Σ - Δ) modulator and optimized for shunt resistor-based current sensing or other small signal measurement applications. The analog input-side (high-side) and digital output-side (low-side) are separated by unique silicon oxide (SiO₂) capacitive isolation barriers that provide up to 5kV_{RMS} galvanic isolation. In systems with different voltage domains, this isolation technical is typically used to protect the low voltage side from the high voltage side in case of any faults. These devices also feature up to 150kV/ μ s common mode transient immunity(CMTI) and enable efficient bit-stream transmission in noisy environments.

The CA-IS1305/CA-IS1306 devices specified for operation with 5MHz to 21MHz clock input. The internal sigma-delta modulator combined with an external digital decimation sinc³ filter within FPGA or DSP, can achieve up to 85 dB signal-to-noise ratio (SNR) at 78.1 Ksps.

The CA-IS1305/CA-IS1306 devices are specified over the -40°C to +125°C operating temperature range and is available in 8-pin SOIC wide-body package and 16-pin SOIC wide-body package.

Key Features

Full-Scale Sense Voltage Range: ±250 mV Manchester Encoded or Uncoded Bitstream Output Options

Ultra-Low Input Offset Voltage and Drift

◆ CA-IS1305: ±150µV(max) @ 25°C input offset voltage

◆ CA-IS1306: ±100µV(max) @ 25°C input offset voltage

◆ ±3.5µV/°C(max) input offset tempco

Low Gain Error and Drift

- ◆ CA-I\$1305: ±0.3%(max) @ 25°C gain error
- ◆ CA-IS1306: ±0.2%(max) @ 25°C gain error
- ◆ ±40ppm/°C(max) gain drift

Excellent AC Performance

- SNR: 85dB (typ)
- ◆ THD: -93dB (typ)

16-Bit Resolution with No Missing Codes

Simplified Schematic



Robust Isolation Barrier

- ♦ High lifetime: >40 years
- Up to 5000 VRMS isolation rating
- ◆ ±150 kV/µs typical CMTI

Fault Diagnostic Functions Improve System Safety Wide Operating Temperature Range: –40°C to 125°C

8-pin SOIC and 16-pin SOIC Wide-body Packages

Applications

Industrial Motor Controls and Drives Isolated Power Supplies UPS



Isolated Power

INDUSTRIAL

isolation

Chipanalog CA-IS3105 Selection Table -Isolated DC-DC Converter

Part Number	Output Power (W)	Operating Voltage Range (V)	Insulation Rating (V _{RM})S	CMTI (Min) (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Temperature Range (°C)	Package
CA-IS3105W	0.5	4.5~5.5	5000	150	10	6000	-40~125	SOIC16-WB(W)

Chipanalog CA-IS310X Selection Table - Isolated Error Amplifier

Part Number	High-side Power Supply (V)	Low-side Power Supply (V)	Reference Voltage (V)	CMRR (dB)	Output Gain	Total Error (%)	Bandwidth (kHz)	Response (µs)	lsolation Voltage (V _{RM} S	CMTI (kV/µs)	Output Noise (mV _{RMS}	Surge Rating (kVpk)	ESD Rating (V)	Temperature Range	Package
CA-IS3102W	3-20	3-20	1.225	72	1.0/2.6	<1	400	<0.5	5000	150	1.7/4.8	6.25	HBM ±2000 CDM ±2000	-40~125	SOIC16-WB(W)
CA-IS3101B	3-20	3-20	1.225	72	1.0/2.6	<1	400	<0.5	2500	150	1.7/4.8	6.25	HBM ±2000 CDM ±2000	-40~125	SSOP16



CA-IS3105W

5kVRMS Complete Isolated DC-DC Converter

The CA-IS3105W is a complete isolated DC-DC converter with up to 5kV_{RMS} isolation rating. This device integrates most of the components needed for an isolated power supply —switching controller, power switches, transformer, resistors ----- into a single, compact SOIC package. The result is an efficient and compact fully integrated solution that is easy to comply with EMI requirements and makes power-supply design as easy as possible. Operating over an input voltage range of 4.5V to 5.5V, this device provides a fixed output voltage of 3.3V, 3.7V, 5V or 5.4V set by pin SEL. The CA-IS3105W features a unique control scheme, which can quickly respond to load transient and accurately regulate the output voltage. The device is capable of delivering a load up to 650mW output power and offering soft-start, current limit, short-circuit, and thermal protection features to better enhance the reliability of the system.

The CA-IS3105W is available in wide-body SOIC16 package and operates over -40°C to +125°C temperature range.

125°C

SOIC16-WB Package

Applications

Industrial Controls

Transportation

Medical

Telecom

Building Automation

Security and Protection System

Key Features

Complete Switch Mode Power Supply

- High integration with internal transformer
 Soft-start reduces input inrush current and
- output overshoot.
- Overload and short-circuit protection
- Thermal shutdown
- 4.5 V to 5.5 V Input Voltage Range

Selectable Output Voltages

♦ 3.3V, 3.7V, 5V and 5.4V output options
 Delivers up to 650mW(5V/130mA) Output Power
 Robust Galvanic Isolation Barrier

- ♦ High lifetime: > 40 years
- ♦ Up to 5000 VRMS isolation rating
- ◆ ±150 kV/µs typical CMTI
- $\pm 10 \, \text{kV}$ surge tolerant

Excellent Electromagnetic Compatibility Wide Operating Temperature Range: -40°C to

Simplified Schematic





CA-IS310X

High Stability Isolated Amplifier

The CA-IS310X series of high stability isolated amplifiers are ideal for linear feedback power supplies. The input-side (high-side) and output-side (low-side) are separated by unique silicon oxide (SiO₂) capacitive isolation barriers that provide up to 2.5kV_{RMS} (CA-IS3101B) or 5kV_{RMS} (CA-IS3102W) galvanic isolation and protect the low-voltage side from potentially harmful voltages and damage. Unlike optocoupler-based solutions, these devices using Chipanalog's proprietary capacitive isolation technology can achieve the faster response, lower power consumption, and better jitter and propagation delay performance, also keep stable performance over temperature and time.

The CA-IS310X devices are available in wide-body SOIC16 package and 16-pin SSOP package, operate over -40°C to +125°C temperature range.

Key Features

Stable over Time and Temperature 0.5% initial accuracy 1% accuracy over the full temperature range Compatible with Type II or Type III Compensation Networks Wide Power Supply Operating Range: 3V to 20V for VDD1 and VDD2 Low-Power Operation: < 7mA 1.225V Internal Reference Voltage 400kHz Bandwidth Robust Isolation Barrier High lifetime: >40 years Up to 2.5kVRMS (CA-IS3101B) and 5kVRMS (CA-IS3102W) isolation rating ±150 kV/µs typical CMTI

Simplified Schematic



Compatible with DOSA Wide Operating Temperature Range: –40°C to 125°C 16-pin SSOP Package and 16-pin SOIC Wide-body Package

Applications

Digital Input Modules for PLCs Industrial, Building, and Process Automation Motor Control CNC Control Industrial Data Acquisition



INDUSTRIAL

Isolation

Chipanalog CA-IS3211 selection table- Isolated Drivers

Part Number	Max Output Current Source/Sink(A)	Output Side UVLO(V)	Output Mode	Operating Voltage(V)	VIOTM (Vrms)	CMTI (kV/µs)	VIOTM (kVpk)	ESD HBM/CDM(kV)	Operating Temperature (°C)	Package
CA-IS3211VBJ	5/6	8	Single Vout Pin	10~30	8000	150	8	4/2	-40~150	SOIC6-WB(J)
CA-IS3211VCJ	5/6	12	Single Vout Pin	14~30	8000	150	8	4/2	-40~150	SOIC6-WB(J)
CA-IS3211VBG	5/6	8	Single Vout Pin	10~30	8000	150	8	4/2	-40~150	SOIC8-WB(G)
CA-I\$3211VCG	5/6	12	Single Vout Pin	14~30	8000	150	8	4/2	-40~150	SOIC8-WB(G)
CA-IS3211SBG	5/6	8	Split Output	10~30	8000	150	8	4/2	-40~150	SOIC8-WB(G)
CA-IS3211SCG	5/6	12	Split Output	14~30	8000	150	8	4/2	-40~150	SOIC8-WB(G)
CA-IS3211VCU	5/6	12	Single Vout Pin	14~30	5300	150	8	4/2	-40~150	DUB8 (U)

Isolated Drivers

CA-IS3211

6A Sink/5A Source, 5.7kVRMS Isolated Single-Channel Gate Driver

The CA-IS3211 devices are a family of single-channel, opto-compatible isolated gate driver capable of sinking 6A and sourcing 5A currents. These devices operate with dual supplies or a single supply of 10V to 30V (8V UVLO version) or 14V to 30V (12V UVLO) wide voltage range of VCC-VEE, making them ideal to drive power MOSFET, IGBT or silicon-carbide(SiC) transistors in various inverter, motor control or isolated power supply systems. The CA-IS3211 can be configured as low-side and high-side drivers. The CA-IS3211V_offers single terminal gate drive output: VOUT and the CA-IS3211S_offers dual separate output terminals: OUTH and OUTL. The driver output is pulled to low state to turn-off external power transistors when VCC supply input is either not powered, is open-circuit or is in UVLO.

All devices have integrated digital galvanic isolation using Chipanalog's proprietary capacitive isolation technology and feature isolation for a withstand voltage rating of up to 5.7kVRMS for 60 seconds with minimum common-mode transient immunity (CMTI) of 150kV/µs. These devices can be used as drop-in replacement for the indust.

Key Features

6A Peak Sink Current and 5A Peak Source Current

Up to 30V Output Drive Supply Range with 8V (CA -

IS3211VB_) and 12V (CA - IS3211VC_) UVLO options

Support Rail to Rail Output

Up to 7V Reverse Voltage on Input - stage Matching Propagation Dela

- ◆ 70ns Propagation delay (typical)
- 25ns Part to part propagation delay matching (maximum)
- ◆ 35ns Pulse width distortion(maximum)

- 40°C to +150°C Operating Junction Temperature Range

Robust Galvanic Isolation

♦ High lifetime: >40 years

- ◆ Up to 5.7kVRMS isolation rating for the wide - body packages and up to 3.75 kVRMS isolation rating for CA - IS3211VCU
- ♦ Common mode transient immunity (CMTI) > ±150kV/µs

Package options

- ♦ 6 pin wide body SOIC (J) Package
- ◆ 8 pin wide body SOIC8 (G) Package
- ♦ 8 pin SOP (DUB) package

Applications

Isolated DC - DC and AC - DC Converters Motor Control Uninterruptible Power Supply (UPS) Isolated Gate Driver for Inverters







CAN/LIN/SBC



Chipanalog CA-IF1051 Selection Table-CAN Transceiver

Part Number	VIO	Remote Wakeup	Data Rate (Mbps)	Common Mede Voltage Range (V)	Fault Protection (V)	HBM ESD other PIN (KV)	HBM ESD BUS PIN (KV)	Operating Voltage Range (V)	VIO Voltage Range (V)	Junction Temp Range (°C)	Package
CA-IF1051HS	Ν	N	5	-30~30	-70~70	4	6	4.5~5.5	/	-55~150	SOIC8
CA-IF1051S	Ν	N	5	-30~30	-58~58	4	8	4.5~5.5	/	-55~150	SOIC8
CA-IF1051VS	Y	N	5	-30~30	-58~58	4	8	4.5~5.5	2.5~5.5	-55~150	SOIC8
CA-IF4420S	Y	N	5	-30~30	-58~58	4	35	4.5~5.5	1.8~5.5	-55~150	SOIC8



INDUSTRIAL

Interface

CA-IF1051

±70V Fault Protected CAN Transceiver with CAN FD

The CA-IF1051 is a family of +5V control area network (CAN) transceivers with integrated protection for industrial applications. These devices are designed for using in high-speed CAN FD networks up to 5Mbps data rate, features extended ±58V (CA-IF1051S/VS) or ±70V (CA-IF1051HS) fault protection on the CAN bus for equipment where overvoltage protection is required. These CAN devices also incorporate an input common-mode range (CMR) of ±30V and well suited for applications where ground planes from different systems are shifting relative to each other. The transmitter include a dominant timeout detection to prevent bus lockup caused by controller error or by a fault on the TXD input. In addition, the family features a variety of options to address common CAN application requirements: silent-mode to disable the transmitter, low level translation to interface with low voltage controllers (CA-IF1051VS).

The CA-IF1051 devices are in a standard 8-pin SOIC package. All parts operate over the -55°C to +125°C temperature range.

Key Features

Meets the ISO 11898-2:2016 and ISO 11898-5:2007 Physical Layer Standards 'Turbo' CAN:

• Support classic CAN and high-speed operation of up to 5Mbps CAN FD (flexible data rate)

• Short symmetrical propagation delay and fast loop times for enhanced timing margin

Ideal Passive Behavior When Unpowered

• Bus and logic terminals are high impedance (no load)

 Power up/down with glitch free operation on bus and RXD output

Integrated Protection Increases Robustness

- \blacklozenge ±58V (CA-IF1051S/VS) or ±70V (CA-IF1051HS) fault-tolerant CANH and CANL
- ±30V extended common-mode input range (CMR)
- Undervoltage protection on VCC and VIO

("V" version) supply terminals
Transmitter dominant timeout prevents lockup, data rates down to 4kbps
Thermal shutdown

Junction temperatures range of -55°C to 125°C 2.5V to 5.5V Logic-Supply (VIO) Range (CA-IF-1051VS only)

Applications

Industrial automation Building automation HVAC systems Distribution automation Vending machines Security systems

Simplified Schematic





RS-485/422/232

Interface

Chipanalog CA-IF48XX Selection Table-Standard RS-485/RS-422 Transceivers

Part Number	Number of Nodes on Bus	Operation Mode	Data Rate (Mbps)	common mode range (V)	Fault protection (V)	HBM ESD Ohter PIN (±KV)	HBM ESD Bus Pin (±KV)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IF4888HS	256	Half Duplex	0.5	-15~15	-30~30	6	30	3~5.5	-40~125	SOIC8
CA-IF4805HS	256	Half Duplex	0.5	-15~15	-30~30	6	30	3~5.5	-40~125	SOIC8
CA-IF4820HS	256	Half Duplex	20	-15~15	-30~30	6	30	3~5.5	-40~125	SOIC8
CA-IF4820HM	256	Half Duplex	20	-15~15	-30~30	6	30	3~5.5	-40~125	MSOP8
CA-IF4820HD	256	Half Duplex	20	-15~15	-30~30	6	30	3~5.5	-40~125	DFN8
CA-IF4820FS	256	Full Duplex	20	-15~15	-30~30	6	15	3~5.5	-40~125	SOIC8
CA-IF4850FD	256	Full Duplex	20	-15~15	-30~30	6	15	3~5.5	-40~125	DFN8
CA-IF4850HS	256	Half Duplex	50	-15~15	-30~30	6	30	3~5.5	-40~125	SOIC8

Chipanalog CA-IF4220 selection table-Standard RS-422 Transceivers

Part Number	Number of Nodes on Bus	Operation Mode	Data Rate (Mbps)	common mode range (V)	Fault protection (V)	HBM ESD Ohter PIN (±KV)	HBM ESD Bus Pin (±KV)	Operating Voltage Range (V)	e Temperature Range (°C)	Package
CA-IF4888HS	256	Half Duplex	0.5	-15~15	-30~30	6	30	3~5.5	-40~125	SOIC8

Chipanalog CS485XX selection table-Standard RS-485Transceivers

Part Number	Number of Nodes on Bus	Operation Mode	Data Rate (Mbps)	common mode range (V)	HBM ESD Ohter PIN (±KV)	HBM ESD Bus Pin (±KV)	Operating Voltage Range (V)	e Temperature Range (°C)	Package
C\$485\$	50	Half Duplex	0.25	-7~12	8	18	3~5.5	-40~125	SOIC8
C\$485M	50	Half Duplex	0.25	-7~12	8	18	3~5.5	-40~125	MSOP8
C\$48505\$	64	Half Duplex	0.5	-7~12	8	20	3~5.5	-40~125	SOIC8
C\$48520\$	64	Half Duplex	20	-7~12	8	20	3~5.5	-40~125	SOIC8
C\$48505M	64	Half Duplex	0.5	-7~12	8	20	3~5.5	-40~125	MSOP8
C\$48520M	64	Half Duplex	20	-7~12	8	20	3~5.5	-40~125	MSOP8
C\$48505D	64	Half Duplex	0.5	-7~12	8	20	3~5.5	-40~125	DFN8
C\$48520D	64	Half Duplex	20	-7~12	8	20	3~5.5	-40~125	DFN8
C\$48505A\$	256	Half Duplex	0.5	-7~12	8	20	3~5.5	-40~125	SOIC8
C\$48520A\$	256	Half Duplex	20	-7~12	8	20	3~5.5	-40~125	SOIC8
C\$48505AM	256	Half Duplex	0.5	-7~12	8	20	3~5.5	-40~125	MSOP8
C\$48520AM	256	Half Duplex	20	-7~12	8	20	3~5.5	-40~125	MSOP8
C\$48505AD	256	Half Duplex	0.5	-7~12	8	20	3~5.5	-40~125	DFN8 3x3
C\$48520AD	256	Half Duplex	20	-7~12	8	20	3~5.5	-40~125	DFN8 3x3



INDUSTRIAL

CA-IF4888

Bus-Polarity Correcting RS-485/RS-422 Transceive

The CA-IF4888 half-duplex ±30kV ESD-protected RS-485 transceiver features integrated automatic polarity correction to ensure that miswired A and B lines are autonomously corrected, simplifying equipment and network installation. Upon hot plug-in, the CA-IF4888 detects and corrects the bus polarity within the first 76 ms of bus idling. This device has ±30V fault protection for overvoltage conditions on the communication bus lines that ensure robust protection on the bus. It also features ±15V of common-mode range (CMR), making them ideal for electrically noisy environments where different systems have shifting ground levels relative to each other and long distance transmission.

The CA-IF4888 device is specified over the -40°C to +125°C operating temperature range and is available in SOIC8 package.

Key Features

Automatic Polarity Correction Within 80ms (typ.) High-Performance and Compliant with RS-485 EIA/TIA-485 Standard

- ♦ 300bps to 500kbps data rate
- ◆ 1/8 unit load enables up to 256 nodes on the bus
- ♦ 3V to 5.5V supply voltage range

Integrated Protection for Robust Communication

- ±30V fault protection range on driver outputs/receiver inputs
- ◆ Common-mode voltage range: ±15V
- ◆ ±30kV Human Body Model ESD protection
- Short-circuit protection and thermal shutdown
- True fail-safe guarantees known receiver output state

Low Power

- ♦ 960µA (max.) @ receive mode
- ♦ Shutdown current: < 5µA

Simplified Schematic



Wide Operating Temperature Range: -40°C to 125°C 8 pin SOIC Package

Applications

Industrial automation and process control HVAC systems Electricity meters Inverters Video surveillance Control systems Telecom equipment

CA-IF48XX

RS485/RS422 Transceivers with ±30kV ESD Protection

The CA-IF4805/20/50 family of devices are low-power transceivers for RS-485 and RS-422 communications in harsh environments. All devices have ±30V fault protection for overvoltage conditions on the communication bus lines that ensure robust protection on the bus. They also feature ±15V of common-mode range (CMR), making them ideal for electrically noisy environments where different systems have shifting ground levels relative to each other and long distance transmission. The bus pins of these devices are protected against ±15kV (for the full-duplex parts) and ±30kV (for the half-duplex parts) electro-static discharge (ESD) shocks, eliminating the need for additional system level protection components.

The CA-IS48xx family devices are specified over the -40°C to +125°C operating temperature range and are available in small 8-pin MSOP, 8-pin DFN packages for space constrained applications and 8-pin SOIC for drop-in compatibility.

Key Features

High-Performance and Compliant with RS-485 EIA/TIA-485 Standard

◆ Low EMI 500Kbps data rate (CA-IF4805) and up to 50Mbps (CA-IF4850), 20Mbps (CA-IF4820) high-speed data rate

- 1/8 unit load enables up to 256 nodes on the bus
- \blacklozenge 3V to 5.5V supply voltage
- Integrated Protection for Robust Communication
- ±30V fault protection range on driver outputs/receiver inputs
- ◆ Common-mode voltage range: ±15V
- ± 15 kV Human Body Model ESD protection for the full-duplex devices (CA-IF48xxF_)
- ◆ ±30kV Human Body Model ESD protection for the half-duplex devices (CA-IF48xxH_)
- ◆ Short-circuit protection
- ♦ Thermal shutdown
- ◆ True fail-safe guarantees known receiver

Simplified Schematic





output state Low Power ♦ 960µA (max.) @ receive mode ♦ Shutdown current: < 5µA Wide Operating Temperature Range: -40°C to 125°C 8 pin SOIC, 8 pin MSOP-8 and 8 pin DFN-8 Packages

Applications

Motor Drive Factory Automation & Control Grid Infrastructure Home and Building Automation Video Surveillance Process Control Telecommunication Equipment



RS485/422 Transceivers with ±20kV ESD Protection

The CS485XX family of devices are low-power half-duplex transceivers for RS-485/RS-422 communications in harsh environments. All devices feature ±20kV electro-static discharge (ESD) protection for the bus pins (A and B), eliminating the need for additional system level protection components.

The CS485XX family of devices contain one driver(TX) and one receiver(RX), operates over the +3V to +5.5V supply range, making these devices convenient for designers to use one part with either +3.3V or +5V supply systems. The CS48520x devices can transmit and receive at data rates up to 20Mbps, while the CS48505x devices are specified for data rates up to 500kbps. These devices also include fail-safe circuitry, guarantee-ing a logic-high receiver output when the receiver inputs are shorted or open.

Key Features

High-Performance and Compliant with RS-485 EIA/ TIA-485 Standard

◆ Low EMI 500kbps Data Rate (CS48505x) and up to 20Mbps (CS48520x) High-Speed Data Rate

◆ 1/8 Unit Load Enables up to 256 Nodes on the Same Bus

Integrated Protection for Robust Communication

- ◆ -7V to +12V Common-Mode Voltage Range
- ◆ ±20kV Human Body Model ESD Protection

and $\pm 4kV$ Contact Discharge IEC 61000-4-2 ESD Protection on A/B pins

- Short-Circuit Protection
- Thermal Shutdown
- ♦ True Fail-Safe Guarantees Known Receiver Output State

Glitch-free during Power on/Power off

Output Level is Compatible with Profibus Standard

◆ | V₀₀ | > 2.1V @ 5V Supply Voltage

Low Power

- Low Supply Current (0.95mA, typ.)
- ♦ Shutdown Current < 5µA
- 3V to 5.5V Supply Voltage Range

Wide Operating Temperature Range: –40°C to 125°C

8 pin SOIC, 8 pin MSOP and 8 pin DFN Packages

Applications

Factory Automation & Control Grid Infrastructure Home and Building Automation Video Surveillance Smart Meters Process Control Telecommunication Equipment

Simplified Schematic





Others

INDUSTRIAL

Interface

Chipanalog CA-IF1100 selection table-EtherCAT

Part Number	Features	EtherCAT Ports	FMMU	SyncManager	Distributed Clocks	Process RAM	User RAM	Temperature Range (°C)	Package
CA-IF1100	EtherCAT Slave Controller	0-4	3	4	64	8KB	4KB	-40~85	TFBGA

Chipanalog CA-IF4023 Selection Table-AISG Antenna Interface Transceiver

Part Number	Features	RX passband (MHz)	RX threshold (dBm)	TX frequency (MHz)	TXOUT Power (dBm)	TXOUT impedance (DC,ohm)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IF4023	AISG Switch Controlled Coaxial Modem	1.1~4.17	-18~-12	2.176	5.38~12	0.03	3~5.5	-40~125	QFN16 3mm*3mm

Chipanalog CA-IF428X selection table-Homebus

Part Number	Features	Data Rate (kbps)	Bus polarity detection	Bus receive tthreshold voltage built-in	Whether the delay time of dynamic terminal resistance is adjustable	Data Input Timeout Detection	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IF4288	The power and data are carried on a single pair of wires	9.6~200	No	No	No (34us)	21ms	4.5~5.5	-40~105	QFN24 4mm*4mm
CA-IF4289	The power and data are carried on a single pair of wires	9.6~200	Yes	Yes	Yes (34us)	21ms	4.5~5.5	-40~105	QFN24 4mm*4mm

CA-IF4023

AISG On and Off Keying Coax Modem Transceiver

The CA-IF4023 is an integrated AISG transceiver designed to be compliant with the Antenna Interface Standards Group (AISG) v3.0 specification. Integrated on the chip are the transmitter, receiver, and active filters. The receive channel offers a typical dynamic range of 20dB and integrates an active band-pass filter with 2.176MHz center frequency to enable demodulation of signals even in the presence of spurious frequency components.

The transmitter integrates an narrow bandwidth band-pass filter with 2.176MHz center frequency as well and is compliant with the spectrum emission requirement provided by the AISG v3.0 standard. It supports adjustable output power levels varying from +5.4dBm to +12dBm in order to compensate for loss in the external circuitry and cabling. A direction output is provided which facilitates bus arbitration for an RS-485 interface. This device integrates an oscillator input for a crystal and also accept standard clock inputs to the oscillator.

The CA-IF4023 is packaged in a small, $3mm \times 3mm$, 16-pin QFN and is fully specified for operation over -40°C to +125°C extended temperature range.

Applications

Grid infrastructure

Solar inverter

Motor drivers

HVAC

Industrial automation equipment

Key Features

Receiver Offers a Wide Input Dynamic Range

• -15dBm to +5dBm in 50 Ω

5.4dBm to 12dBm Resistor-adjustable Output Power

AISG v3.0-compliant Output Emission Profile Supports 9.6kbps, 38.4kbps, 115.2kbps AISG Signaling

Integrated Active Band-pass Filter with Center Frequency at 2.176MHz

3.0V to 5.5V Analog Supply Voltage

1.6V to 5.5V Independent Logic Supply Voltage

Low-Power Standby Mode

-40°C to +125°C Operating Temperature Range Small, 3mm x 3mm, 16-pin QFN Package

Simplified Schematic



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CA-IF428X

Home Bus System (HBS) Compatible Transceiver

The CA-IF428x family of devices complies with the home bus standard requirements while improving communication in harsh environments and minimizing the need for external components. The home bus standard was designed to ease communication between multiple different devices connected to a single bus, where data and power are passed on one single pair of wires, to allow a mutual exchange of information at any time from any room in a home or building among various appliances, equipment, or security devices.

The CA-IF428x family is configurable to operate up to 200kbps with adjustable receiver thresholds and dynamic cable termination for improved communication with high data rates. This family of devices is rated for operation up to $\pm 8kV$ contact discharge and $\pm 15kV$ air gap ESD protection, and survives up to $\pm 1kV$ surge events with selected external components.

Key Features

Configurability Enables Flexible Design

♦ 9.6kbps to 200kbps Data Rate

 Adjustable Receiver Thresholds and Internal Threshold Configuration Option

- ◆ Large Receiver Hysteresis
- Adjustable Slew Rate on Transmit Signals
- Dynamic Cable Termination Improves Signal Quality for High-Speed Communication
- Support Bus Polarity Detection (CA-IF4289 only)

Integrated Protection for Robust Communication

◆ IEC 61000-4-2 ±8kV Contact and ±15kV

Air-Gap

ESD Protection

◆ IEC 61000-4-5 ±1kV Surge Protection with Selected External Components

Simplified Schematic



Compact 4mm*4mm QFN Package Operation temperature range from -40°C to +105°C

Applications

HVAC Data over Power Applications (PoD) Digital Signage Industrial PLC Remote Monitoring and Sensing



AUTOMOTIVE



AUTOMOTIVE

Isolation

Chipanalog CA-IS37XX-Q1 Selection Table-Standard Digital Isolators

Part Number	Integrate isolated power supply (Y/N)	Nunber of Channels	Number of reversed channels	Insulation Rating (V _{RMS})	CMTI (kV/µs)	Surge Rating (kVpk)	ESD Rating (Two sides,V)	Data Rate (bps)	Operating Voltage Range (V)	Operating current per channel (1Mbps,mA,typ)	Output mode	Default output	Temperature Range (°C)	Package
CA-IS3710HS-Q1	Ν	1	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3710LS-Q1	Ν	1	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3720HS-Q1	Ν	2	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3720LS-Q1	Ν	2	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3721HS-Q1	Ν	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3721LS-Q1	Ν	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3722HS-Q1	Ν	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC8(S)
CA-IS3722LS-Q1	Ν	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC8(S)
CA-IS3722HW-Q1	N	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3722LW-Q1	Ν	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3741HW-Q1	N	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3741LW-Q1	Ν	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3742HW-Q1	N	4	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-40~125	SOIC16-WB(W)
CA-IS3742LW-Q1	Ν	4	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)

Interface

Chipanalog CA-IF1051/1042/1044-Q1 Selection Table-CAN Transceiver

Part Number	VIO	Remote Wakeup	Data Rate (Mbps)	Common Mede Voltage Range (V)	Fault Protection (V)	HBM ESD other PIN (KV)	HBM ESD BUS PIN (KV)	Operating Voltage Range (V)	VIO Voltage Range (V)	Junction Temp Range (°C)	Package
CA-IF1051S-Q1	Ν	Ν	5	-30~30	-58~58	4	8	4.5~5.5	/	-55~150	SOIC8
CA-IF1051VS-Q1	Y	Ν	5	-30~30	-58~58	4	8	4.5~5.5	2.5~5.5	-55~150	SOIC8
CA-IF1042S-Q1	Ν	Y	5	-30~30	-70~70	8	16	4.5~5.5	/	-55~150	SOIC8
CA-IF1042VS-Q1	Y	Y	5	-30~30	-70~70	8	16	4.5~5.5	3~5.5	-55~150	SOIC8
CA-IF1044S-Q1	Ν	Y	5	-30~30	-58~58	6	8	4.5~5.5	/	-55~150	SOIC8
CA-IF1044VS-Q1	Y	Y	5	-30~30	-58~58	6	8	4.5~5.5	3~5.5	-55~150	SOIC8
CA-IF1044D-Q1	Ν	Y	5	-30~30	-58~58	6	8	4.5~5.5	/	-55~150	DFN8
CA-IF1044VD-Q1	Y	Y	5	-30~30	-58~58	6	8	4.5~5.5	3~5.5	-55~150	DFN8

Chipanalog CA-IF1021-Q1 Selection Table-LIN Transceiver

Part Number	VIO	Remote Wakeup	Data Rate (Kbps)	Common Mede Voltage Range (V)	Fault Protection (V)	HBM ESD other PIN (KV)	HBM ESD BUS PIN (KV)	Operating Voltage Range (V)	VIO Voltage Range (V)	Junction Temp Range (°C)	Package
CA-IF1021S-Q1	Ν	Y	20	/	-58~58	2	4	5.5~27	/	-55~150	SOIC8

CA-IS37XX-Q1

Automotive High-speed Digital Isolators

The CA-IS37XX –Q1 devices are high-performance, low-power, multi-channel, unidirectional digital isolators with up to 5kV_{RMS} isolation rating and ultra-fast data rate (up to 150Mbps). These devices offer high electromagnetic immunity and low emissions while isolating different ground domains and block high-voltage/high-current transients from sensitive or human interface circuitry. Each isolation channel has a logic input and output buffer separated by capacitive silicon dioxide (SiO2) insulation barrier, the integrated Schmitt trigger on each input provide excellent noise immunity.

All devices of CA-IS374x family feature default outputs. When the input is either not powered or is open-circuit, the default output is low for devices with suffix L and high for devices with suffix H. The CA-IS37XX-Q1 family devices are specified over the -40°C to +125°C operating temperature range and are available in 16-pin SOIC wide body package.

Key Features

Robust Galvanic Isolation of Digital Signals

- ♦ High lifetime: >40 years
- ♦ Up to 5000 VRMS isolation rating
- ♦ ±150 kV/µs typical CMTI
- ♦ Schmitt trigger inputs

Interfaces Directly with Most Micros and FPGAs

- ◆ Data rate: DC to 150Mbps
- ◆ Accepts 2.5V to 5.5V supplies

 Default output High (CA-IS37xxH) and Low (CA-IS37xxL) Options

Low Power Consumption

- 1.5mA per channel at 1Mbps with VDD = 5.0V
- 6.6mA per channel at 100Mbps with VDD = 5.0V

Best in Class Propagation Delay and Skew

♦ 12ns typical propagation delay

- Ins pulse width distortion
- ◆ 2ns propagation delay skew (chip -to-chip)
- ◆ 5ns minimum pulse width

No Start-Up Initialization Required

Simplified Schematic



Wide-body SOIC16-WB(W) package
Wide Operating Temperature Range: -40°C to 125°C
Safety Regulatory Approvals
◆ VDE 0884-11 reinforced isolation
◆ UL certification according to UL1577
◆ IEC 62368-1, IEC 61010-1, GB 4943.1-2011 and GB 8898-2011 certifications

AEC-Q100 (Grade 1) Certified

Applications

Industrial Controls Building Automation Security and Protection System Transportation Medical Telecom



CA-IF1051S/VS-Q1

5Mbps, ±58V Fault Protected CAN Transceiver with CAN FD

The CA-IF1051S-Q1/CA-IF1051VS-Q1 are control area network (CAN) transceivers with integrated protection for industrial applications. This family of devices is designed for using in high-speed CAN FD networks up to 5Mbps data rate, features extended ±58V fault protection on the CAN bus for equipment where overvolt-age protection is required. These CAN devices also incorporate an input common-mode range (CMR) of ±30V, exceeding the ISO 11898 specification of -2V to +7V, and well suited for applications where ground planes from different systems are shifting relative to each other. For the CA-IF1051VS-Q1 device, interfacing with CAN protocol controllers is simplified by the 2.5V to 5.5V wide logic-supply voltage range (V_{IO}).

The transmitter include a dominant timeout detection to prevent bus lockup caused by controller error or by a fault on the TXD input. When TXD remains in the dominant state (low) for longer than tDOM, the driver is switched to the recessive state, releasing the bus. In addition, this family of devices features a silent-mode option to disable the transmitter.

The CA-IF1051S-Q1/CA-IF1051VS-Q1 are in a standard 8-pin SOIC package. Both parts operate over the -55°C to +150°C temperature range.

Key Features

Meets the ISO 11898-2:2016 and ISO 11898-5:2007 Physical Layer Standards 'Turbo' CAN:

• Support classic CAN and high-speed operation of up to 5Mbps CAN FD (flexible data rate)

• Short symmetrical propagation delay and fast loop times for enhanced timing margin

Ideal Passive Behavior When Unpowered

• Bus and logic terminals are high impedance (no load)

 Power up/down with glitch free operation on bus and RXD output

Integrated Protection Increases Robustness

- ◆ ±58V fault-tolerant CANH and CANL
- ◆ ±30V extended common-mode input range (CMR)
- ◆ Undervoltage protection on VCC supply terminals
- Transmitter dominant timeout prevents

Simplified Schematic



lockup, data rates down to 5.5kbps
 ◆ Thermal shutdown
 2.5V to 5.5V Logic-Supply (VIO) Range (CA-IF1051VS-Q1 only)
 -55°C to 150°C Junction Temperatures Range
 8 pin SOIC Package
 AEC-Q100 (Grade 1) Certified

Applications

Hybrid, electric & conventional powertrain Industrial automation Building automation HVAC systems Distribution automation Vending machines Security systems



CA-IF1042S/VS-Q1

Automotive CAN Transceivers with ±70V Fault Protection

The CA-IF1042x-Q1 devices are control area network (CAN) transceivers with integrated protection for industrial and automotive applications. These devices are designed for using in CAN FD networks up to 5 Mbps and feature ±70V extended fault protection on the CAN bus for equipment where overvoltage protection is required. These devices include a dominant timeout to prevent bus lockup caused by controller error or by a fault on the TXD input. The transceivers feature a STB pin for two modes of operation: normal high-speed mode and standby mode for low current consumption. Also, the CA-IF1042Vx family of devices provides low level translation to simplify the interface with low voltage CAN controllers.

The CA-IF1042-Q1 family of devices is available in a standard 8-pin narrow-body SOIC package and 8-pin DFN package, operates over the -55°C to +150°C junction temperature range.

Key Features

Meets the ISO 11898-2:2016 and ISO 11898-5:2007 physical layer standards Support classic CAN and 5 Mbps CAN FD (flexible data rate) Ideal passive behavior when unpowered Bus and logic terminals are high impedance (no load) Power up/down with dlitch free operation

Power up/down with glitch free operation
 on bus and RXD output

Integrated protection increases robustness

- ◆ ±70V fault-tolerant CANH and CANL
- ±30V extended common-mode input range (CMR)

 Undervoltage protection on VCC and VIO supply terminals

 Transmitter dominant timeout prevents lockup, data rates down to 4 kbps

Simplified Schematic



◆ Thermal shutdown
 Typical loop delay: 160ns
 3.0V to 5.5V Logic-Supply (VIO) Range (CA-IF-1042Vx-Q1 only)
 -55°C to 150°C Junction Temperatures Range
 Available in SOIC8 and DFN8 packages
 AEC-Q100 qualified for automotive applications

Applications

Automotive and transportation Industrial automation Building automation HVAC systems



CA-IF1044S/VS-Q1

Automotive CAN transceiver with standby

The CA-IF1044x-Q1 high-speed control area network (CAN) transceivers meet the ISO 11898-2 physical layer standards. This family of devices is designed for using in automotive CAN FD networks up to 5 Mbps data rate and features ±58V extended fault protection on the CAN bus for equipment where overvoltage protection is required. The transceivers include a dominant timeout detection to prevent bus lockup caused by hung-up microcontroller, and the outputs CANH and CANL are short-circuit current-limited and protected against excessive power dissipation by thermal shutdown circuitry that places the driver outputs in a high-impedance state. Also, the CA-IF1044Vx-Q1 provides low level translation to simplify the interface with low voltage CAN controllers.

The CA-IF1044x-Q1 devices are in a standard 8-pin SOIC package and small-size 8-pin DFN package. This family of devices operates over the -40°C to +125°C temperature range.

Key Features

Meets the ISO 11898-2 physical layer standards Support classic CAN and 5 Mbps CAN FD (flexible data rate)

Integrated protection increases robustness

- ◆ ±58V fault-tolerant CANH and CANL
- ±30V extended common-mode input range (CMR)
- Transmitter dominant timeout prevents
- Undervoltage protection on VCC and VIO
- Thermal shutdown
- Ideal passive behavior when unpowered
- Bus and logic terminals are high impedance (no load)
- Power up/down with glitch free operation on bus and RXD output

Low loop delay: 160ns (typical)

Two operation modes

- ◆ Normal high-speed mode
- Standby mode for low current consumption
- 3.3V to 5.5V logic-supply range
- -40°C to +125°C operating temperature Available in SOIC(8) and DFN(8) packages AEQ-100 Grade 1 qualified

Applications

Automotive gateway Advanced driver assistance system (ADAS) Body electronics Infotainment

Simplified Schematic





CA-IF1021-Q1

±58V Fault Protected LIN Transceiver with Inhibit and Wake-up

The CA-IF1021-Q1 device is Local Interconnect Network (LIN) transceiver with integrated protection for automotive applications. LIN is low-speed universal asynchronous receiver transmitter(UART) commu nication protocol used to support automotive networking. The CA-IF1021-Q1 transceiver controls the LIN bus state via the TXD input and reports the bus state on its open-drain output RXD. This device features slew-rate control and wave-shaping to reduce electromagnetic emissions (EME).

The CA-IS1021-Q1 is designed to support up to 12V applications with 5.5V to 27V wide input voltage operating range. Also, this device supports low-power sleep mode, as well as wake-up from low-power mode through LIN bus, or the WAKE_N pin, SLP_N pin. The CA-IS1021-Q1 allows battery power consump tion reduction at system-level by selectively enabling the various power supplies that can be present on a node through the INH pin. The CA-IF1021-Q1 integrates ESD protection and fault protection which help to reduce external components in the applications. In the event of a ground shift or supply voltage discon nection, the device prevents back-feed current through LIN to the supply input.

Key Features

AEC Q-100 qualified for automotive applications Meets LIN2.0,LIN2.1,LIN2.2,LIN2.2A and ISO 17987-4:2016(12V) physical layer (EPL) stand ards Compliant to SAE J2602-1 and SAE J2602-2 LIN physical layer specification Support up to 12V Applications Wide Operating Supply Range: ◆ 5.5V to 27V supply range (VBAT) LIN Transmit Data Rate is up to 20kbps Operating Mode

- Normal operation
- ◆ Low-power standby mode
- ◆ Low-power sleep mode

Wake-up from Low-power ModeTwo operation modes

- Remote wake-up event from LIN bus
- Local wake-up through WAKE_N pin
- ♦ Wake-up via SLP_N pin

3.3V and 5V input logic compatible

Simplified Schematic



Integrated Protection Increases Robustness

- ◆±58V fault-tolerant LIN bus
- ♦ 42V load dump protection
- ♦ IEC ESD protection
- ◆ Undervoltage protection on VBAT
- Thermal shutdown
- -40°C to 150°C Junction Temperatures Range
- 125°C
- Packages: SOIC8, DFN8

Applications

Body electronics and lighting Infotainment and cluster Hybrid, electric & powertrain systems Personal transport vehicles - Electric bike Industrial transportation

