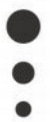


PRODUCTS SELECTION GUIDE



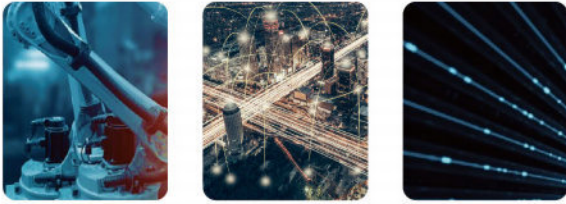
Shanghai Chipanalog Microelectronics Co., Ltd.

Chipanalog is a high-tech company specialized in high-end analog and mixed-signal 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.

**SEMICONDUCTORS
SUPPLIER**





SAFETY REGULATORY APPROVALS

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

Certificate

Functional Safety Management

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

TÜV Rheinland

VDE Prüf- und Zertifizierungsinstitut

GUTACHTEN MIT FERTIGUNGSÜBERWACHUNG
CERTIFICATE OF CONFORMITY WITH FACTORY SURVEILLANCE

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

VDE

VDE Prüf- und Zertifizierungsinstitut

ZEICHENGENEHMIGUNG
MARKS APPROVAL

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

VDE

CERTIFICATE OF COMPLIANCE

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

UL

CERTIFICATE OF COMPLIANCE

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

UL

AEC-Q100 QUALIFICATION TEST REPORT

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

Item	Value	Status	Notes
1.1	Pass	Pass	
1.2	Pass	Pass	
1.3	Pass	Pass	
1.4	Pass	Pass	
1.5	Pass	Pass	
1.6	Pass	Pass	
1.7	Pass	Pass	
1.8	Pass	Pass	
1.9	Pass	Pass	
1.10	Pass	Pass	

C&S

Test Report

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

C&S

Test Report

Product Name: [Redacted]

Manufacturer: [Redacted]

Issue Date: [Redacted]

C&S

PRODUCTS DESCRIPTION



Isolation

Our broad portfolio of isolation products adopts Chipanalog's capacitive isolation technology based on silicon oxide (SiO_2) 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 optical 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 and gate 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 Isolator

CA-IS36XX
Digital Isolator with Isolated Power Supply

Isolation Interface

CA-IS302X
Isolated I2C

CA-IS305X, CA-IS205X
Isolated CAN

CA-IS306X
Isolated CAN with Isolated Power Supply

CA-IS308X, CA-IS208X
Isolated RS-485/422

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

Isolated Power Supply

CA-IS3105
0.5W Fully Integrated Isolated Power Supply

CA-IS3110
1W Fully Integrated Isolated Power Supply

CA-IS310X
Isolated Error Amplifier

Isolation Amplifier/ADC

CA-IS1200, CA-IS1300, CA-IS1204
Current-sense Isolation Amplifiers

CA-IS130X
Isolated ADC Modulator

Isolated Driver

CA-IS3221
Optocoupler Compatible with Single Channel Isolated Drive

CA-IS3222
Isolated Drive with Dual Channel

PRODUCT MATRIX

INTERFACE

CAN/LIN/SBC

CA-IF1051X
Standard CAN/CAN FD

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

CA-IF4420X
Polarity control CAN Transceiver

CA-IF1021, CA-IF2021, CA-IF1027,
CA-IF2027
LIN Transceiver

CA-IF1028
LIN SBC

RS-485/422/232

12V CS485XX, 30V CA-IF48XX,
70V CA-IF49XX
RS - 485/422 Transceiver

CA-IF3232E, CA-IF3223E, CA-IF3221E
The RS - 232 Transceiver

Others

CA-IF4023
AISG

CA-IF4288, CA-IF4289
Homebus

DRIVER & POWER

Motor Driver / Gate Driver / LED Driver

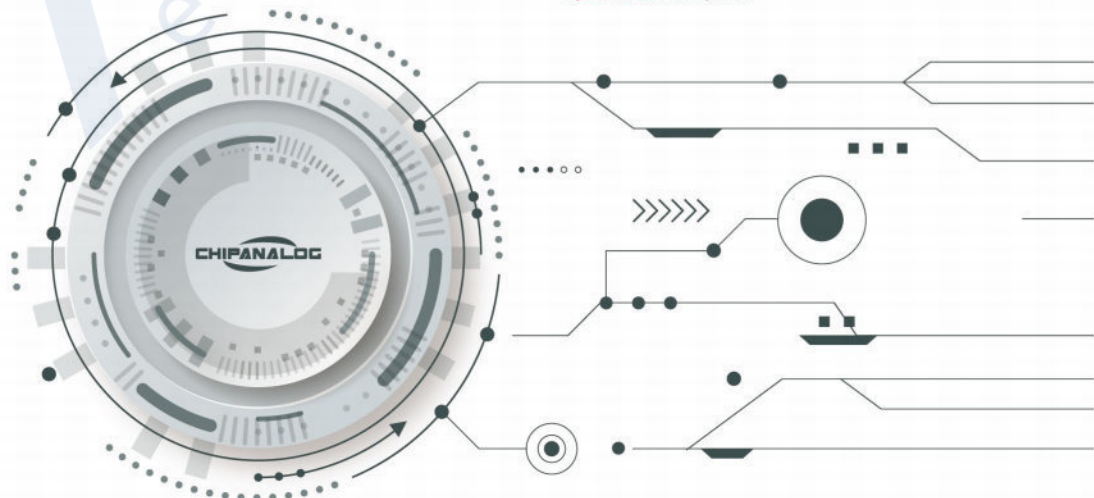
Power Management IC

HPA

High Precision Voltage Reference

High Precision ADC

Operational Amplifier



INDUSTRIAL

Isolation

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

Part Number	Integrate isolated power supply(Y/N)	Number 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-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)

Chipanalogue CA-IS37XX Selection Table-Standard Digital Isolators

Part Number	Number 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-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)

Part Number	Number 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-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	Number 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)

Isolation

Part Number	Number 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-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)

Part Number	Number 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-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-IS3762LN	6	2	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-NB(N)
CA-IS3763LN	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)

Chipanalogue CS817X Selection Table-Low Power Digital Isolators

Part Number	Number 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
CS817x20HS	2	0	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)
CS817x20LS	2	0	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)
CS817x22HS	2	1	3750	150	4	5000	200K	2.25-5.5	160	Push-pull	High	-40~105	SOIC8(S)

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

Part Number	SCK Mode	Insulation Rating (V _{RMS})	CMTI (kV/μs)	Surge Rating (kVpk)	ESD Rating (Two sides, V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IS3020S	Dual Direction	3750	150	8	8000	2	3~5.5	-40~125	SOIC8(S)
CA-IS3021S	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 _{RMS})	CMTI (kV/μs)	Surge Rating (kVpk)	Bus ESD Rating (V)	Data Rate (Mbps)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IS3050G	±58	5000	150	10	4000	1	2.5-5.5	-40~125	SOIC8-WB(G)
CA-IS3052G	±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-IS3050U	±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 _{RMS})	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 _{RMS})	CMTI (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 _{RMS})	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)

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

Part Number	Output Power (W)	Operating Voltage Range (V)	Insulation Rating (V _{RMS})	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)	Isolation Voltage (V _{RMS})	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

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)	Normal Gain	GERR (%)	Isolation Voltage (V _{RMS})	CMTI (kV/μs)	Output Noise (mV _{RMS})	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 (%)	Isolation 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-IS1306M25G	3-5.5	2.7-5.5	±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	2.7-5.5	±250	-98	-108	5-21 IN	±0.3	5000	150	Uncode	6.25	HBM ±4000 CDM ±2000	-40~125	SOIC16-WB(W)

Interface

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

Part Number	Isolated (Y/N)	Operation Mode	Data Rate (Mbps)	common mode range (V)	Fault protection (V)	HBM ESD Other PIN (±KV)	HBM ESD Bus Pin (±KV)	Operating Voltage Range (V)	Temperature Range (°C)	Package
CA-IF4888HS	N	Half Duplex	0.5	-15~15	-30~30	8	30	3~5.5	-40~125	SOIC8
CA-IF4805HS	N	Half Duplex	0.5	-15~15	-30~30	8	30	3~5.5	-40~125	SOIC8
CA-IF4820HS	N	Half Duplex	20	-15~15	-30~30	8	30	3~5.5	-40~125	SOIC8
CA-IF4820HM	N	Half Duplex	20	-15~15	-30~30	8	30	3~5.5	-40~125	MSOP8
CA-IF4820HD	N	Half Duplex	20	-15~15	-30~30	8	30	3~5.5	-40~125	DFN8
CA-IF4820FS	N	Full Duplex	20	-15~15	-30~30	8	15	3~5.5	-40~125	SOIC8
CA-IF4850HS	N	Half Duplex	50	-15~15	-30~30	8	30	3~5.5	-40~125	SOIC8
C548505S	N	Full Duplex	0.5	-7~12	-7~12	8	20	3~5.5	-40~125	SOIC8
C548520S	N	Half Duplex	20	-7~12	-7~12	8	20	3~5.5	-40~125	SOIC8
C548505M	N	Half Duplex	0.5	-7~12	-7~12	8	20	3~5.5	-40~125	MSOP8
C548520M	N	Half Duplex	20	-7~12	-7~12	8	20	3~5.5	-40~125	MSOP8
C548505D	N	Half Duplex	0.5	-7~12	-7~12	8	20	3~5.5	-40~125	DFN8
C548520D	N	Half Duplex	20	-7~12	-7~12	8	20	3~5.5	-40~125	DFN8

Chipanalog CA-IF1051 Selection Table-CAN Transceiver

Part Number	VIO	Remote Wakeup	Data Rate (Mbps)	Common Mode 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	N	N	5	-30~30	-70~70	4	6	4.5~5.5	/	-55~150	SOIC8
CA-IF1051S	N	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

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

AUTOMOTIVE

Isolation

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

Part Number	Number of Channels	Number of reversed channels	Insulation Rating (V _{UIS})	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-IS3721LW-Q1	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	Low	-40~125	SOIC16-WB(W)
CA-IS3741HW-Q1	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Push-pull	High	-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 Mode 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	N	N	5	-30~30	-58~58	4	8	4.5~5.5	/	-55~150	SOIC8
CA-IF1051VS-Q1	Y	N	5	-30~30	-58~58	4	8	4.5~5.5	2.5~5.5	-55~150	SOIC8
CA-IF1042S-Q1	N	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	N	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	1.8~5.5	-55~150	SOIC8

Chipanalog CA-IF1021-Q1 Selection Table-LIN Transceiver

Part Number	VIO	Remote Wakeup	Data Rate (Kbps)	Common Mode 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	N	Y	20	/	-58~58	2	4	5.5~27	/	-55~150	SOIC8



ISOLATION

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 5kV_{RMS} 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

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

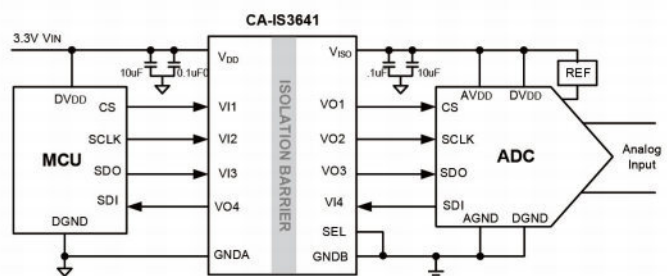
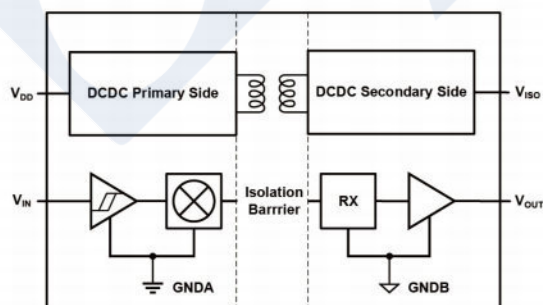
Industrial automation systems

Motor control

Medical equipment

Test and Measurement

Simplified Schematic



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 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 (SiO_2) insulation barrier, the integrated Schmitt trigger on each input provide excellent noise immunity.

The CA-IS37XX family devices are specified over the $-40^{\circ}C$ to $+125^{\circ}C$ 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 $3750 V_{RMS}$ isolation rating (narrow body packages) and up to $5000 V_{RMS}$ isolation rating (wide body packages)
- ◆ $\pm 150 kV/\mu s$ 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 $V_{DD} = 5.0V$
- ◆ 6.6mA per channel at 100Mbps with $V_{DD} = 5.0V$

Best in Class Propagation Delay and Skew

- ◆ 8ns typical propagation delay
- ◆ 1ns pulse width distortion
- ◆ 2ns propagation delay skew (chip -to- chip)
- ◆ 5ns minimum pulse width

No Start-Up Initialization Required

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: $-40^{\circ}C$ to $125^{\circ}C$

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

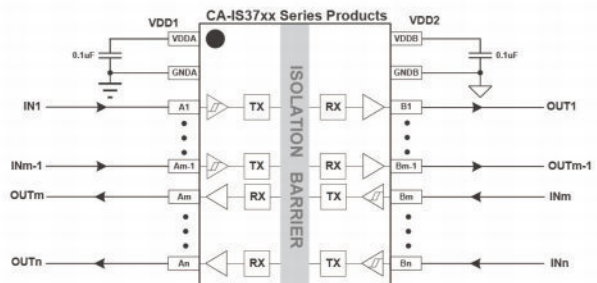
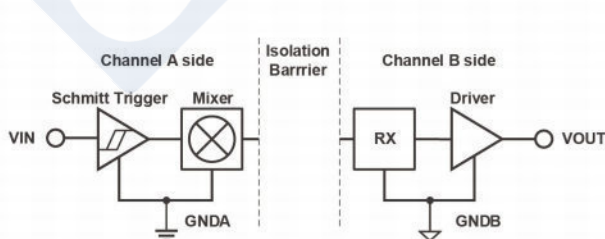
Motor Control

Medical Systems

Isolated Power Supplies

Solar Inverters

Simplified Schematic



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 $70\mu\text{A}$ per channel low quiescent current. These isolated CMOS digital I/Os feature up to 3kV_{RMS} isolation rating and $\pm 150\text{ kV}/\mu\text{s}$ 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 (SiO_2) insulation barrier.

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

Key Features

Ultra Low Power

- ◆ $99\mu\text{A}$ per channel at DC, 3.3V
- ◆ $117\mu\text{A}$ per channel at 10kbps, 3.3V
- ◆ $221\mu\text{A}$ 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 3kV_{RMS} isolation rating
- ◆ $\pm 150\text{ kV}/\mu\text{s}$ 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:

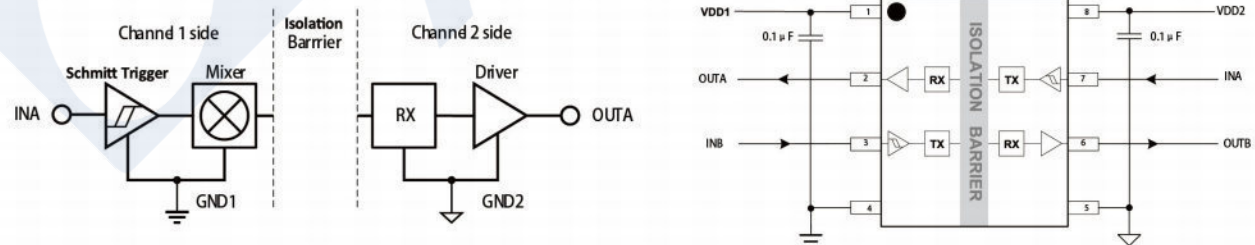
- ◆ SOIC8(S) narrow body

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

Applications

- Li+ battery pack protection
- Home appliances
- Industrial automation systems
- Medical electronics
- Isolated switch mode supplies
- Isolated ADC, DAC
- Motor control
- Power inverters

Simplified Schematic



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 $\pm 150\text{kV}/\mu\text{s}$ 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.

Key Features

Bidirectional Data Transfer from DC to 2.0MHz

Robust Galvanic Isolation of Digital Signals

- ◆ High lifetime: >40 years
- ◆ Withstands up to 3.75kV_{RMS} (narrow-body package) and 5kV_{RMS} (wide-body packages) isolation rating
- ◆ Narrow-body and wide-body packages (4mm or 8mm creepage and clearance)
- ◆ $\pm 150\text{ kV}/\mu\text{s}$ typical CMTI
- ◆ Schmitt trigger inputs for high noise immunity
- ◆ High electromagnetic immunity and withstands $\pm 10\text{kV}$ surge
- ◆ $\pm 8\text{kV}$ 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

RoHS-Compliant Packages

- ◆ Narrow-body SOIC8-NB(S) package
- ◆ Wide-body SOIC8-WB(G) package
- ◆ Wide-body SOIC16-WB(W) package

Applications

I²C, SMBus, PMBus™ Interfaces

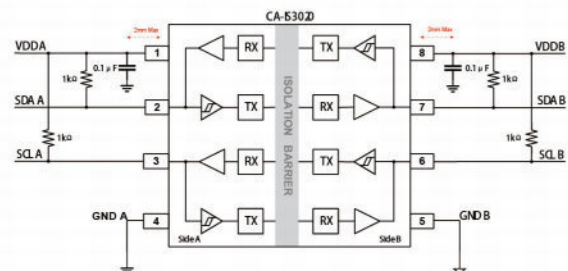
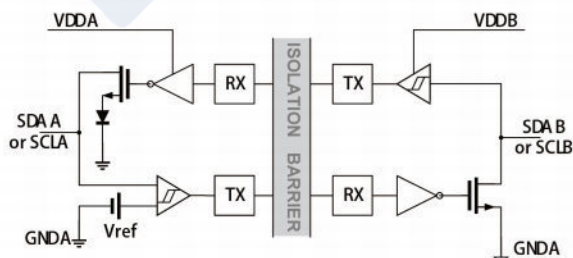
Motor control systems

Medical Equipment

Battery Management

Instrumentation

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 $\pm 40V$ 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 $\pm 12V$.

All devices operate over $-40^{\circ}C$ to $+125^{\circ}C$ 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

- ◆ 3.75kV_{RMS} and 5kV_{RMS} withstand isolation voltage for 60s
- ◆ $\pm 150kV/\mu s$ typical CMTI
- ◆ $\pm 40V$ fault-tolerant CANH and CANL
- ◆ $\pm 12V$ 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: $-40^{\circ}C$ to $125^{\circ}C$

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

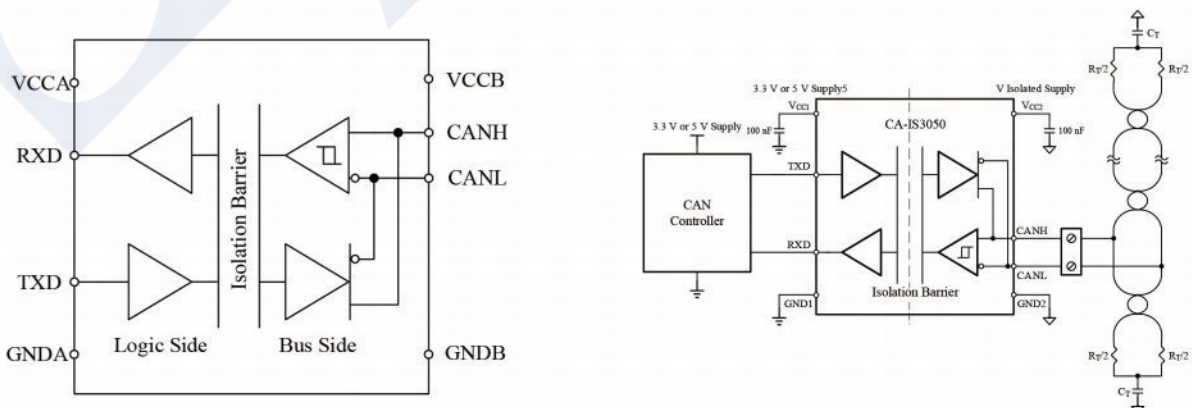
Transportation

Medical

Telecom

HVAC

Simplified Schematic



CA-IS1044S

Isolated CAN Transceivers with $\pm 58V$ 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 (SiO_2) 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 $\pm 58V$ fault protection on the CAN bus lines and $\pm 30V$ input common-mode range (CMR). The CA-IS1044S is in a standard 8-pin SOIC package and operates over the $-40^{\circ}C$ to $+125^{\circ}C$ temperature range.

Key Features

Meets the ISO 11898-2 physical layer standards

Integrated protection increases robustness

- ◆ $3.0 kV_{RMS}$ withstand isolation voltage for 60s
- ◆ $\pm 100kV/\mu s$ typical CMTI
- ◆ $\pm 58V$ fault-tolerant CANH and CANL
- ◆ $\pm 30V$ 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

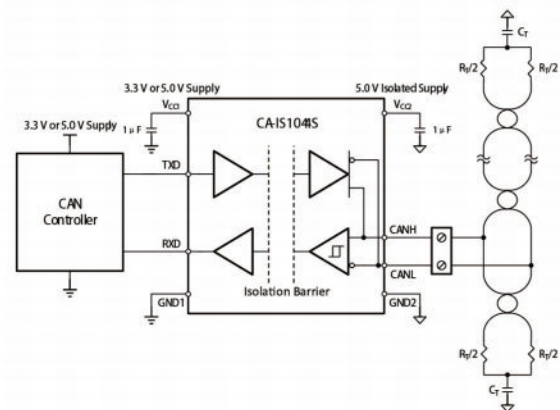
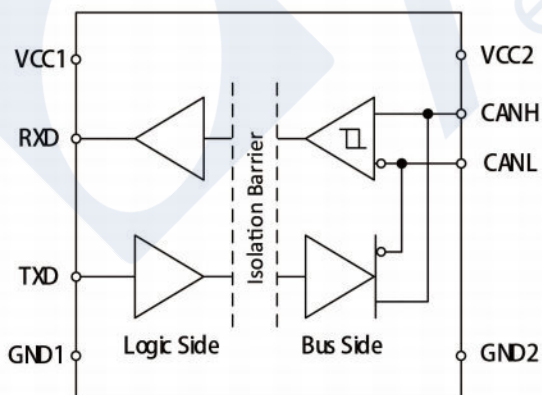
$-40^{\circ}C$ to $+125^{\circ}C$ Operating Temperature

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 $\pm 40V$ 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

- ◆ 5.0kV_{RMS} withstand isolation voltage for 60s (galvanic isolation)
- ◆ $\pm 150kV/\mu s$ typical CMTI
- ◆ $\pm 40V$ fault-tolerant CANH and CANL
- ◆ $\pm 12V$ 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-

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

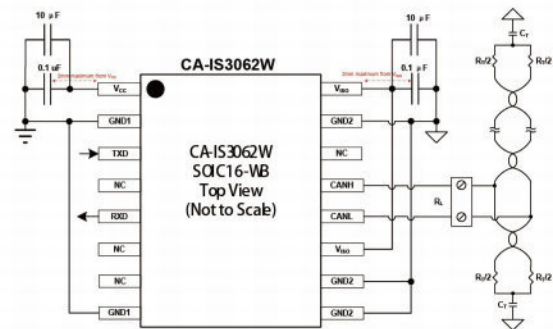
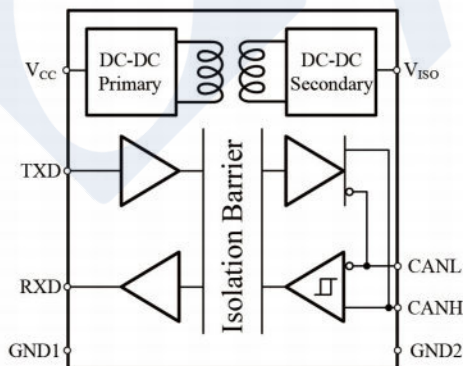
Security and Protection System

Transportation

Medical

Telecom

Simplified Schematic



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

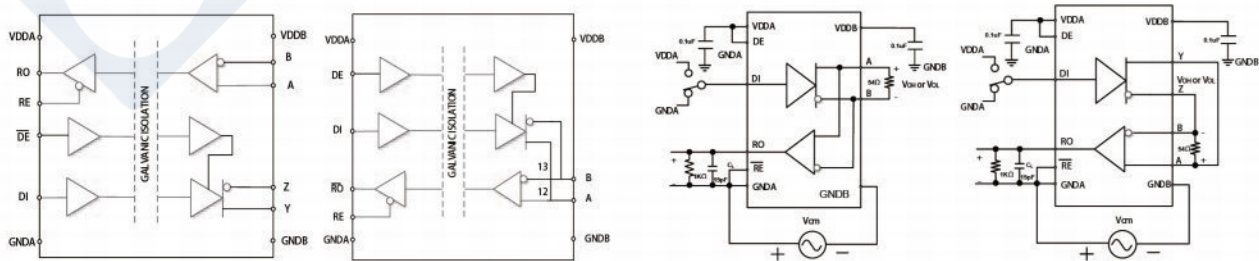
Grid infrastructure

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

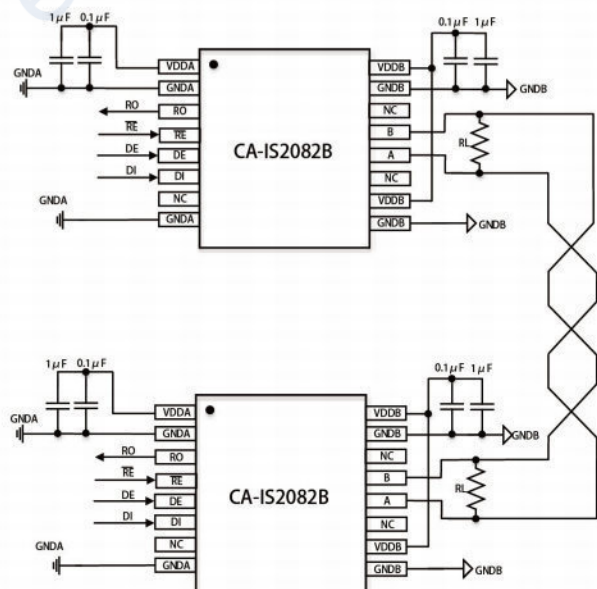
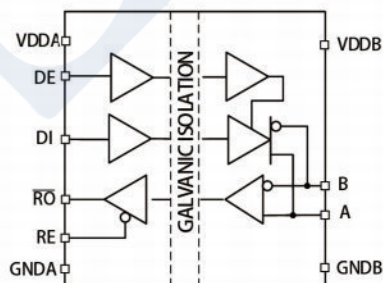
output state

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

Applications

- Industrial automation equipment**
- Grid infrastructure**
- Solar inverter**
- Motor drivers**
- HVAC**

Simplified Schematic



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 ±150kV/μs 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 ($V_{ISO} \leq V_{CC}$)
- ◆ High integration with internal transformer
- ◆ Soft-start reduces input inrush current
- ◆ Overload and short-circuit protection
- ◆ Thermal shutdown

Integrated protection for robust communication

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

IEC 61000-4-2 Contact Discharge ESD protection on bus I/O, ±6kV HBM ESD protection on logic I/O

- ◆ 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

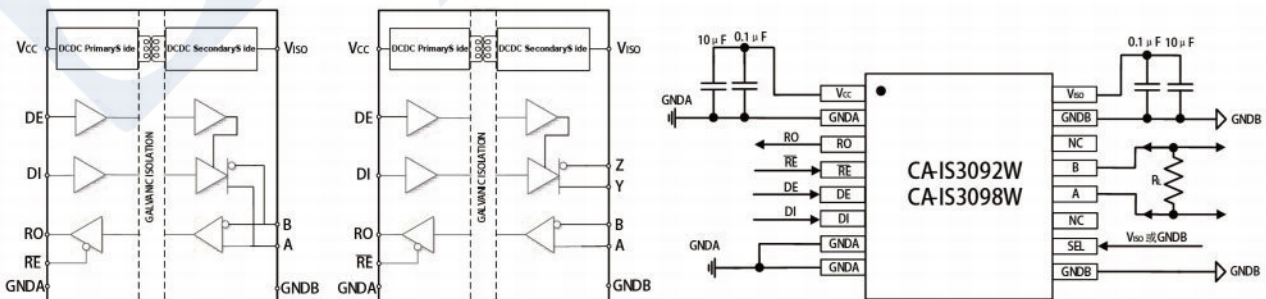
Motor control systems

Medical Equipment

Battery Management

Instrumentation

Simplified Schematic



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 2.5kV_{RMS} galvanic isolation and $\pm 150\text{kV}/\mu\text{s}$ 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 $+125^{\circ}\text{C}$ 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 ($V_{ISO} \leq V_{CC}$)
- ◆ High integration with internal transformer
- ◆ Soft-start reduces input inrush current
- ◆ Overload and short-circuit protection
- ◆ Thermal shutdown

Integrated Protection for Robust Communication

- ◆ 2.5kV_{RMS} withstand isolation voltage for 60s (galvanic isolation)
- ◆ $\pm 150\text{kV}/\mu\text{s}$ typical CMTI

◆ High lifetime: >40 years

◆ $\pm 8\text{kV}$ Human Body Model (HBM) ESD protection and $\pm 16\text{kV}$ 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

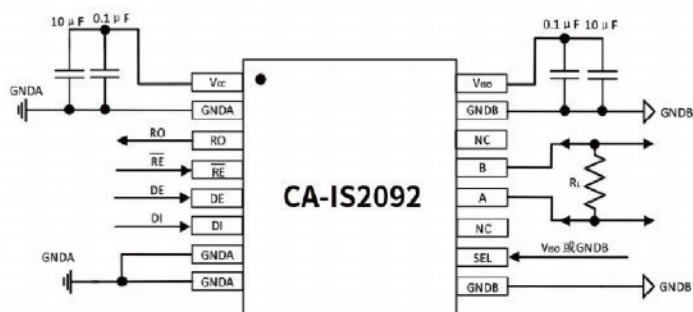
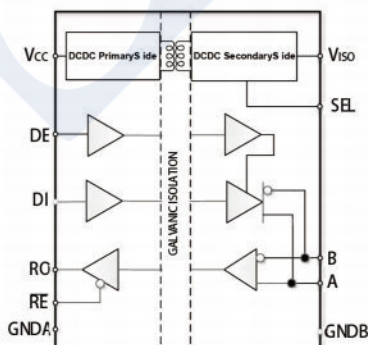
Grid infrastructure

Solar inverter

Motor drivers

HVAC

Simplified Schematic



CA-IS398X

Isolated Octal Industrial Digital Input

The CA-IS398x family of isolated octal digital inputs are optimized for industrial 24V digital input applications. All devices can be configured for Type 1, Type 2, or Type 3 inputs with a few external components and each channel can sink and source current. These devices operate over the supply range of 2.25V to 5.5V on logic side, no power supply required on field side. The logic output level is set by supply voltage independently, easy to connect with 2.5V, 3.3V and 5V controller interface. For robust operation in industrial environments, each input of the CA-IS398x with parallel outputs includes a glitch and debounce filters with fixed delay time; The CA-IS3980S with serializer features programmable debounce filters, allow flexible debouncing and filtering of sensor outputs based on the application. For systems with more than eight sensor inputs, CA-IS3980S is capable of daisy-chaining multiple devices and have up to 128 inputs sharing the same isolated SPI interface.

The CA-IS398x family of devices are specified over -40°C to +125°C operating temperature range and are available in 20-pin SSOP package.

Key Features

Accepts Industry Standard Input Types

- ◆ Compliant to IEC 61131-2 Input Types 1, 2, and 3

High Integration

- ◆ Eight input channels with serializer (CA-IF3980S)
- ◆ Eight input channels with parallel-output s (CA-IF398xP)

Support up to 2Mbps Data Rates

Integrated Digital Glitch and Debounce Filters with 0 to 100ms Selectable Delay Time

High Transient Immunity:

- ◆ $\pm 300\text{kV}/\mu\text{s}$ CMTI for the low-speed channels
- ◆ $\pm 50\text{kV}/\mu\text{s}$ CMTI for the high-speed channels

2500VRMS Integrated Isolation Reduces BOM and Footprint

SPI-Compatible Serial Interface (CA-IF3980S only)

2.25V to 5.5V Single Supply , Eliminates the

Need For Field-side Power Supply

-40°C to 125°C Ambient Operating Temperature

8.66mm x 3.91mm 20-pin SSOP Package

Safety Regulatory Approvals

- ◆ DIN VVDE V 0884-10 basic isolation certification
- ◆ UL1577 certification, 2500 VRMS insulation

Applications

Digital Input Modules for PLCs

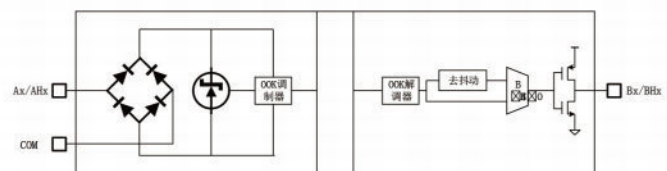
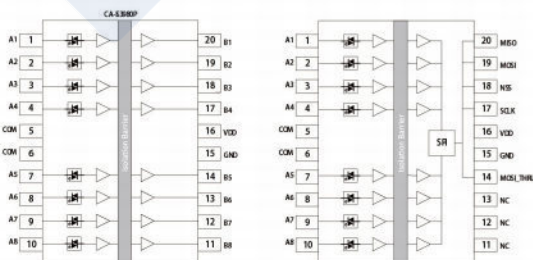
Industrial, Building, and Process Automation

Motor Control

CNC Control

Industrial Data Acquisition

Simplified Schematic



CA-IS3105W

5kV_{RMS} 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.

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
- ◆ ±10 kV surge tolerant

Excellent Electromagnetic Compatibility

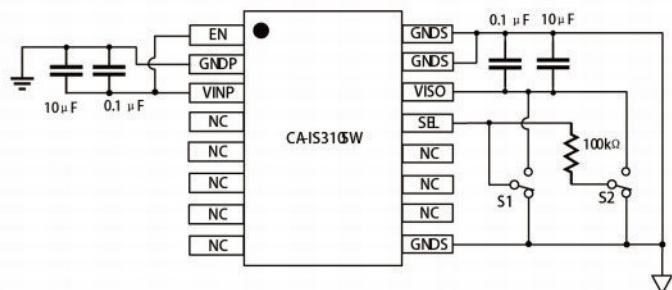
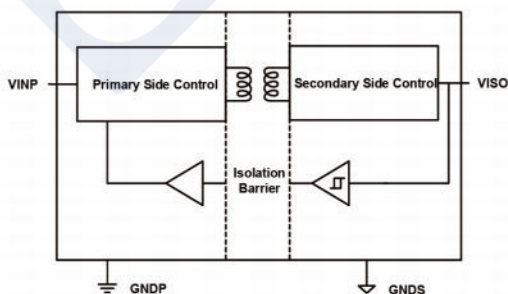
Wide Operating Temperature Range: -40°C to

125°C
SOIC16-WB Package

Applications

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

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 2.5kV_{RMS} (CA-IS3101B) and 5kV_{RMS} (CA-IS3102W) isolation rating
- ◆ ±150 kV/μs typical CMTI

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

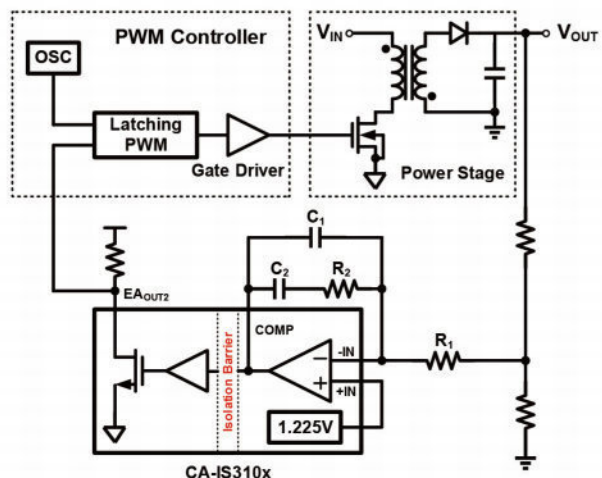
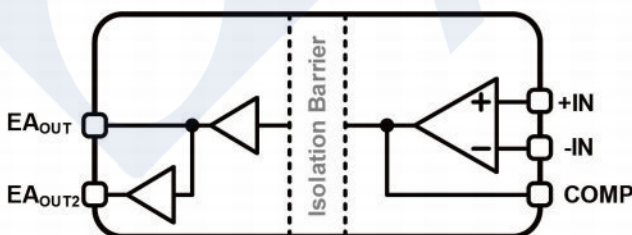
Industrial, Building, and Process Automation

Motor Control

CNC Control

Industrial Data Acquisition

Simplified Schematic



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 ±4μV/°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

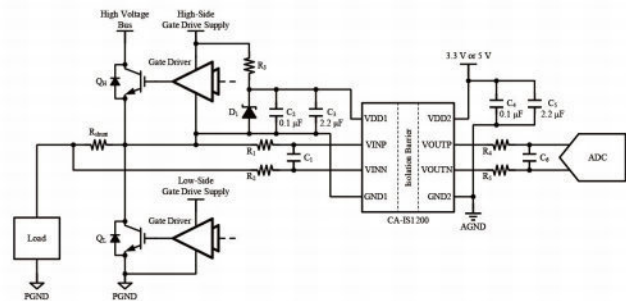
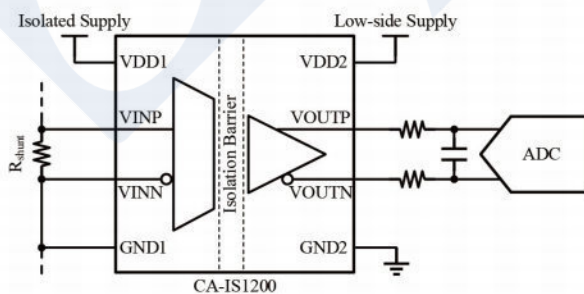
Wide Operating Temperature Range: -40°C to 125°C

8-pin SOP package (DUB8)

Applications

Industrial Motor Controls and Drives
Isolated Power Supplies
UPS

Simplified Schematic



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 ±250mV

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

Low Input Offset Voltage and Offset Drift

◆ CA-IS1300G05: ±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 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 5000 V_{RMS} 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 Wide Body Package

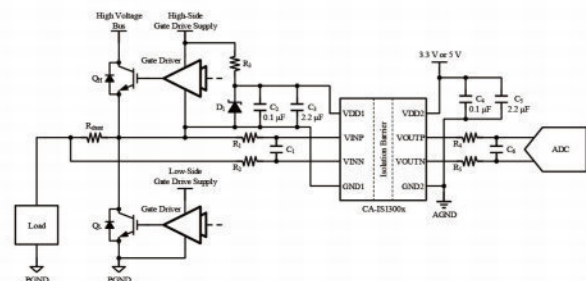
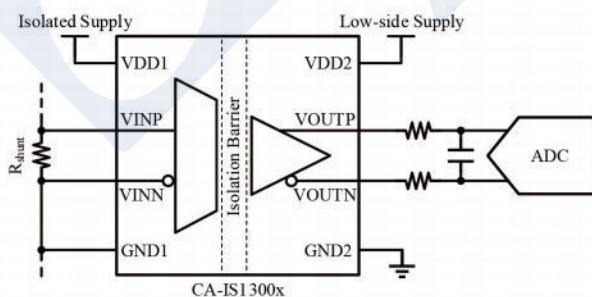
Applications

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: $\pm 150\mu\text{V}$ (max) @ 25°C input offset voltage
- ◆ CA-IS1306: $\pm 100\mu\text{V}$ (max) @ 25°C input offset voltage
- ◆ $\pm 3.5\mu\text{V}/^\circ\text{C}$ (max) input offset tempco

Low Gain Error and Drift

- ◆ CA-IS1305: $\pm 0.3\%$ (max) @ 25°C gain error
- ◆ CA-IS1306: $\pm 0.2\%$ (max) @ 25°C gain error
- ◆ $\pm 40\text{ppm}/^\circ\text{C}$ (max) gain drift

Excellent AC Performance

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

16-Bit Resolution with No Missing Codes

Robust Isolation Barrier

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

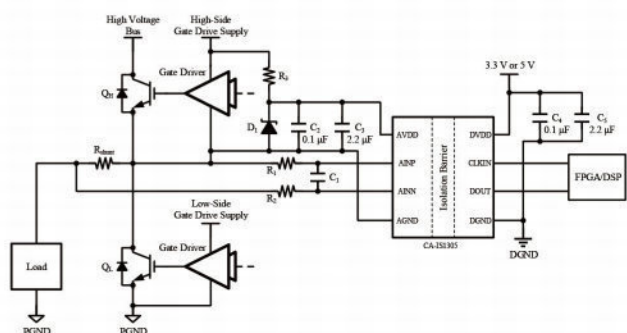
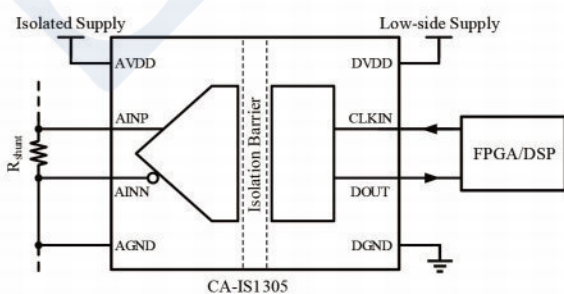
Fault Diagnostic Functions Improve System Safety
Wide Operating Temperature Range: -40°C to 125°C

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

Applications

Industrial Motor Controls and Drives
Isolated Power Supplies
UPS

Simplified Schematic



CA-IS1204

5kV_{RMS} 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

- ◆ ± 1 mV (max) input offset voltage
- ◆ $\pm 2\%$ (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/ μ s 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

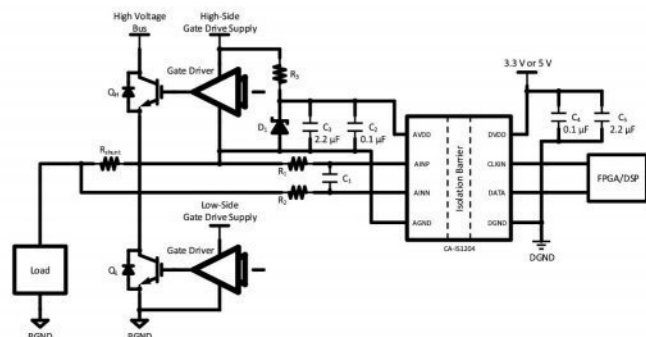
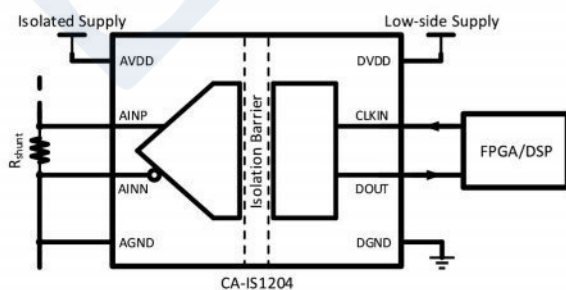
Applications

Industrial Motor Controls and Drives

Isolated Power Supplies

Frequency Inverters

Simplified Schematic





INTERFACE

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 x 3mm, 16-pin QFN and is fully specified for operation over -40°C to +125°C extended temperature range.

Key Features

Receiver Offers a Wide Input Dynamic Range

◆ -15dBm to +5dBm in 50Ω

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

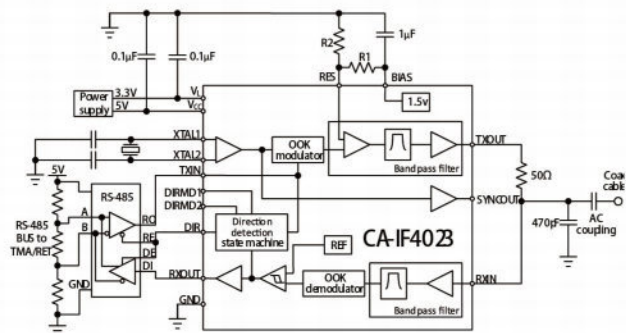
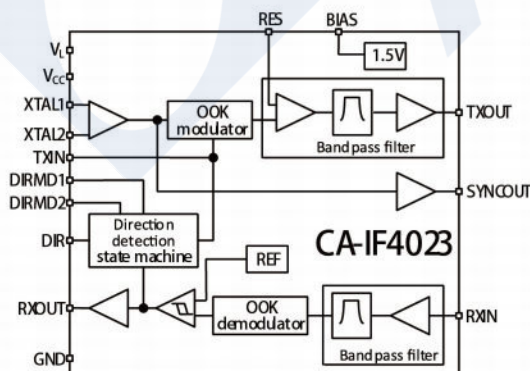
-40°C to +125°C Operating Temperature Range

Small, 3mm x 3mm, 16-pin QFN Package

Applications

Industrial automation equipment
Grid infrastructure
Solar inverter
Motor drivers
HVAC

Simplified Schematic



CA-IF4888

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

The CA-IF4888 half-duplex $\pm 30\text{kV}$ 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 $\pm 30\text{V}$ fault protection for overvoltage conditions on the communication bus lines that ensure robust protection on the bus. It also features $\pm 15\text{V}$ 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 $+125^\circ\text{C}$ 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

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

Low Power

- ◆ $960\mu\text{A}$ (max.) @ receive mode
- ◆ Shutdown current: $< 5\mu\text{A}$

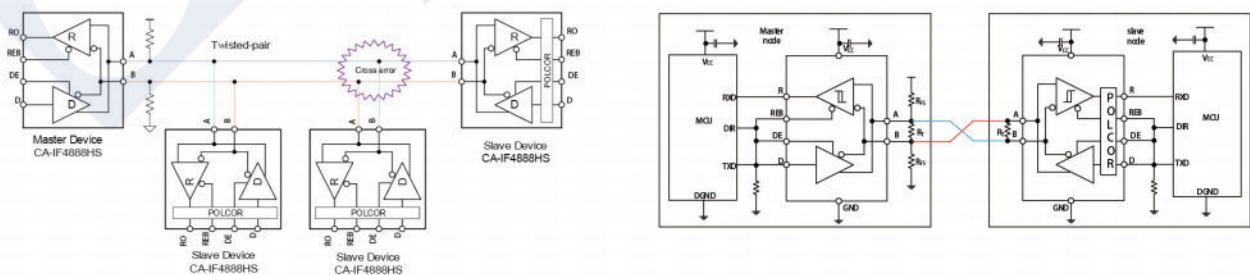
Wide Operating Temperature Range: -40°C to 125°C

8 pin SOIC Package

Applications

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

Simplified Schematic



CA-IF4805/20/50

RS485/RS422 Transceivers with $\pm 30\text{kV}$ 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 $\pm 30\text{V}$ fault protection for overvoltage conditions on the communication bus lines that ensure robust protection on the bus. They also feature $\pm 15\text{V}$ 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 $\pm 15\text{kV}$ (for the full-duplex parts) and $\pm 30\text{kV}$ (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 $+125^\circ\text{C}$ 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
- ◆ 3V to 5.5V supply voltage

Integrated Protection for Robust Communication

- ◆ $\pm 30\text{V}$ fault protection range on driver outputs/receiver inputs
- ◆ Common-mode voltage range: $\pm 15\text{V}$
- ◆ $\pm 15\text{kV}$ Human Body Model ESD protection for the full-duplex devices (CA-IF48xxF_)
- ◆ $\pm 30\text{kV}$ Human Body Model ESD protection for the half-duplex devices (CA-IF48xxH_)
- ◆ Short-circuit protection
- ◆ Thermal shutdown
- ◆ True fail-safe guarantees known receiver

output state

Low Power

- ◆ $960\mu\text{A}$ (max.) @ receive mode
- ◆ Shutdown current: $< 5\mu\text{A}$

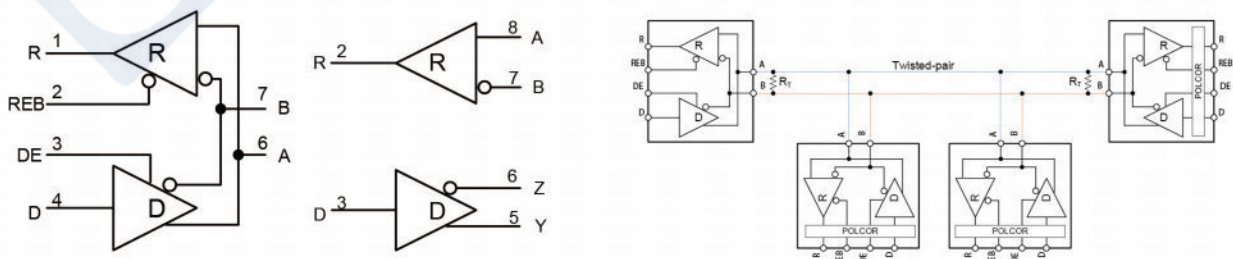
Wide Operating Temperature Range: -40°C to 125°C

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

Simplified Schematic



CS48505/48520

RS485/422 Transceivers with $\pm 20\text{kV}$ 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 $\pm 20\text{kV}$ 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, guaranteeing 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
- ◆ $\pm 20\text{kV}$ Human Body Model ESD Protection and $\pm 4\text{kV}$ 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

- ◆ $|V_{OD}| > 2.1\text{V}$ @ 5V Supply Voltage

Low Power

- ◆ Low Supply Current (0.95mA, typ.)

- ◆ Shutdown Current $< 5\mu\text{A}$

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

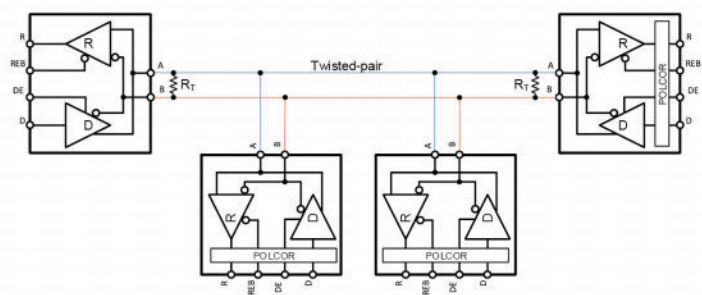
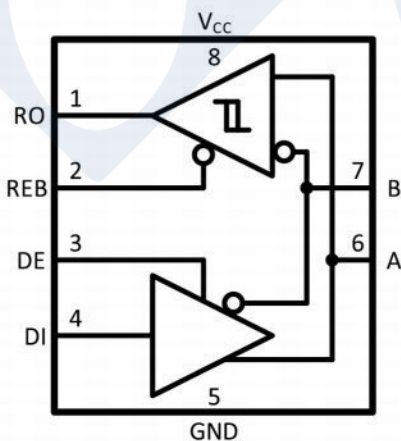
Video Surveillance

Smart Meters

Process Control

Telecommunication Equipment

Simplified Schematic



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

- ◆ ±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

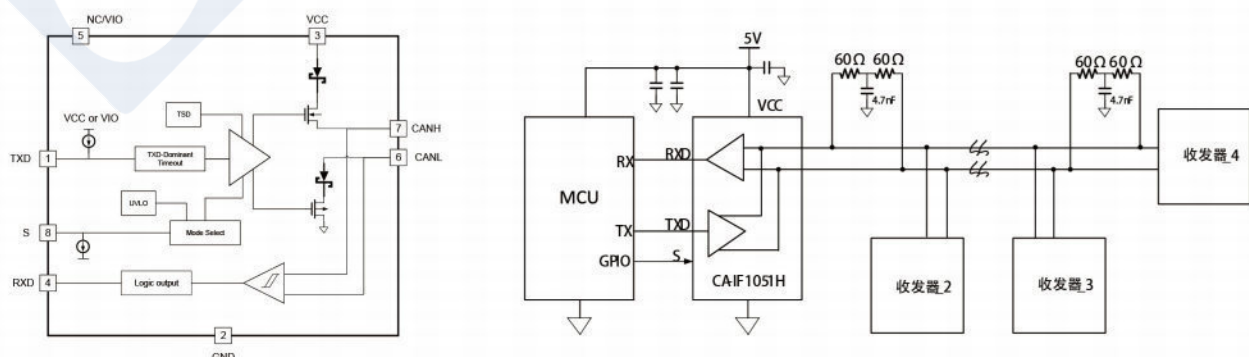
- ◆ Transmitter dominant timeout prevents lockup, data rates down to 4kbps
- ◆ Thermal shutdown

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





AUTOMOTIVE

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 electro-magnetic 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
- ◆ 1ns pulse width distortion
- ◆ 2ns propagation delay skew (chip-to-chip)
- ◆ 5ns minimum pulse width

No Start-Up Initialization Required

Wide-body SOIC16-WB(W) package

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

Safety Regulatory Approvals

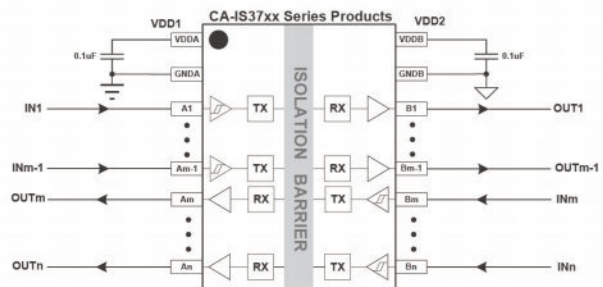
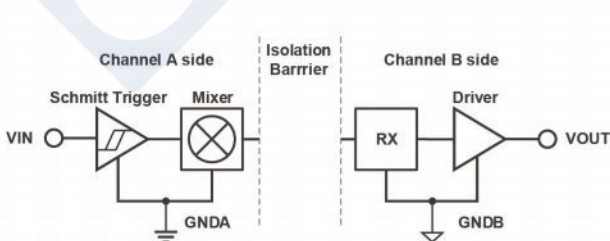
- ◆ VDE 0884-11 reinforced isolation
- ◆ UL certification according to UL1577
- ◆ IEC 62368-1, IEC 61010-1, GB 4943.1-2011 and GB 8898-2011 certifications

AEC-Q100 (Grade 1) Certified

Applications

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

Simplified Schematic



CA-IF1051S/VS-Q1

5Mbps, $\pm 58V$ 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 $\pm 58V$ 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 $\pm 30V$, 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 t_{DOM} , 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 $-55^{\circ}C$ to $+150^{\circ}C$ 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

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

lockup, data rates down to 5.5kbps

- ◆ Thermal shutdown

2.5V to 5.5V Logic-Supply (V_{IO}) Range (CA-IF1051VS-Q1 only)

$-55^{\circ}C$ to $150^{\circ}C$ Junction Temperatures Range

8 pin SOIC Package

AEC-Q100 (Grade 1) Certified

Applications

Hybrid, electric & conventional powertrain

Industrial automation

Building automation

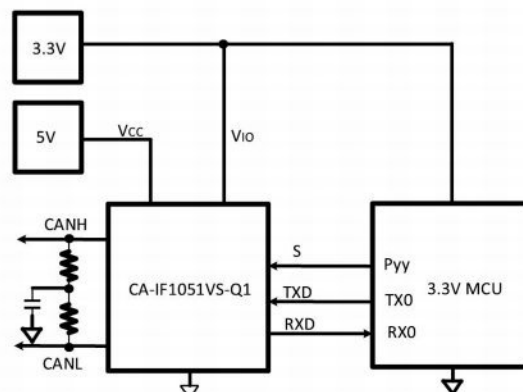
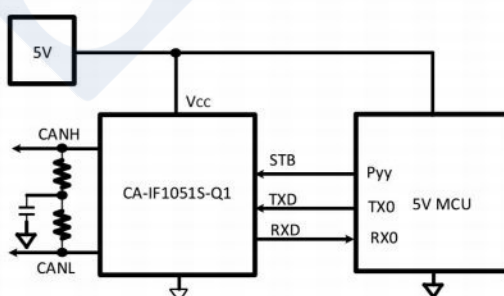
HVAC systems

Distribution automation

Vending machines

Security systems

Simplified Schematic



CA-IF1042S-/VS-Q1

Automotive CAN Transceivers with $\pm 70V$ 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 $\pm 70V$ 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 control 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 $-55^{\circ}C$ to $+150^{\circ}C$ 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 glitch free operation ◆ on bus and RXD output

Integrated protection increases robustness

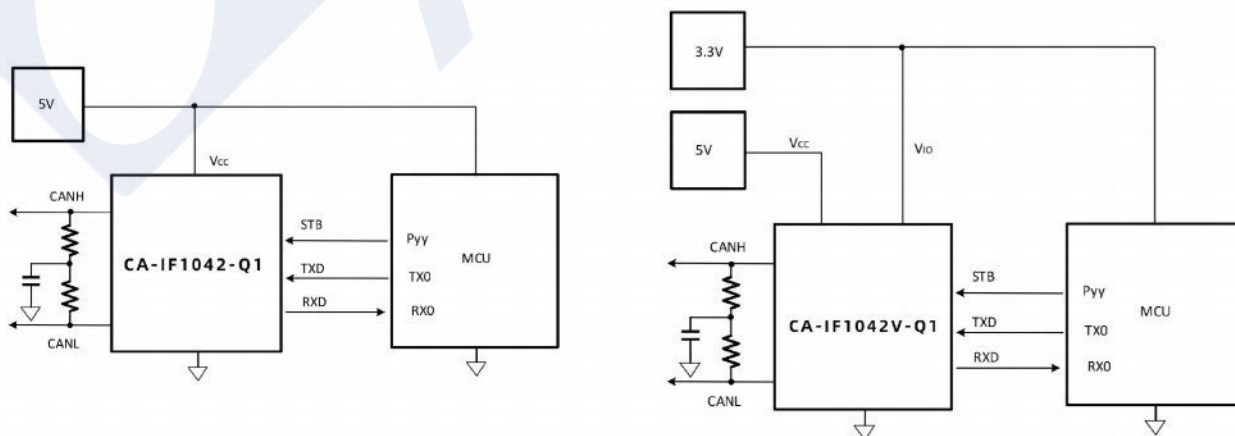
- ◆ $\pm 70V$ fault-tolerant CANH and CANL
- ◆ $\pm 30V$ extended common-mode input range (CMR)
- ◆ Undervoltage protection on VCC and VIO supply terminals
- ◆ Transmitter dominant timeout prevents lockup, data rates down to 4 kbps

- ◆ Thermal shutdown
- ◆ Typical loop delay: 160ns
- ◆ 3.0V to 5.5V Logic-Supply (VIO) Range (CA-IF-1042Vx-Q1 only)
- ◆ $-55^{\circ}C$ to $150^{\circ}C$ 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

Simplified Schematic



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 $\pm 58V$ 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 $-40^{\circ}C$ to $+125^{\circ}C$ 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

- ◆ $\pm 58V$ fault-tolerant CANH and CANL
- ◆ $\pm 30V$ extended common-mode input range (CMR)
- ◆ Transmitter dominant timeout prevents lockup
- ◆ 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

$-40^{\circ}C$ to $+125^{\circ}C$ operating temperature

Available in SOIC(8) and DFN(8) packages

AEQ-100 Grade 1 qualified

Applications

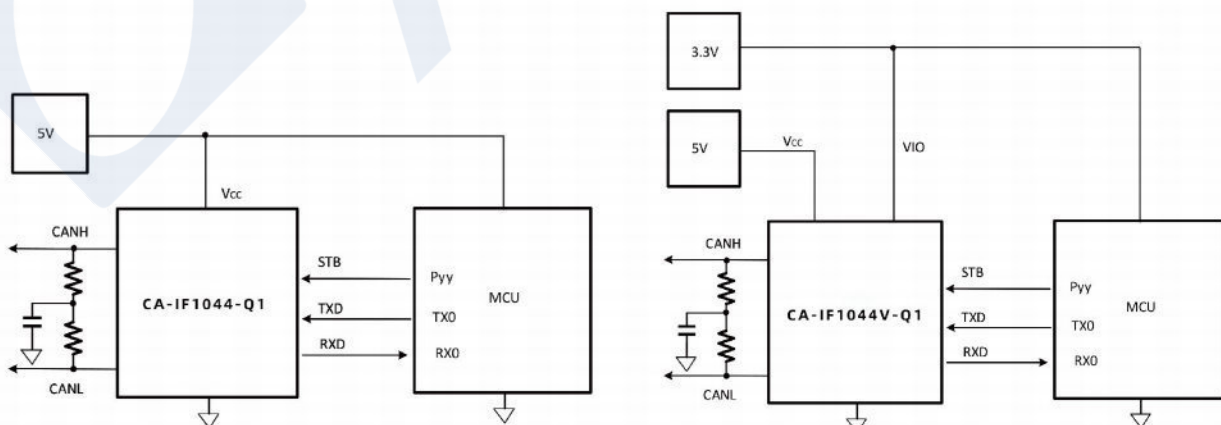
Automotive gateway

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) communication 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 consumption 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 disconnection, the device prevents back-feed current through LIN to the supply input.

Key Features

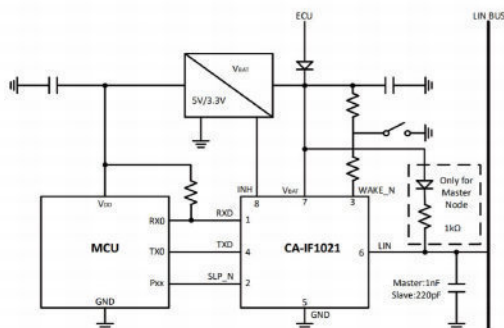
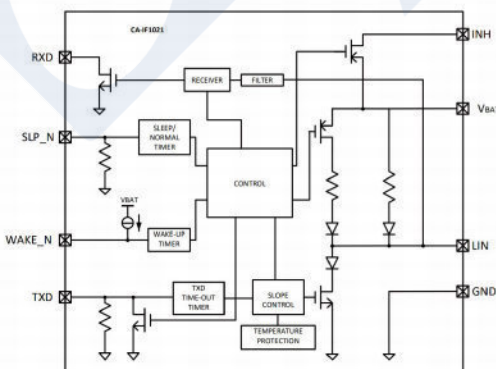
- AEC Q-100 qualified for automotive applications
- Meets LIN2.0,LIN2.1,LIN2.2,LIN2.2A and ISO 17987-4:2016(12V) physical layer (EPL) standards
- Compliant to SAE J2602-1 and SAE J2602-2 LIN physical layer specification
- Support up to 12V Applications
- Wide Operating Supply Range:
 - ◆ 5.5V to 27V supply range (V_{BAT})
- 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

- 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

Simplified Schematic



Important Statement

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