

# CHIPANALOG SOLUTIONS FOR AUTOMOTIVE APPLICATIONS



**CHIPANALOG**

## About us

Shanghai Chipanalog Microelectronics Co., Ltd. is a high-tech company focusing on R&D, design and sales of high-end analog semiconductor. Our broad portfolio includes isolation and interface, driver and power, high-performance analog and  $\mu$ MiC (micro-Module in Chip) etc. product lines. These products have been used in industrial control, power energy, communication & computing, automotive applications worldwide.

Founded in 2016, Chipanalog is headquartered in Shanghai. After years of development, we have become a well-known supplier of high-end analog solutions, such as isolation and interfaces. Chipanalog serves more than 3,000 customers worldwide with extensive and high quality analog products.

# SEMICONDUCTORS SUPPLIER





# ISO26262 Certification



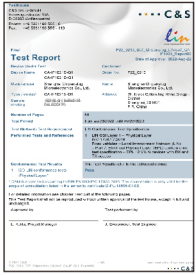
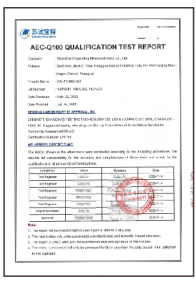
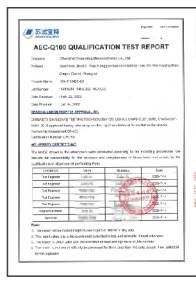
# CERTIFICATIONS AND STANDARDS



## CNAS Laboratory Accreditation Certification

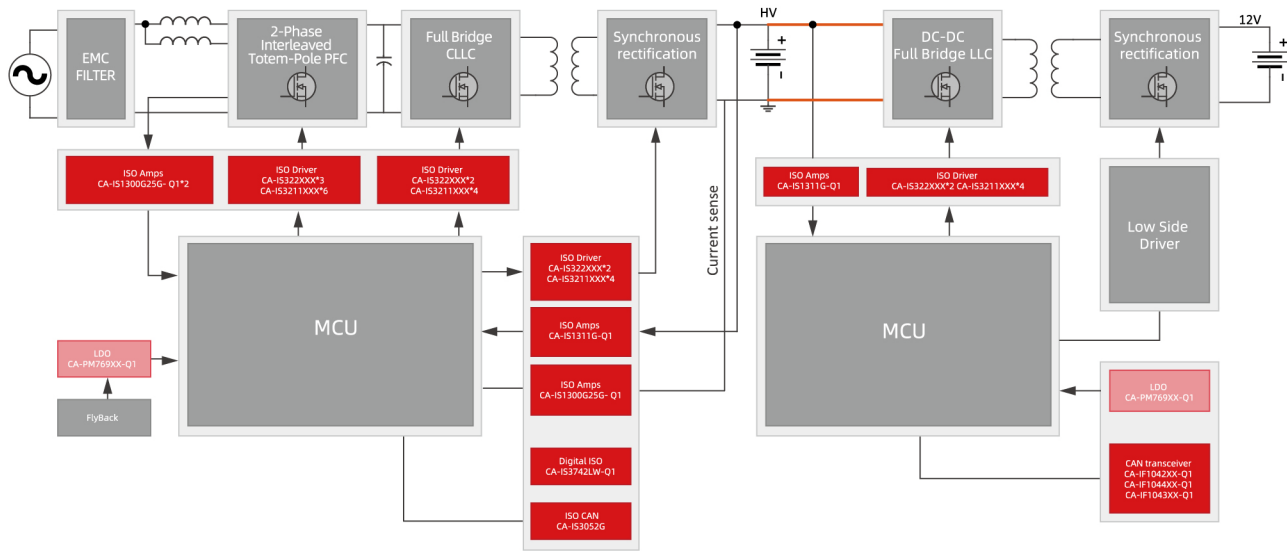
## Iso-relevant Certification

## Auto-relevant Certification





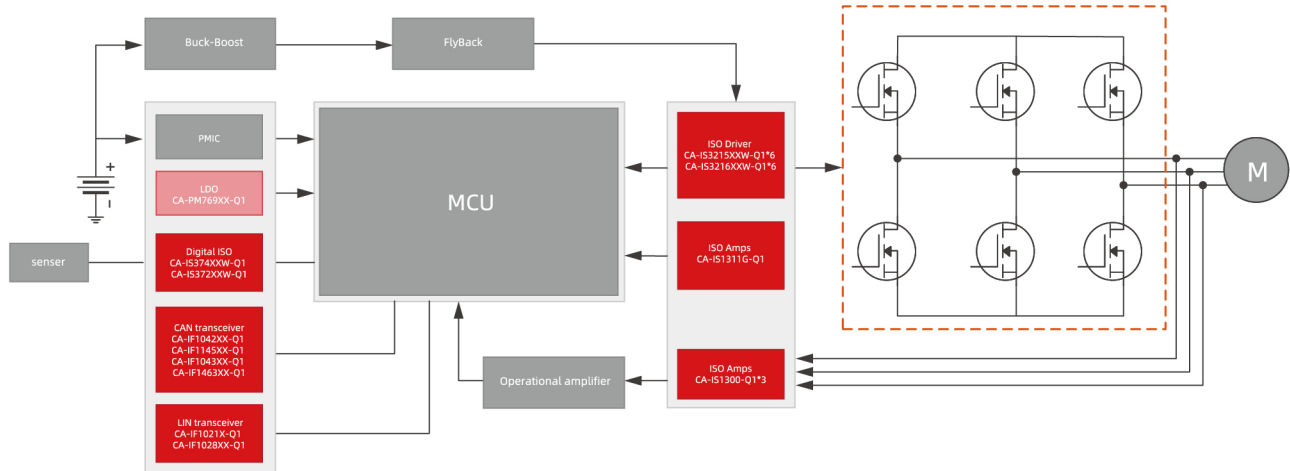
# Automotive OBC DC-DC



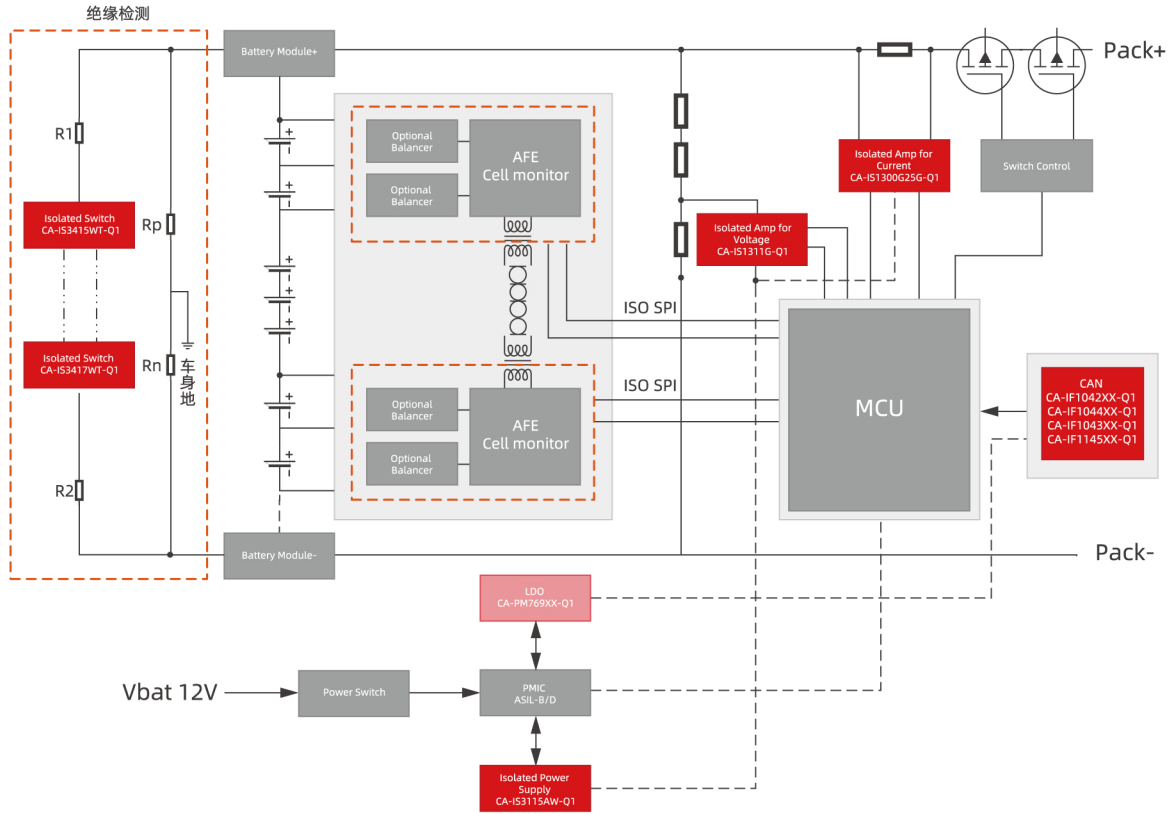
Product Lines	Part Number	Description	Applications	Features and Key Advantages
Isolated Drivers	CA-IS322XXX-Q1	Isolated drivers	MOSFET and IGBT driver	Large current driving, high isolation rating
	CA-IS3211XX-Q1	Isolated drivers	MOSFET and IGBT driver	Large current driving, high isolation rating
Digital Isolation	CA-IS3742LW-Q1	Digital isolators	Signal transmission between primary-side and secondary-side; isolated interface	High data-rate, high CMTI, high isolation rating
Isolated Amplifiers	CA-IS1300G25G-Q1	Isolated amplifier for current sensing	PFC current sensing; Charger current sampling	Low gain error and drift
	CA-IS1311G-Q1	Isolated amplifier for voltage sensing	Charger voltage sampling	Wide input range, low gain error and drift
CAN FD	CA-IF1042LX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±42V bus fault tolerant, own domestic property right
	CA-IF1042XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±70V bus fault tolerant, high reliability
	CA-IF1043XX-Q1	Low-power, ±58V fault protected CAN transceivers	Automotive networking	CAN bus wake-up, local WAKE wake-up, ideal for low-power applications
	CA-IF1044XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±58V bus fault tolerant, strong universality
	CA-IF1051XX-Q1	±58V fault protected CAN FD transceivers	Automotive networking	Silent mode, low-power
Isolated CAN	CA-IS3052G	Isolated CAN transceiver	Automotive networking	High data-rate, high CMTI, high isolation rating



# Electric Drive

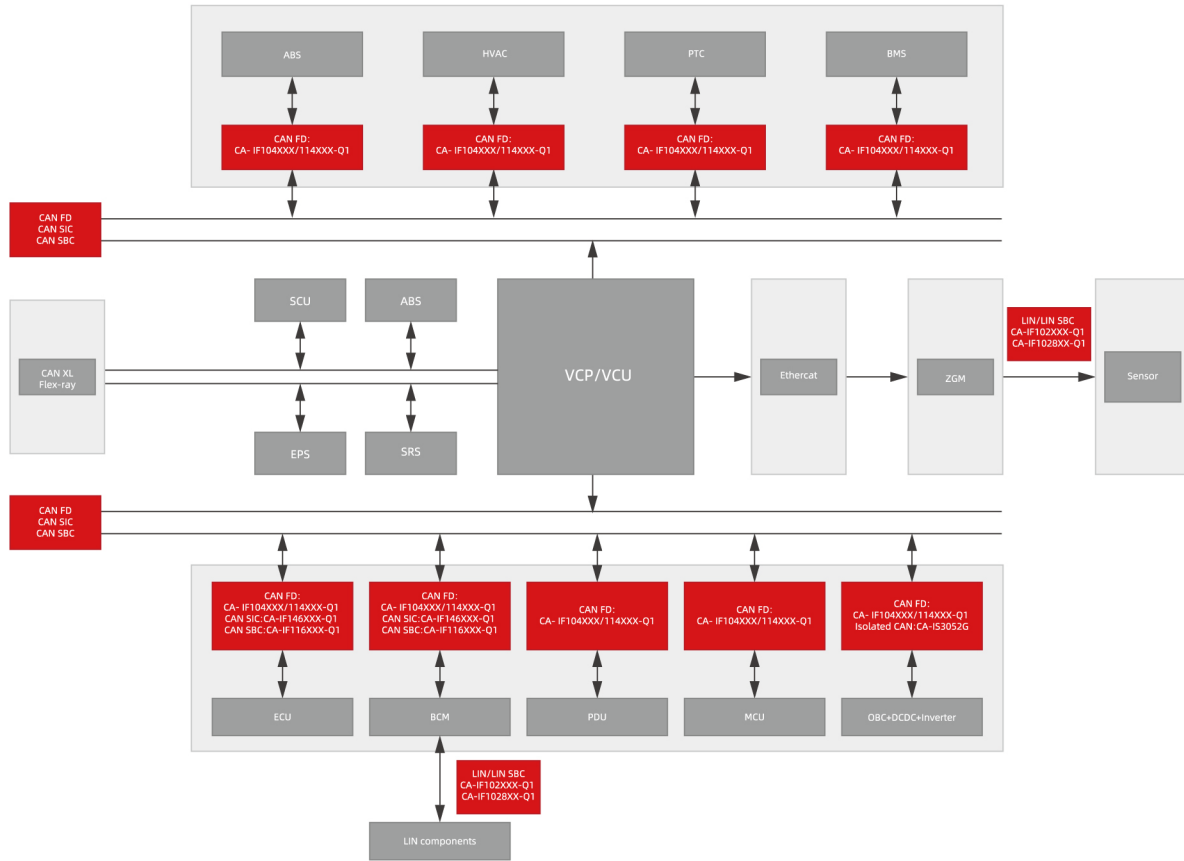


Product Lines	Part Number	Description	Applications	Features and Key Advantages
CAN FD	CA-IF1042LX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±42V bus fault tolerant, own domestic property right
	CA-IF1042XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±70V bus fault tolerant, high reliability
	CA-IF1043XX-Q1	Low-power, ±58V fault protected CAN transceivers	Automotive networking	CAN bus wake-up, local WAKE wake-up, ideal for low-power applications
	CA-IF1044XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±58V bus fault tolerant, strong universality
	CA-IF1051XX-Q1	±58V fault protected CAN FD transceivers	Automotive networking	Silent mode, low-power
LIN	CA-IF1021X-Q1	Fault protected LIN transceivers with inhibit and wake-up	Sensor networking	±58V bus fault tolerant, high anti-interference capability
LIN SBC	CA-IF1028XX-Q1	LIN transceivers with LDO	Combination switch	LDO features high-current driving, better EMC performance
Digital Isolators	CA-IS374XXW-Q1	Digital isolators	Signal transmission between high-voltage side and low-voltage side	High data-rate, high CMTI, high isolation rating
	CA-IS372XXW-Q1	Digital isolators	Signal transmission between high-voltage side and low-voltage side	High data-rate, high CMTI, high isolation rating
Isolated Amplifiers	CA-IS1300G25G-Q1	Isolated amplifier for voltage sensing	Phase current detect	Wide input range, low gain error and drift
Isolated Drivers	CA-IS3215xxW-Q1	Isolated drivers	IGBT and SIC MOSFET drivers	Features active protection, high CMTI, 15A sink/source
	CA-IS3216xxW-Q1	Isolated drivers	IGBT and SIC MOSFET drivers	Features active protection, high CMTI, 15A sink/source



Product Lines	Part Number	Description	Applications	Features and Key Advantages
Isolated Switches	CA-IS3415WT-Q1	1500V high-voltage, opto-compatible, isolated switch	Battery pack insulation detection	Ultra-high voltage, low quiescent current
	CA-IS3417WT-Q1	1700V high-voltage, opto-compatible, isolated switch	Battery pack insulation detection	Ultra-high voltage, low quiescent current
Isolated Power Supply	CA-IS3115AW-Q1	1.5W automotive, isolated DC-DC converter	High voltage sampling or AFE power supply	High output power, robust protection, better EMI performance, high CMTI
Isolated Amplifiers	CA-IS1300G25G-Q1	Isolated amplifier for current sensing	Battery pack voltage sampling	Low gain error and drift
	CA-IS1311G-Q1	Isolated amplifier for voltage sensing	Battery pack voltage sampling	Wide input range, low gain error and drift
CAN FD	CA-IF1042LX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±42V bus fault tolerant, own domestic property right
	CA-IF1042XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±70V bus fault tolerant, high reliability
	CA-IF1043XX-Q1	Low-power, ±58V fault protected CAN transceivers	Automotive networking	CAN bus wake-up, local WAKE wake-up, ideal for low-power applications
	CA-IF1044XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±58V bus fault tolerant, strong universality
	CA-IF1051XX-Q1	±58V fault protected CAN FD transceivers	Automotive networking	Silent mode, low-power

# Automotive Networking



Product Lines	Part Number	Description	Applications	Features and Key Advantages
CAN FD	CA-IF1042LX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±42V bus fault tolerant, own domestic property right
	CA-IF1042XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±70V bus fault tolerant, high reliability
	CA-IF1043XX-Q1	Low-power, ±58V fault protected CAN transceivers	Automotive networking	CAN bus wake-up, local WAKE wake-up, ideal for low-power applications
	CA-IF1044XX-Q1	CAN FD transceivers with low-power standby mode and remote wake-u	Automotive networking	±58V bus fault tolerant, strong universality
	CA-IF1051XX-Q1	±58V fault protected CAN FD transceivers	Automotive networking	Silent mode, low-power
LIN	CA-IF1021X-Q1	Fault protected LIN transceivers with inhibit and wake-up	Sensor networking	±58V bus fault tolerant, high anti-interference capability
	CA-IF1022XX-Q1	Dual-channel LIN transceivers	Multichannel communication	±58V bus fault tolerant, better EMC performance
	CA-IF1024X-Q1	Four-channel LIN transceivers	Multichannel communication	±58V bus fault tolerant, better EMC performance
LIN SBC	CA-IF1028XX-Q1	LIN transceivers with LDO	Combination switch	LDO features high-current driving, better EMC performance



# AUTOMOTIVE PRODUCTS SELECTION TABLE

## ISOLATION & INTERFACE

### Digital Isolation

#### Chipanalog Products Selection\_Automotive Standard Digital Isolators

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Part number	Number of channels	Number of reversed channels	Isolation rating (Vrms)	CMTI (kV/ $\mu$ S)	Surge rating (kVpk)	ESD rating HBM(V)	Data rate (bps)	Operating voltage range (V)	Operating current per channel @ 1Mbps(mA,typ)	Default output	Temperature range (°C)	Package
CA-IS3710HS-Q1	1	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC8(S)
CA-IS3710LS-Q1	1	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC8(S)
CA-IS3720HS-Q1	2	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC8(S)
CA-IS3720LS-Q1	2	0	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC8(S)
CA-IS3721HS-Q1	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC8(S)
CA-IS3721LS-Q1	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC8(S)
CA-IS3722HS-Q1	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC8(S)
CA-IS3722LS-Q1	2	1	3750	150	8	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC8(S)
CA-IS3720HW-Q1	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC16-WB(W)
CA-IS3720LW-Q1	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC16-WB(W)
CA-IS3721HW-Q1	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC16-WB(W)
CA-IS3721LW-Q1	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC16-WB(W)
CA-IS3722HW-Q1	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC16-WB(W)
CA-IS3722LW-Q1	2	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC16-WB(W)
CA-IS3720HG-Q1	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC8-WB(G)
CA-IS3720LG-Q1	2	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC8-WB(G)
CA-IS3722HG-Q1	1	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC8-WB(G)
CA-IS3722LG-Q1	1	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC8-WB(G)
CA-IS3740HW-Q1	4	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC16-WB(W)
CA-IS3740LW-Q1	4	0	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC16-WB(W)
CA-IS3741HW-Q1	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC16-WB(W)
CA-IS3741LW-Q1	4	1	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC16-WB(W)
CA-IS3742HW-Q1	4	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	High	-40~125	SOIC16-WB(W)
CA-IS3742LW-Q1	4	2	5000	150	10	6000	DC-150M	2.5-5.5	1.5	Low	-40~125	SOIC16-WB(W)

### Interface

#### Chipanalog Products Selection\_Automotive CAN Transceivers

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Part Number	Logic supply input?	Remote wakeup	Data rate (Mbps)	Common mode voltage range(V)	Fault protection (V)	HBM ESD rating (other pins ( $\pm$ kV))	HBM ESD rating bus pins ( $\pm$ kV))	Operating voltage range (V)	Logic operating voltage range (V)	Junction temp range (°C)	Package
CA-IF1051S-Q1	No	No	5	-30~30	-58~58	4	8	4.5~5.5	/	-55~150	SOIC8(S)
CA-IF1051VS-Q1	Yes	No	5	-30~30	-58~58	4	8	4.5~5.5	2.5~5.5	-55~150	SOIC8(S)
CA-IF1042S-Q1	No	Yes	5	-30~30	-70~70	8	16	4.5~5.5	/	-55~150	SOIC8(S)
CA-IF1042VS-Q1	Yes	Yes	5	-30~30	-70~70	8	16	4.5~5.5	3~5.5	-55~150	SOIC8(S)
CA-IF1044S-Q1	No	Yes	5	-30~30	-58~58	6	8	4.5~5.5	/	-55~150	SOIC8(S)
CA-IF1044VS-Q1	Yes	Yes	5	-30~30	-58~58	6	8	4.5~5.5	3~5.5	-55~150	SOIC8(S)
CA-IF1044D-Q1	No	Yes	5	-30~30	-58~58	6	8	4.5~5.5	/	-55~150	DNF8(D)
CA-IF1044VD-Q1	Yes	Yes	5	-30~30	-58~58	6	8	4.5~5.5	3~5.5	-55~150	DNF8(D)
CA-IF1043DF-Q1	Yes	Yes	5	-30~30	-58~58	4	4	4.5~5.5	1.7~5.5	-55~150	DFN14(DF)
CA-IF1043NF-Q1	Yes	Yes	5	-30~30	-58~58	4	4	4.5~5.5	1.7~5.5	-55~150	SOIC14(NF)

Part Number	Logic supply input?	Remote wakeup	Data rate (Mbps)	Common mode voltage range(V)	Fault protection (V)	HBM ESD rating other pins (±kV)	HBM ESD rating bus pins (±kV)	Operating voltage range (V)	Logic operating voltage range (V)	Junction temp range (°C)	Package
CA-IF1042LS-Q1	No	Yes	5	-30~30	-42~42	6	6	4.5~5.5	3~5.5	-55~150	SOIC8(S)
CA-IF1042LVS-Q1	Yes	Yes	5	-30~30	-42~42	6	6	4.5~5.5	3~5.5	-55~150	SOIC8(S)

## Chipanalog Products Selection\_LIN Transceivers

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Part Number	With internal LDO?	Remote wakeup	Data rate (Mbps)	Common mode voltage range (V)	Fault protection (V)	HBM ESD protection other pins (±kV)	HBM ESD protection bus pins (±kV)	Operating voltage range (V)	Logic operating voltage range (V)	Junction temp range (°C)	Package
CA-IF1021S-Q1	No	Yes	20	/	-58~58	2	4	5.5~27	/	-55~150	SOIC8(S)
CA-IF1021LS-Q1	No	Yes	20	/	-42~42	8	8	5.5~27	/	-55~150	SOIC8(S)
CA-IF1021D-Q1	No	Yes	20	/	-58~58	2	4	5.5~27	/	-55~150	DNF8(D)
CA-IF1021LD-Q1	No	Yes	20	/	-42~42	8	8	5.5~27	/	-55~150	DNF8(D)
CA-IF1024F-Q1	No	Yes	20	/	-42~42	8	14	5~18	/	-40~150	QFN24(F)
CA-IF1022F-Q1	No	Yes	20	/	-42~42	8	14	5~18	/	-40~150	QFN24(F)
CA-IF1022NF-Q1	No	Yes	20	/	-42~42	8	14	5~18	/	-40~150	SOP14(NF)
CA-IF1022DF-Q1	No	Yes	20	/	-42~42	8	14	5~18	/	-40~150	DFN14(DF)

## DRIVER & POWER

### Isolated Driver

## Chipanalog Products Selection\_Automotive Gate Drivers

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Part Number	Peak source/sink current (A)	UVLO threshold (V) output-side	Enable control	Supply voltage output-side (V)	Maximum transient isolation voltage (Vpk)	CMTI (kV/μs)	Surge rating (kVpk)	ESD protection HBM/CDM(kV)	Temperature range (°C)	Package
CA-IS3221CW-Q1	5/6	12	DIS	14~30	8000	150	12.8	4/2	-40~125	SOIC16-WB(W)
CA-IS3221BW-Q1	5/6	8	DIS	10~30	8000	150	12.8	4/2	-40~125	SOIC16-WB(W)
CA-IS3222CW-Q1	5/6	12	EN	14~30	8000	150	12.8	4/2	-40~125	SOIC16-WB(W)
CA-IS3222BW-Q1	5/6	8	EN	10~30	8000	150	12.8	4/2	-40~125	SOIC16-WB(W)
CA-IS3221CK-Q1	5/6	12	DIS	14~30	8000	150	12.8	4/2	-40~125	SOIC14-WB(K)
CA-IS3221BK-Q1	5/6	8	DIS	10~30	8000	150	12.8	4/2	-40~125	SOIC14-WB(K)
CA-IS3222CK-Q1	5/6	12	EN	14~30	8000	150	12.8	4/2	-40~125	SOIC14-WB(K)
CA-IS3222BK-Q1	5/6	8	EN	10~30	8000	150	12.8	4/2	-40~125	SOIC14-WB(K)
CA-IS3221CN-Q1	5/6	12	DIS	14~30	5300	150	8	4/2	-40~125	SOIC16-NB(N)
CA-IS3221BN-Q1	5/6	8	DIS	10~30	5300	150	8	4/2	-40~125	SOIC16-NB(N)
CA-IS3222CN-Q1	5/6	12	EN	14~30	5300	150	8	4/2	-40~125	SOIC16-NB(N)
CA-IS3222BN-Q1	5/6	8	EN	10~30	5300	150	8	4/2	-40~125	SOIC16-NB(N)

## Chipanalog Products Selection\_Isolated Smart Drivers

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Part Number	Power switch	Peak source/sink current (A)	DESAT threshold	Soft turn-off current	Dead-time	Internal/external clamp	Maximum transient isolation voltage (Vpk)	CMTI (kV/μs)	Surge rating (kVpk)	ESD protection HBM/CDM(kV)	Temperature range (°C)	Package
CA-IS3215NNW-Q1	IGBT	15	9V	400mA	N/A	Internal	8000	150	12.8	3/2	-40~125	SOIC16-WB(W)
CA-IS3215SNW-Q1	IGBT	15	9V	400mA	800ns	Internal	8000	150	12.8	3/2	-40~125	SOIC16-WB(W)
CA-IS3215LNW-Q1	IGBT	15	9V	400mA	N/A	Internal	8000	150	12.8	3/2	-40~125	SOIC16-WB(W)
CA-IS3216NNW-Q1	SiC	15	9V	1A	N/A	Internal	8000	150	12.8	3/2	-40~125	SOIC16-WB(W)

## Power Management

### Chipanalogue Products Selection\_Automotive LIN Transceivers with LDO (μMiC)

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Part Number	With internal LDO?	Remote wakeup	Data rate (kbps)	Common mode voltage range (V)	Fault protection (V)	HBM ESD protection other pins (±kV)	HBM ESD protection bus pins (±kV)	Operating voltage range (V)	Logic Operating voltage range (V)	Junction Temp Range (°C)	Package
CA-IF10285S-Q1	Yes	Yes	20	/	-42~42	8	8	5.5-28	/	-40~150	SOIC8(S)
CA-IF10283S-Q1	Yes	Yes	20	/	-42~42	8	8	5.5-28	/	-40~150	SOIC8(S)
CA-IF10285D-Q1	Yes	Yes	20	/	-42~42	8	8	5.5-28	/	-40~150	DFN8(D)
CA-IF10283D-Q1	Yes	Yes	20	/	-42~42	8	8	5.5-28	/	-40~150	DFN8(D)

### Chipanalogue Products Selection\_Automotive 1.5W Complete Isolated Power Supply (μMiC)

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Part Number	Output power (W)	Operating voltage range (V)	Isolation rating (Vrms)	CMTI (kV/μs)	Surge rating (kVpk)	ESD rating HBM(kV)	Temperature range (°C)	Package
CA-IS3115AW-Q1	1.5	4.5-5.5	5000	150	12.8	3	-40~125	SOIC16-WB(W)

## Smart Switches

### Chipanalogue Products Selection\_Solid State Relays (SSR) (μMiC)

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Part number	Off leakage current (μA)	Withstand drain-source voltage (V)	On resistance (Ω)	Maximum input reverse voltage (V)	Maximum transient isolation voltage (Vpk)	CMTI (kV/μs)	Surge rating (kVpk)	ESD rating HBM/CDM(kV)	Temperature range (°C)	Package
CA-IS3417WT-Q1	3	1700	100	5.5	8000	150	12.8	3/2	-40~125	SOIC12-WB(WT)

## HPA

## Precision Isolated Data Acquisi

### Chipanalogue Products Selection\_Isolated Amplifiers

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Part number	Supply voltage high-side(V)	Supply voltage low-side(V)	Differential input voltage (mV)	CMRR (dB)	PSRR (dB)	Fixed gain	GERR (%)	Isolation rating (Vrms)	CMTI (kV//μs)	Output noise (mVRMS)	Surge rating (kVpk)	ESD rating HBM/CDM (kV)	Temperature range (°C)	Package
CA-IS1300B25G-Q1	3-5.5	3-5.5	±250	-98	-100	8.2	±0.3	5000	150	0.33	10	4/2	-40~125	SOIC8-WB(G)

### Chipanalogue Products Selection\_Isolated Amplifiers

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Part number	Supply voltage high-side(V)	Supply voltage low-side(V)	Input voltage (V)	Input offset Vos (mV)	Output band-wide (kHz)	Fixed gain	GERR (%)	Isolation rating (Vrms)	CMTI (kV//μs)	Output noise (mVRMS)	Surge rating (kVpk)	ESD rating HBM/CDM (kV)	Temperature range (°C)	Package
CA-IS1311G-Q1	3-5.5	3-5.5	-0.1~2	±1.5	275	1	±0.3	5000	150	0.23	12.8	4/2	-40~125	SOIC8-WB(G)





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The above manual is for reference only and the final interpretation shall be subject to Shanghai Chipanalog Microelectronics Co., Ltd. Printed: December, 2023