INDUSTRIAL PROCESS CONTROL SOLUTIONS

Precision Amplifiers, Precision Data Converters, Voltage References, Real Time Clocks, Interface, Digital Potentiometers (DCPs), Switch/Mux, Switching Regulators, Isolated PWM Controllers, LDOs, Integrated FET Switching Regulators, PWM Controllers, Voltage Monitors, Sequencers

intersil™

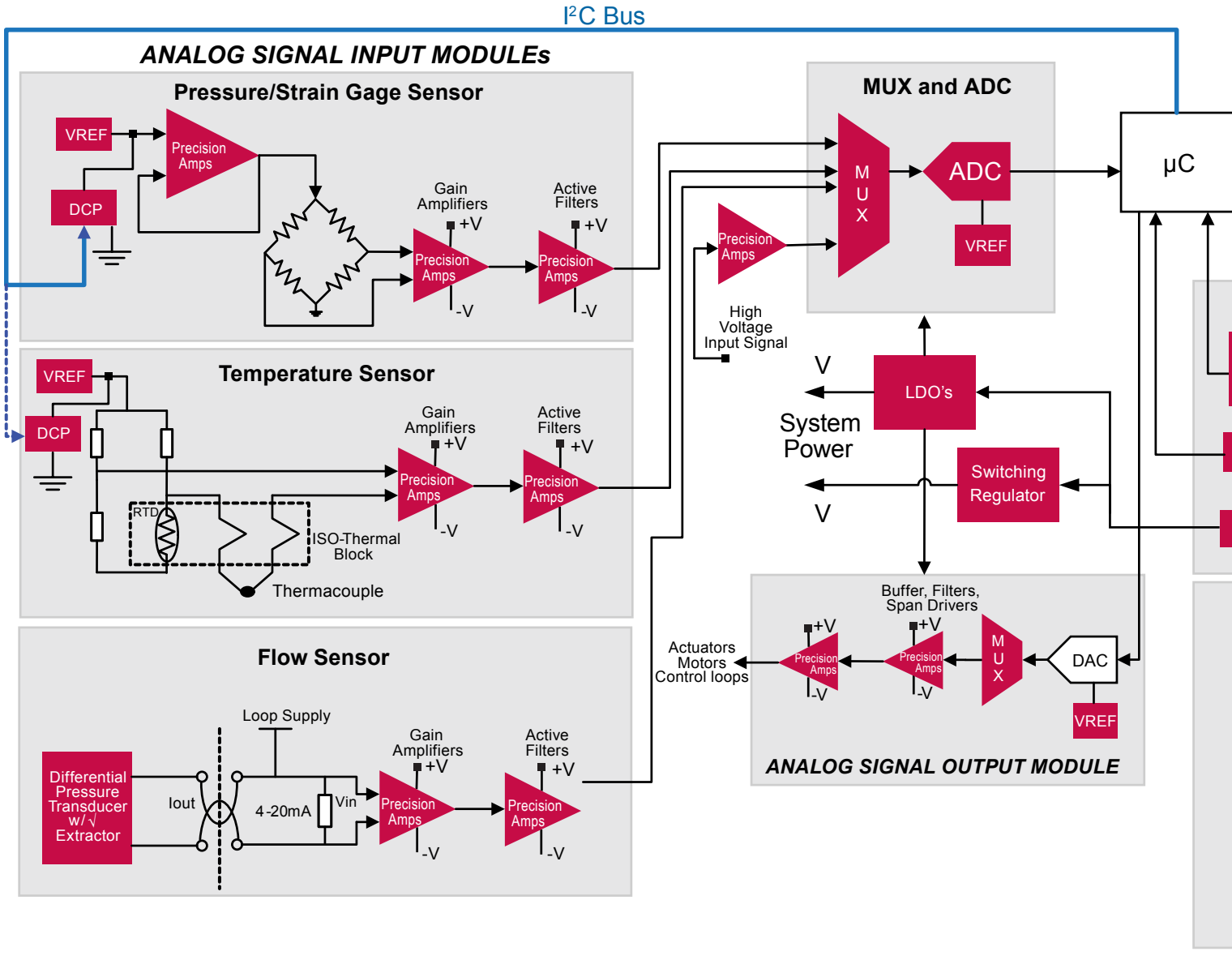


Intersil's Solutions for Industrial Process Control

Intersil Corporation is a global technology leader specializing in the design and manufacture of high performance analog semiconductors. Built on a solid foundation, with many years of analog experience, Intersil is committed to developing leadership solutions for the Industrial market. Over the past several years, Intersil has heavily invested and will continue to invest in robust technology capable of supporting the demanding requirements of the Industrial market. Intersil's proprietary 40V precision silicon-on-insulator (SOI) bipolar process technology, developed, specifically to target the Industrial market and the growing portfolio of leadership precision amplifiers, are excellent examples of this commitment.

Precision data acquisition solutions are required for a broad range of Industrial applications. Programmable logic controllers (PLC), distributed control systems (DCS), smart transmitters, and general-purpose data acquisition are used in the majority of these Industrial systems. These applications utilize various types of sensors and feedback mechanisms to monitor and control machine or system interactions by collecting, storing, and analyzing data. Sensor data acquisition involves precision measurement and processing of analog variables, such as voltages and currents, where there is a need to sense very small changes. Intersil's broad portfolio of analog, power and interface solutions makes it well positioned to deliver world class solutions to Industrial customers. In this solutions brochure, you will find outstanding solutions from Intersil for your current and future Industrial systems.

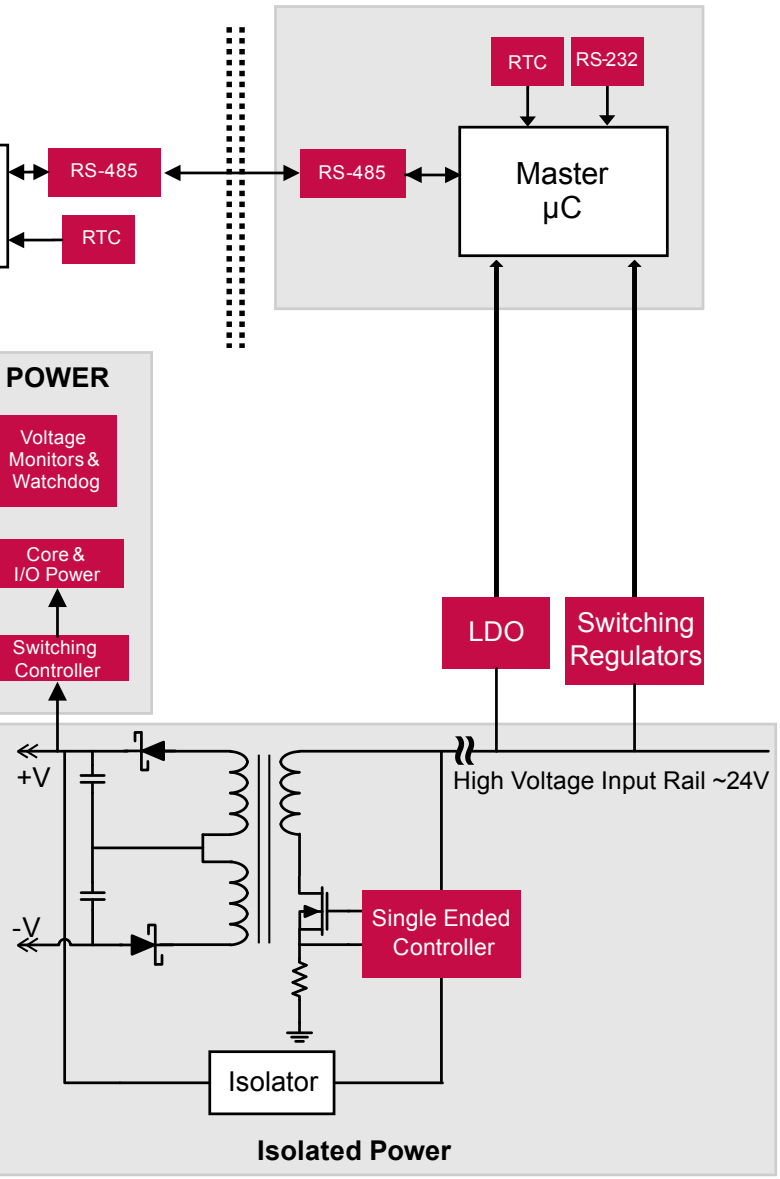
Typical Industrial Control Loop Block Diagram











Contents

PLC (Program Logic Controllers) Application 4

Analog Input

Mixed Signal High Voltage - Quad Op Amps to 24-bit Sigma Delta 4

Analog Output

High Voltage Output Voltage and 0-20mA Current Loop 8

Sensors

Low Noise Precision Sensor Chipset Solutions 10

High Voltage Bridge Sensor Signal Conditioning 10

Control

Real Time Clock 12

Power

HV Dual Supply Power Solution 13

DCS (Distributed Control Systems) Application 14

Analog Input

High Voltage and Low Voltage, Low Power Solutions 14

For Distributed Control Systems 14

Control

RS-485/422 16

Sensors

Wireless Strain Gauge Sensor 17

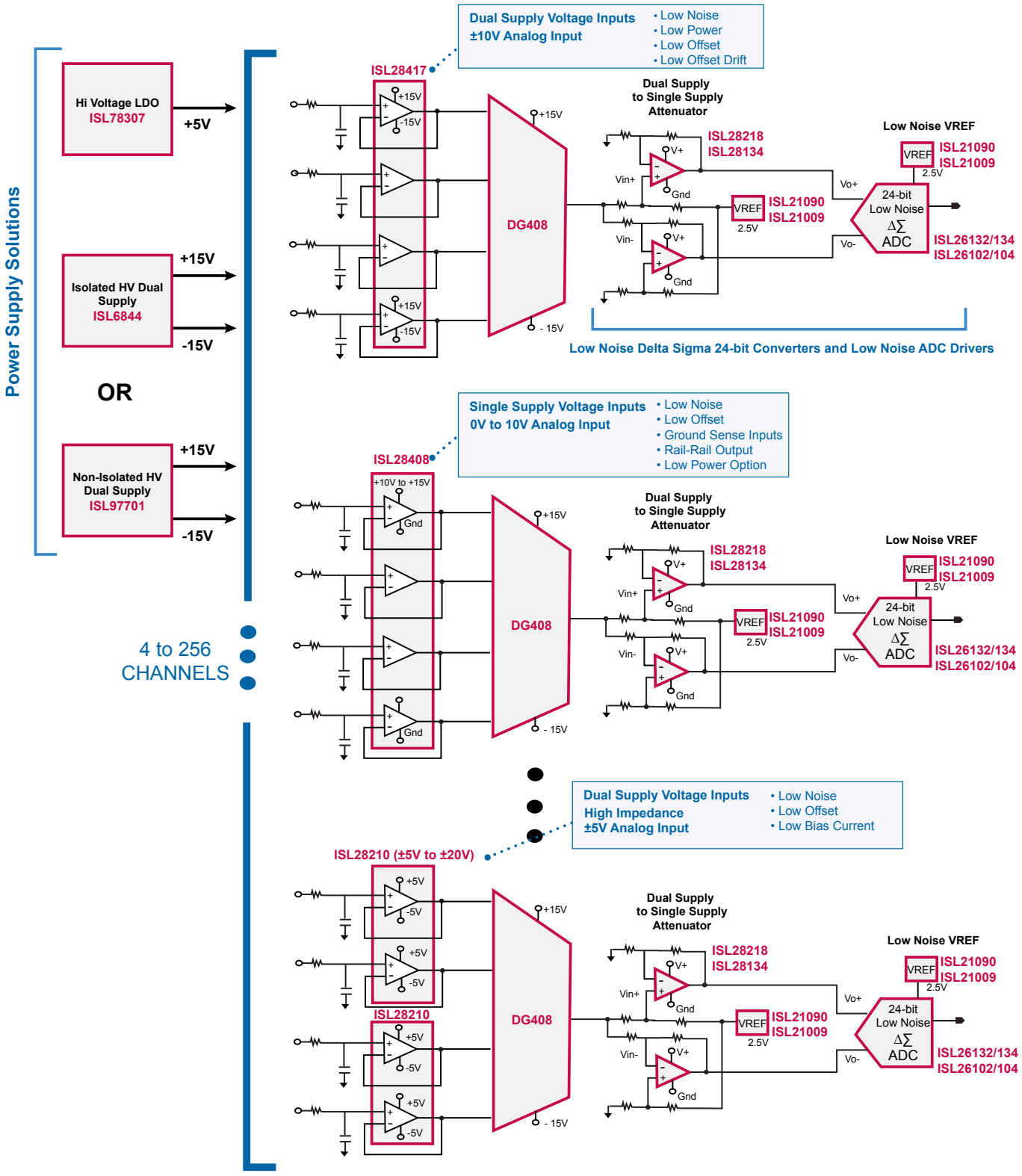
Additional Recommended Industrial Products 18

Design Resources 20

iSIM 20

PLC (Program Logic Controllers) Application

Mixed Signal High Voltage - Quad Op Amps to 24-bit Sigma Delta



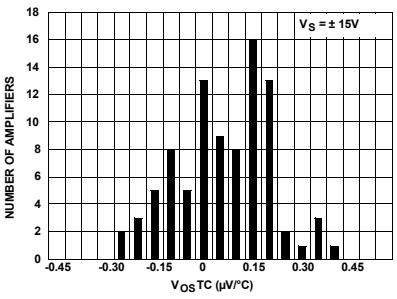
High Voltage Ultra Precision Op Amp: ISL28417

40V Quad, Low Power, Low Noise Precision Bipolar Op Amp

Key Features

- Low Input Offset.....±50µV, Max
- Superb Offset TC.....0.6µV/°C, Max
- Input Bias Current ..... ±1nA, Max
- Input Bias Current TC .....±5pA/°C, Max
- Low Current Consumption 440µA
- Voltage Noise ..... 8nV/√Hz
- Bandwidth 1.5MHz
- Wide Supply Range ..... 4.5V to 40V
- Operating Temperature Range..... ..... -40°C to +125°C

Low Offset Drift of 0.6µV/°C MAX



Evalboard Available!

High Voltage Ultra Precision Op Amp: ISL28210

40V Dual Precision, Low Noise, JFET Op Amp



Key Features

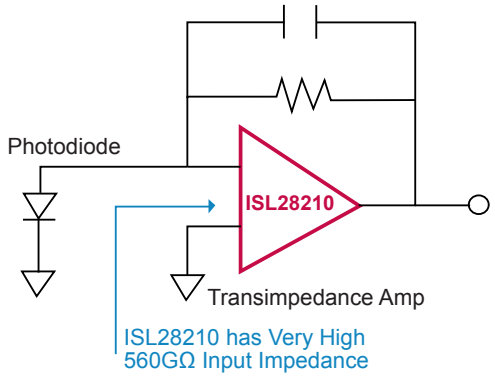
- Wide Supply Range ..... 9V to 40V
- Low Voltage Noise ..... 6nV/√Hz
- Low Input Bias Current..... 2pA
- High Slew Rate..... 20V/µs
- High Bandwidth..... 12.5MHz
- Low Input Offset.....300µV, Max
- Low Current Consumption 2.55mA
- Wide Tempe Range ..... -40°C to +125°C

Applications

- High Impedance Buffers
- Medical Instrumentation
- Flow Sensor
- ATE/Test
- Data Acquisition

Very High Impedance

- ISL28210 is ideal for Flow Sensors and other high impedance applications.



Part Number			Supply Voltage (V)		Rail-To-Rail		Vos Max @ 25°C	TCVos Typ	Ib Max @ 25°C	CMRR min @ 25°C	PSRR min @ 25°C	Av min @ 25°C	Is Max @ 25°C	GBW	Slew Rate	Noise 0.1 to 10Hz	Voltage Noise @ 1kHz	Current Noise @ 1kHz
Single	Dual	Quad	Min	Max	In	Out	µV	µV/°C	nA	dB	dB	dB	mA	MHz	V/µs	µVpp	nV/√Hz	fA/√Hz
ISL28117B	ISL28217B	ISL28417B	4.5	40	No	No	50	0.14	1	120	120	129.5	0.53	1.5	0.5	0.25	8	100
ISL28127	ISL28227		4.5	40	No	No	70	0.1	10	115	115	120	2.8	10	3.6	0.085	2.5	400
ISL28107	ISL28207	ISL28407	4.5	40	No	No	75	0.1	0.3	115	115	129.5	0.29	1	0.32	0.34	13	53
ISL28117C	ISL28217C	ISL28417C	4.5	40	No	No	100	0.14	1	120	120	129.5	0.53	1.5	0.5	0.25	8	100
ISL28118	ISL28218		3	40	Single Supply	Yes	230	0.3	575	103	109	124.7	1.1	4	1.2	0.3	5.6	355
ISL28177			4.5	40	No	No	150	0.5	1	120	115	120	1.4	0.6	0.2	0.38	9.5	87
ISL28108	ISL28208	ISL28408	3	40	Single Supply	Yes	250	0.1	43	105	110	117	0.25	1.2	0.45	0.58	15.8	80
ISL28110	ISL28210		9	40	No	No	300	1	0.002	88	102	104	2.9	12.5	23	0.6	6	9

Evalboard Available!

24-bit ADCs: ISL26132, ISL26134

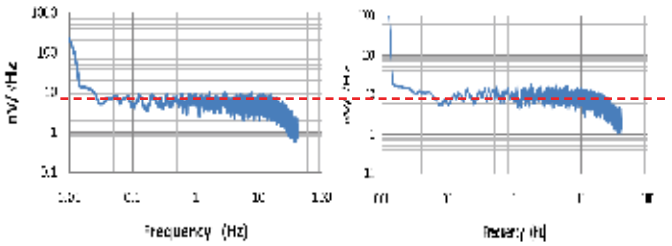
Easy to Use ADC with Superior Noise Performance at Low Cost

Key Features

- Drop-In Compatible with ADS1232/34
  - Improved Performance with no change in circuitry
- 10SPS, 80SPS Operation
- Best in Class Performance – 21.6 Bits noise-free (Gain = 1)
- Low Noise PGA with Buffer
- Simultaneous 50/60 Hz Noise Rejection
- 2 & 4 Channel, Differential-input Multiplexer
- All Functions Pin-programmed
- Low Power: 50mW (max), 1µA in Shutdown Mode
  - 5V Analog, 5.5V / 2.7V Digital Supplies
- Easy-to-Use SPI-compatible Serial Interface
- 24 / 28 Pin TSSOP Package
- Extended Industrial Temp Range (-40°C - 105°C)
- Robust ESD Rating – 7.5kV HBM
- Samples and Evaluation Board Available

Low Noise

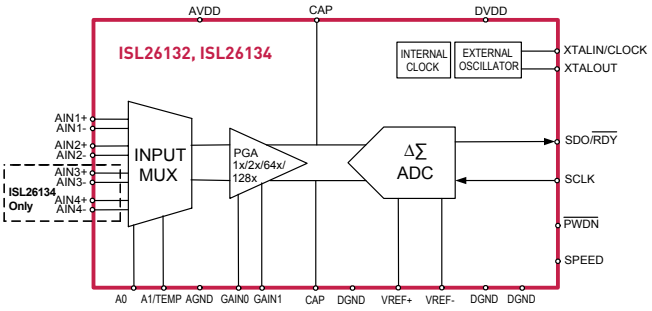
- At 10SPS, 128x Gain ISL26134 noise is 5.6nV/√Hz
- Competitor A shows 10.2nV/√Hz



ISL26134 128X Gain

Competitor A 128X Gain

Highly Integrated



Device	Description	Resolution (Bits)	Max Conversion Rate (SPS)	Channels	INL (%FS)	Noise (µVrms)	Power (mW)	Analog Supply Voltage (V)	Digital Supply Voltage (V)	Package
ISL26102	Low-Noise 24-bit ADC	24	4000	2	0.0002%	0.01	50	5V	2.7V - 5V	24 Ld TSSOP
ISL26104	Low-Noise 24-bit ADC	24	4000	4	0.0002%	0.01	50	5V	2.7V - 5V	28 Ld TSSOP
ISL26132	Low-Noise, Low-cost 24-bit ADC	24	80	2	0.0002%	0.01	50	5V	2.7V - 5V	24 Ld TSSOP
ISL26134	Low-Noise, Low-cost 24-bit ADC	24	80	4	0.0002%	0.01	50	5V	2.7V - 5V	28 Ld TSSOP

Evalboard Available!

Single-Ended PWM Controller: ISL6844

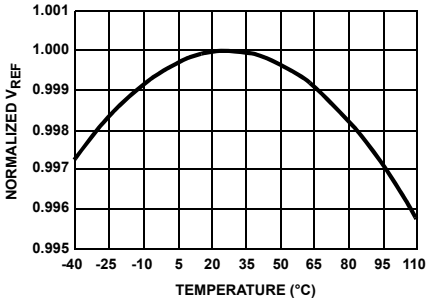
Single Ended Controller for Positive and Negative Isolated Supplies

Key Features

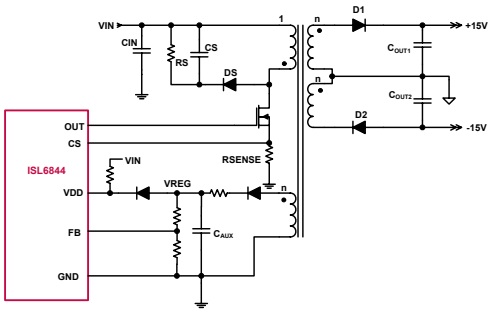
- 1A MOSFET Gate Driver
- 60µA Start-up Current, 100µA Maximum
- 25ns Propagation Delay Current Sense to Output
- Fast Transient Response with Peak Current Mode Control
- Adjustable Switching Frequency to 2MHz
- 20ns Rise and Fall Times with 1nF Output Load
- Trimmed Timing Capacitor Discharge Current for Accurate Deadtime/Maximum Duty Cycle Control
- High Bandwidth Error Amplifier
- Tight Tolerance Voltage Reference Over Line, Load, and Temperature
- Tight Tolerance Current Limit Threshold
- Pb-Free Available (RoHS Compliant)

Refer to application note AN1612 to generate positive and negative isolated supplies.

Tight Tolerance Voltage Reference Over Line, Load, and Temperature



Isolated HV Dual Power Supply



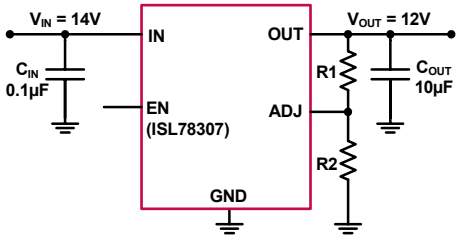
Linear Regulator: ISL78307

40V, Low Quiescent Current, 50mA Linear Regulator

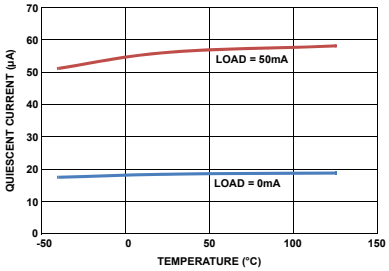
Key Features

- 18µA Typical Quiescent Current
- Guaranteed 50mA Output Current
- 1.8µA of Typical Shutdown Current
- Low Dropout Voltage of 120mV at 50mA
- Fixed +3.3V, +5.0V and Adjustable Output Voltage Options
- Thermal Shutdown and Current Limit Protection
- -40°C to +125°C Operating Temperature Range
- Thermally Enhanced 8 Ld Exposed Pad SOIC Package
- 6kV ESD HBM Rated

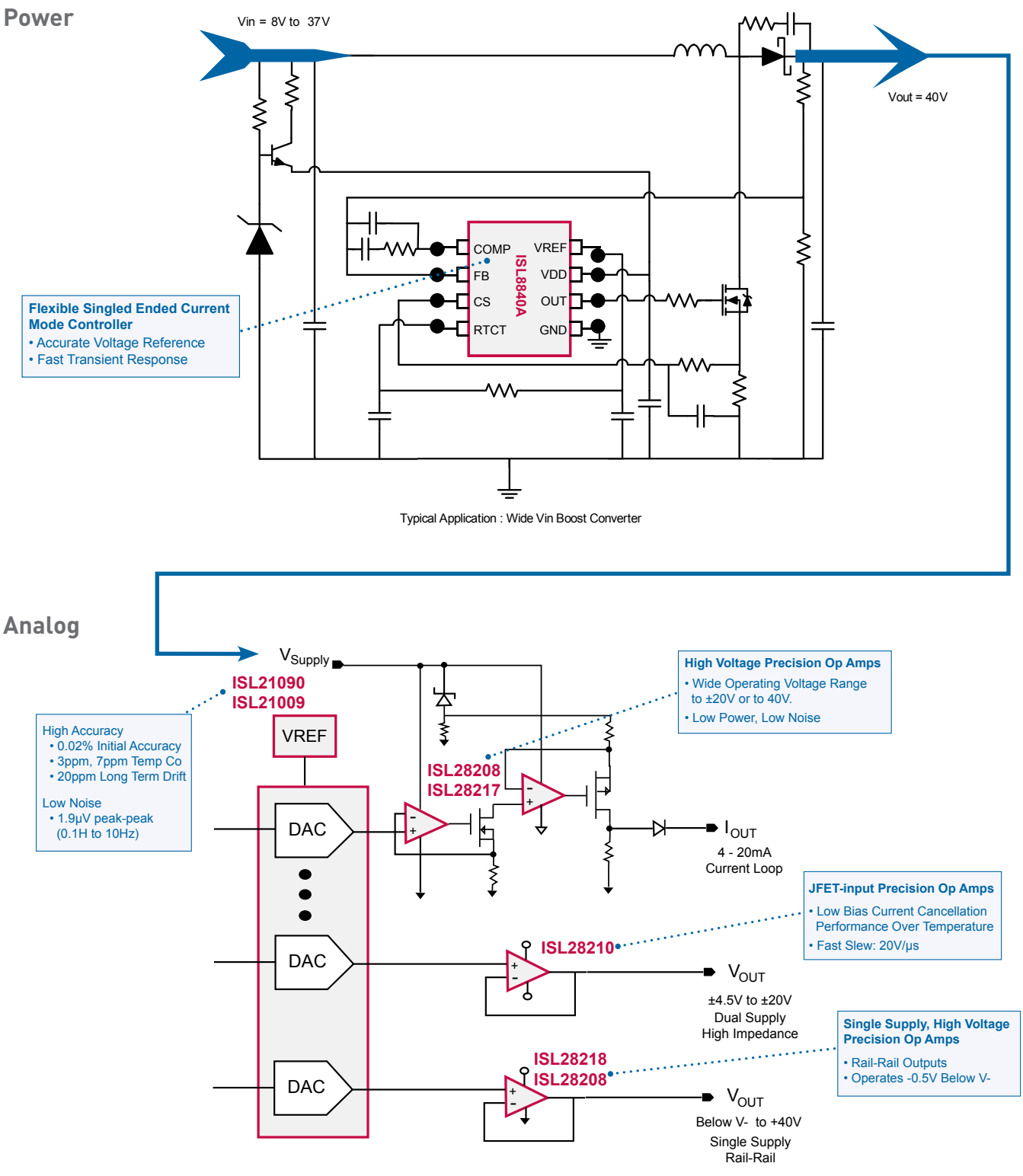
High Input Voltage (V_{IN} = 40V)



Low Quiescent Current (Iq = 18µA)



High Output Voltage and 0-20mA Current Loop



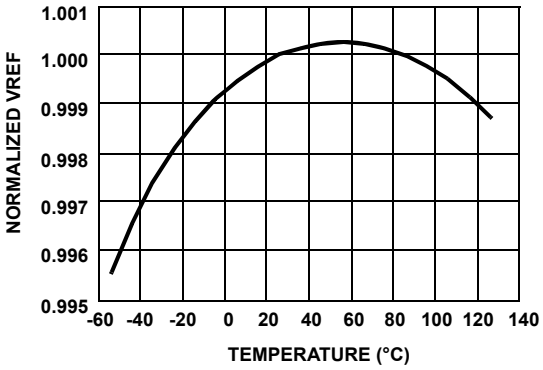
Single-Ended PWM Controller: ISL8840A

High Performance Single Ended Current Mode PWM Controller

Key Features

- 1A MOSFET Gate Driver
- 90µA Start-up Current, 125µA Maximum
- 35ns Propagation Delay Current Sense to Output
- Fast Transient Response with Peak Current Mode Control
- 30V Operation
- Adjustable Switching Frequency
- 20ns Rise and Fall Times with 1nF Output Load
- Trimmed Timing Capacitor Discharge Current for Accurate Deadtime/Maximum Duty Cycle Control
- 1.5MHz Bandwidth Error Amplifier
- Tight Tolerance Voltage Reference Over Line, Load and Temperature
- ±3% Current Limit Threshold

Tight Tolerance Voltage Reference Over Line, Load, and Temperature



REFERENCE VOLTAGE vs TEMPERATURE



40V Precision Op Amp: ISL28208

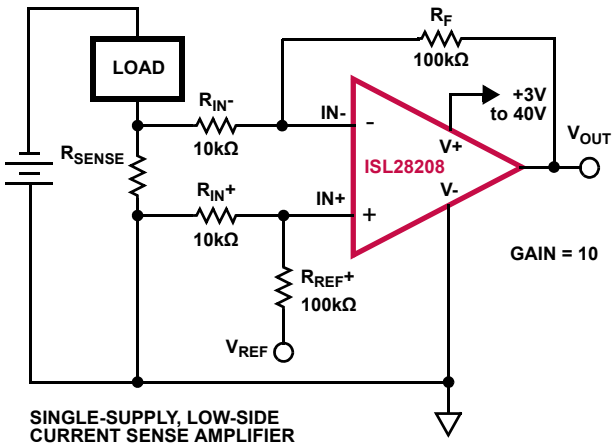
40V Precision, Low Power, Single Supply, RRO Op Amp

Intersil's ISL28208 is a high voltage precision, low power op amp, featuring single power supply operation and rail-to-rail output to provide full output dynamic range to take take full advantage of the ADC performance in precision applications without compromise.

Key Features

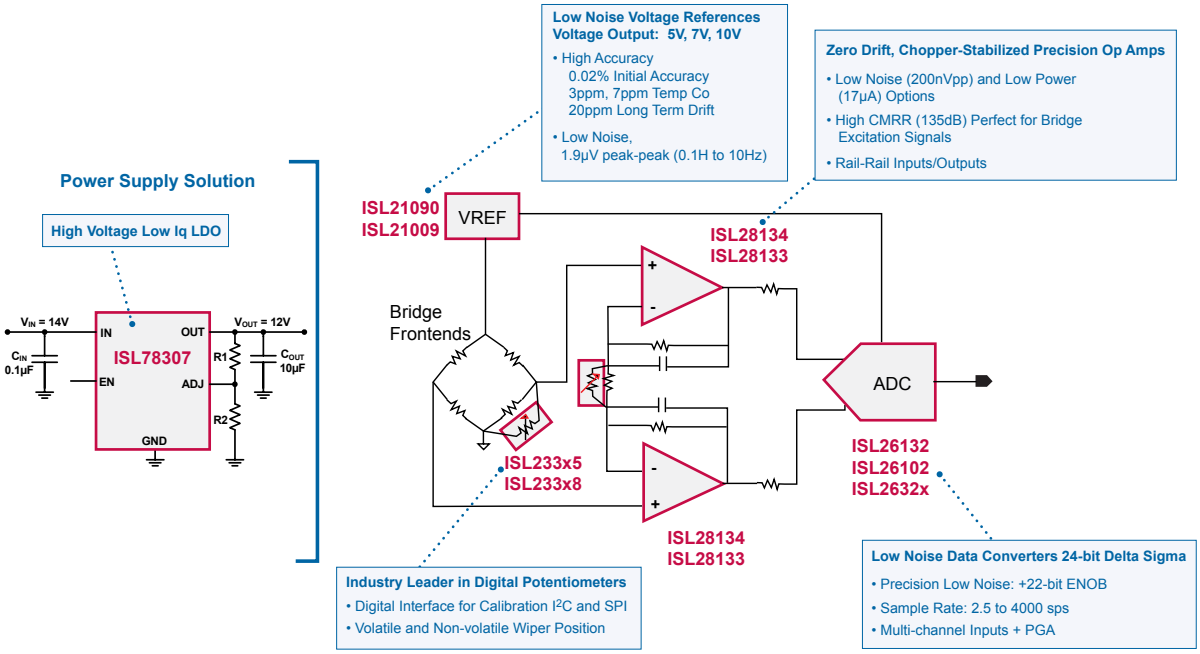
- Wide Input Range
- Rail-to-Rail Output
- Single or Dual Supply Operating
- Low Power - 250µA max
- Precision
  - Low Offset Voltage: 230µV max
  - Low Drift: 0.1µV/°C typ
- Low Noise
  - 15.8nV/√Hz @ 1kHz
  - 80fA/√Hz @ 1kHz

Typical Application Circuit



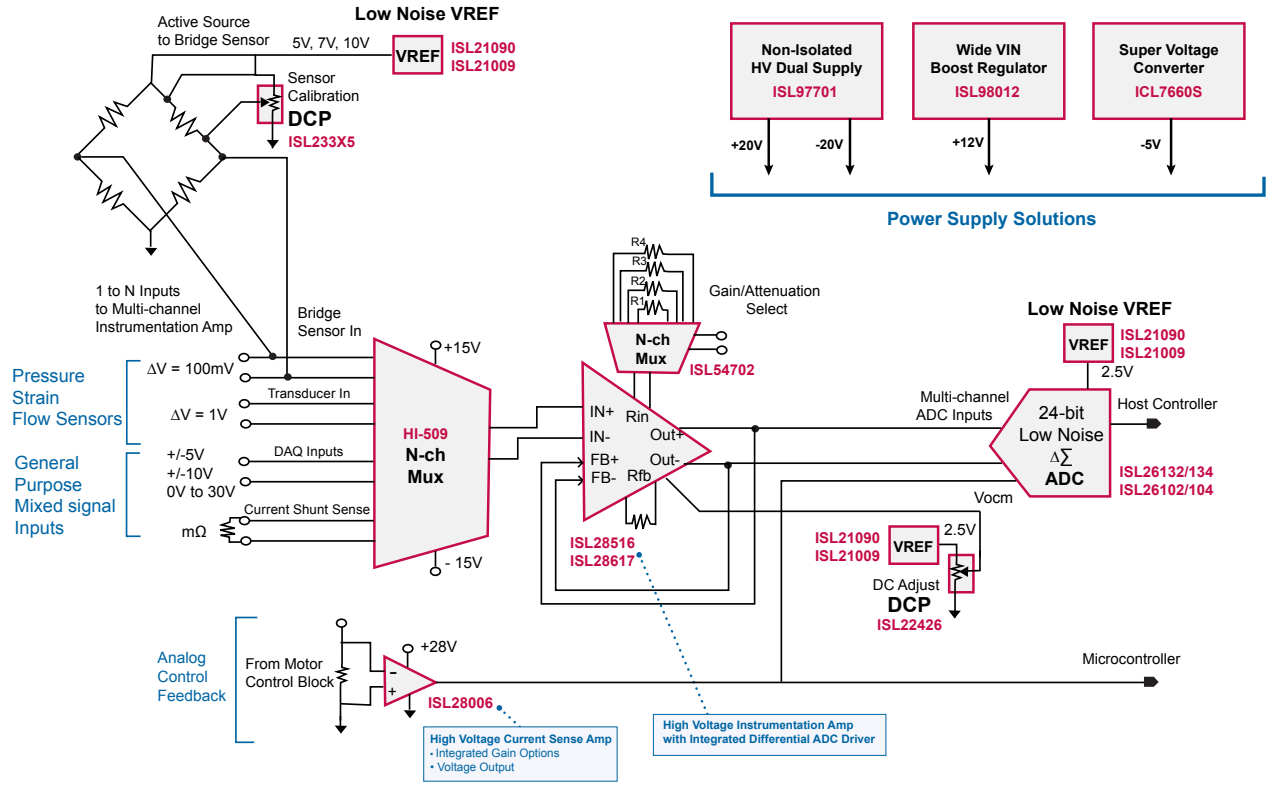
SINGLE-SUPPLY, LOW-SIDE CURRENT SENSE AMPLIFIER

Low Noise Precision Sensor Chipset Solutions



High Voltage Bridge Sensor Signal Conditioning

Precision Sensor & Data Acquisition 24-Bit Low Noise, Analog Inputs To Digital Output



Volatile DCP: ISL233x5, ISL234x5, ISL233x8, ISL234x8

World's Lowest Voltage, Volatile, DCP Family

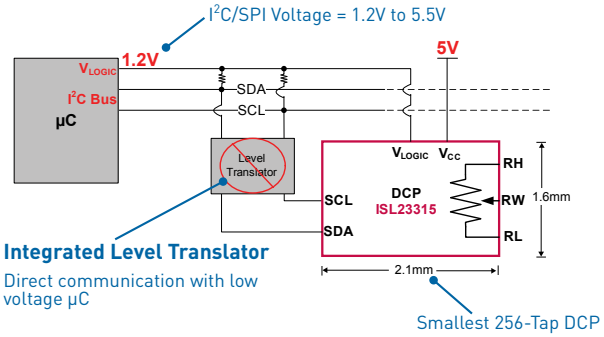
Lowest Voltage

Specification	Intersil	Competition	Benefit
Analog Voltage	1.7V to 5.5V	1.8V to 5.5V 2.7V to 5.5V	Operational when battery starts draining.
Digital Voltage	1.2V to 5.5V	Same as analog voltage, lowest is 1.8V	Eliminate level shifter for I²C/SPI when µC has low voltage I/O pins.
Low Current Consumption	2.5µA - 1CH 3µA - 2CH 5µA - 4CH	Up to 2x more power consumption	Drains up to 50% less battery power.

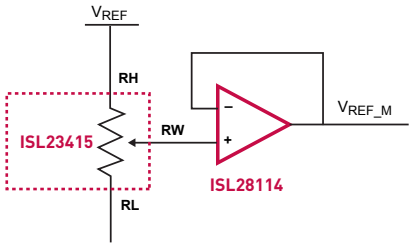
Smaller Package

Type	Part #	Intersil	Competition	Benefit
Single	ISL23315, ISL23415, ISL23318, ISL23418	µTQFN (2.1x1.6mm)	SC-70 (2x2.1mm)	20% Smaller
Dual	ISL23325, ISL23425, ISL23328, ISL23428	µTQFN (2.6x1.8mm)	QFN (4x4mm)	48% Smaller
Quad	ISL23345, ISL23445, ISL23348, ISL23448	QFN (3x4mm)	QFN (4x4mm)	25% Smaller

Integrated Level Translator



Vref Adjustment



Ultra Precision Vref: ISL21090

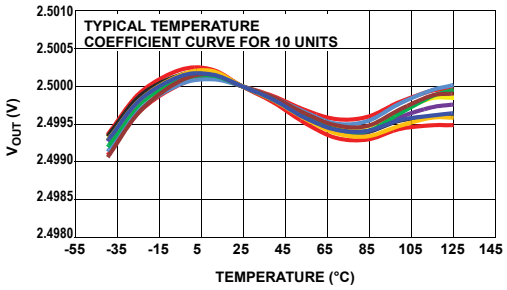
Ultra Low Noise, Precision Voltage Reference

Key Features

- 7V Reference Output Voltage Option
- **Initial Accuracy: ±0.02%**
- Output Voltage Noise: 5.3µVpp Typ (0.1 to 10Hz)
- Supply Current: 930µA (typ)
- Tempco: 7ppm/°C (3ppm/°C coming soon)
- Output Current Capability: 20mA
- Line Regulation: 8ppm/V
- Load Regulation: 2.5ppm/mA
- Operating Temperature Range: -40°C to 125°C

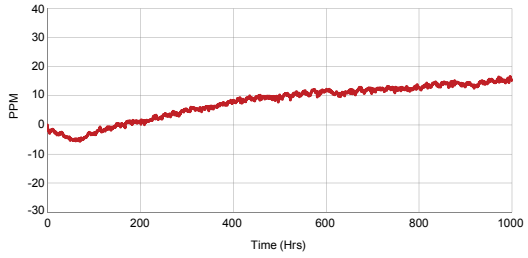
Device Number	1.25V	2.5V	5V	7V	10V	Isy Max (µA)	Vsy Max (V)	Noise Low Freq (µVp-p)	Noise High Freq (µVrms)	Iout Source (mA)	Iout Sink (mA)	Pkg
ISL21090B	X	X	X	X	X	1280	36	1.9	1.6	20	10	SOIC-8

Temperature Drift (Coefficient)



ISL21090 Typical Temperature Coefficient Curve

Long Term Drift



ISL21090 Long Term Drift Data (1000 Hrs)

Real Time Clock

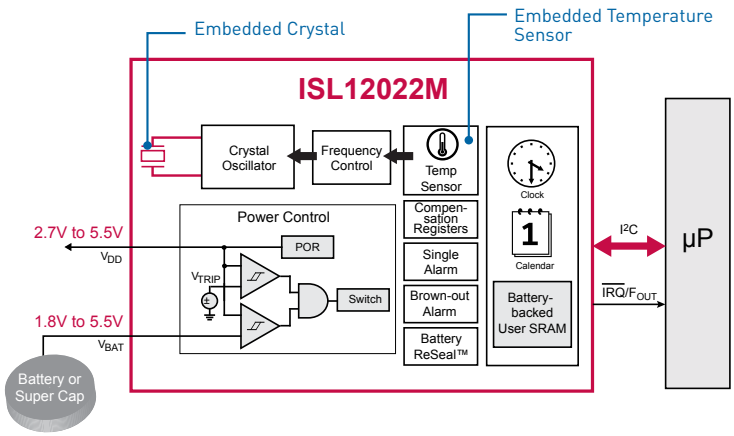
RTC Modules with Embedded Crystal and Temp Comp: ISL12022M

3 in 1 RTC Module (RTC + Embedded Crystal + Temp Sensor) Achieves Better than ±5ppm Accuracy

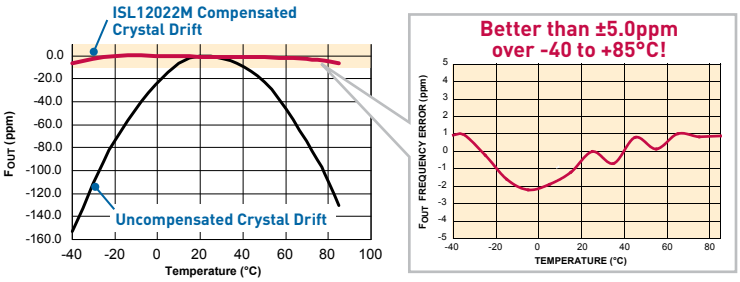
Key Features

- ±5ppm Accuracy (-40°C to +85°C)
  - Factory Programmed RTC for Optimal Accuracy
  - Onboard Temperature Sensor
  - Embedded Crystal
- Reliable Timekeeping & Power Management
  - Backup Battery Management
  - Vdd and Battery Status Monitors and Switchover Timestamp
  - Battery Reseal™ Function Extends Battery Shelf Life
- User Programmability
  - I²C Interface
  - 128 Bytes Battery-Backed User SRAM
- See Also
  - ISL12020M (DFN 3 in 1); ISL12022 and ISL12023 Standalone RTCs

Block Diagram

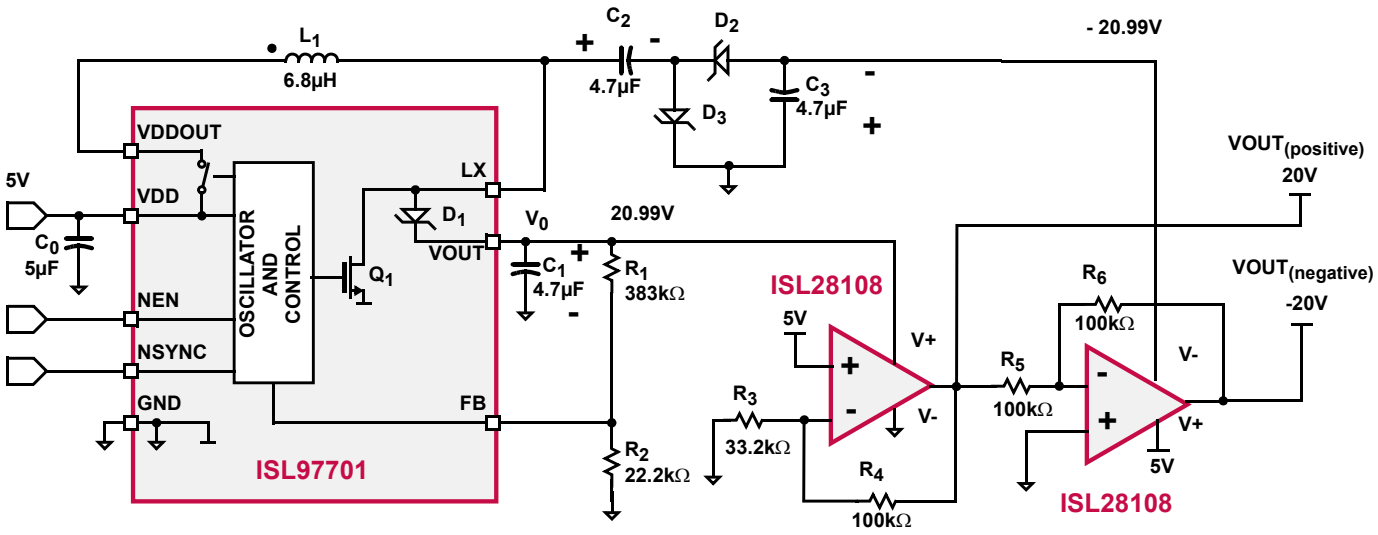


High Accuracy Even in Extreme Temperature Conditions



Device	I_{BAT} (nA)	Alarms	Selectable Frequency Output	CPU Supervisory Function		Battery		IRQ	FOUT	SRAM	Other Functions	Package
				POR	Watchdog Timer	Seal	Backup					
ISL12020M	1000	1	15	N	N	Y	Y	Shared Pin		128 Bytes	• Battery Switchover Time Stamp • Battery Status Monitor	20 Ld DFN
ISL12022M	1000	1	15	N	N	Y	Y	Shared Pin		128 Bytes	• Battery Switchover Time Stamp • Battery Status Monitor	20 Ld SOIC
ISL12022MA	1000	1	15	N	N	Y	Y	Shared Pin		128 Bytes	• Enhanced Environmental MoistureTolerance • Firmware Compatible with ISL12020M and ISL12022M	Enhanced 20 Ld SOIC
ISL12022M-R5421	1000	1	15	N	N	Y	Y	Shared Pin		128 Bytes	• Enhanced ESD Performance • Firmware Compatible with ISL12020M and ISL12022M	Enhanced 20 Ld SOIC

HV Dual Supply Power Solution



For more information, refer to AN1673 “Application Circuit to generate Positive and Negative Supplies Using ISL97701 Boost Regulator”.

Integrated FET Boost Regulator: ISL97701

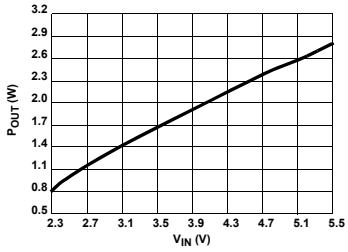
Boost Regulator for Positive and Negative Supplies



Key Features

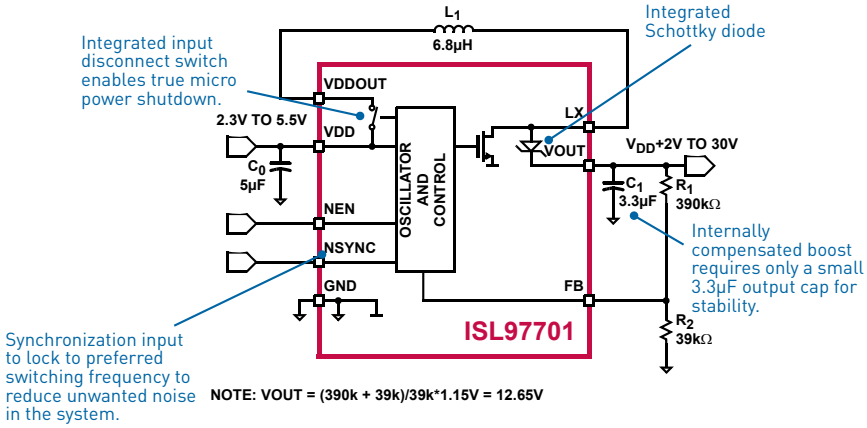
- Up to 87% Efficiency
- 2.3V to 5.5V Input
- Up to 28V Output
- Integrated Boost Schottky Diode
- Input Voltage Disconnect Switch for Micro Power Shutdown
- Synchronization Input
- 10 Ld 3x3 DFN Package
- Pb-free (RoHS Compliant)
- Up to 2.5W Output Power

Up to 2.5W Output Power Delivered in a 3x3mm TDFN Package



RECOMMENDED MAXIMUM OUTPUT POWER vs INPUT VOLTAGE

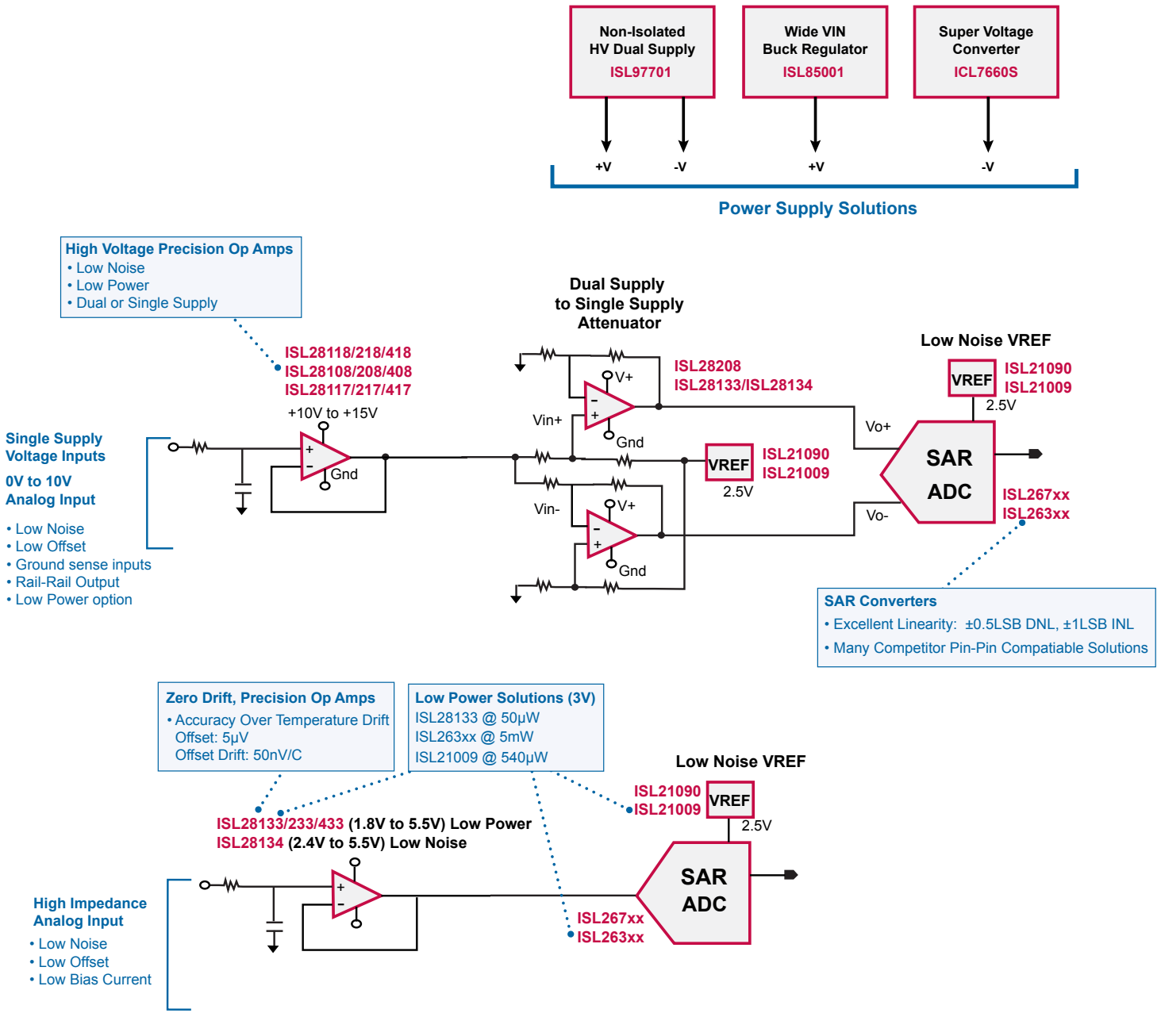
Highly Integrated Design Reduces External Components



NOTE: VOUT = (390k + 39k)/39k*1.15V = 12.65V

DCS (Distributed Control Systems) Application

High Voltage and Low Voltage, Low Power Solutions For Distributed Control Systems



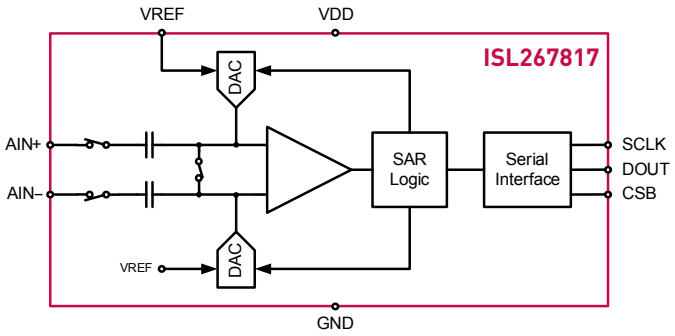
12-Bit SAR ADC: ISL2671286, ISL267817

Low Cost SAR A/D Converter Family

Key Features

- 100% Drop-In Compatible with Performance Equal or Better than Highest Grades
- Improved Alternative to Popular Competing Devices
- Simple SPI-Compatible Serial Digital Interface
- Guaranteed No Missing Codes
- Low Operating Power
  - 2.15mW (200kSPS)
- Power-Down Current Between Conversions: 3µA
- Excellent Differential Non-Linearity (1.0LSB max)
- Available in MSOP, SOT-23 and SOIC Packages

Block Diagram



Intersil P/N	Competitor's P/N	Device Description	Resolution (bits)	Conversion Rate (kSPS)	Packages (All 8 lead)
ISL267440 (Coming soon)	AD7440 (ADI)	10 Bit 1MSPS SAR ADC	10	1000	SOT-23, MSOP
ISL267450 (Coming soon)	AD7450 (ADI)	12 Bit 1MSPS SAR ADC	12	1000	SOIC, MSOP
ISL267450A (Coming soon)	AD7450A (ADI)	12 Bit 1MSPS SAR ADC	12	1000	SOT-23, MSOP
ISL267452 (Coming soon)	AD7452 (ADI)	12 Bit 555kSPS SAR ADC	12	555	SOT-23
ISL2671286 (Sampling)	ADS1286 (TI)	12 Bit Single Ended 20kHz SAR ADC	12	20	SOIC
ISL267817 (Sampling)	ADS7817 (TI)	12 Bit 200kSPS SAR ADC	12	200	SOIC, MSOP
ISL26708 (Coming soon)	Proprietary	8 Bit 1MSPS SAR ADC	8	1000	3x3 DFN, SOT-23
ISL26710 (Coming soon)	Proprietary	10 Bit 1MSPS SAR ADC	10	1000	3x3 DFN, SOT-23
ISL26712 (Coming soon)	Proprietary	12 Bit Single Ended 20kHz SAR ADC	12	1000	3x3 DFN, SOT-23



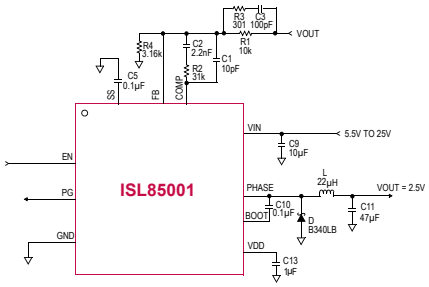
Integrated FET Buck Regulators: ISL85001

1A, High V_{IN} STD Buck Regulator

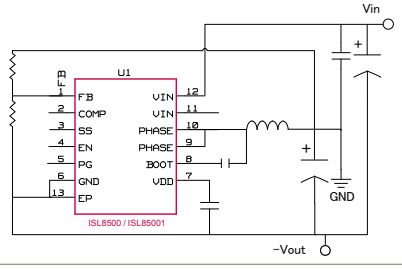
Key Features

- Standard Buck Controller with Integrated Switching Power MOSFET
- Integrated Boot Diode
- Wide Input Voltage Range
  - Fixed 5V ±10%
  - Variable 5.5V to 25V
- PWM Output Voltage Adjustable from 0.6V to 19V with Continuous Output Current up to 1A
- Externally Adjustable Soft-Start Time
- "Power OK" and "Enable"

Typical Application : Positive Vout



Typical Application : Negative Vout



RS-485/RS-422 Transceivers: ISL315xE, ISL317xE

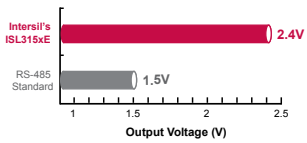
RS-485/RS-422 Family of Transceivers with the Highest Noise Immunity and ESD Protection in Small Packages

Key Features

- 60% Higher Output Voltage. 2.4V min vs. typical 1.5V min
- IEC61000 ESD Protected I/O Pins
- True 1/8 Unit Load

Enhanced Noise Immunity

60% Higher Output Voltage (ISL315xE)

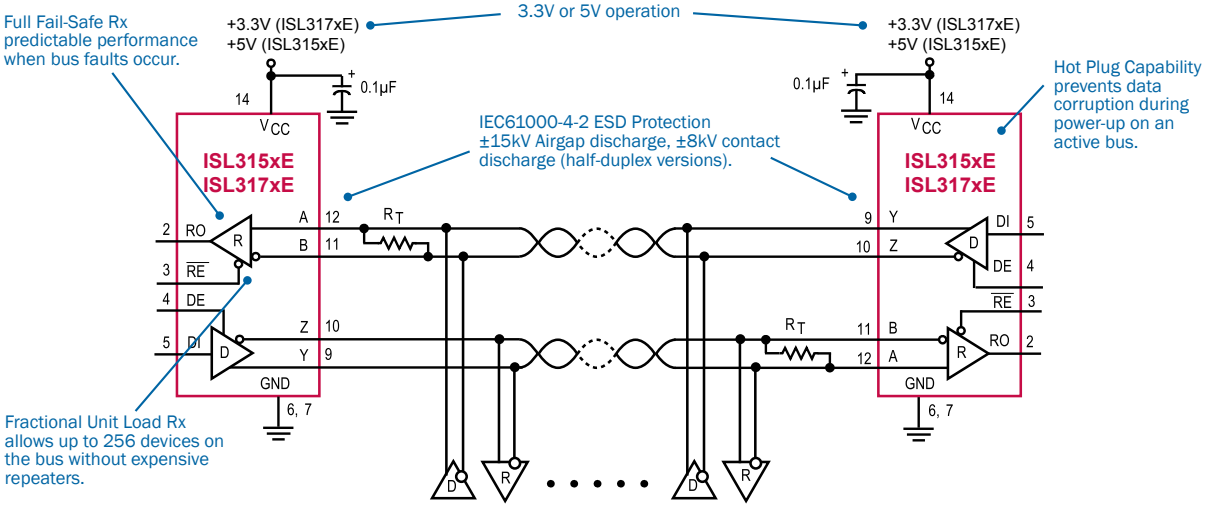


Provides enhanced noise immunity and can drive longer cable lengths or more cable terminations.

Space-saving Small Package



Typical Operating Circuit



3V-5.5V RS-485/RS-422 Transceivers with Fractional UL, 15kV ESD, Full Failsafe

Device	Devices Allowed on Bus	Half/Full Duplex	Data Rate (Mbps)	I_S EN/DIS (µA)	SHDN I_{CC} (µA)	V_{CC} Range (+V)	Package
5V							
ISL3150E	256	Full	0.115	800/700	0.07	4.5 to 5.5	10 Ld MSOP, 14 Ld SOIC
ISL3152E	256	Half	0.115	800/700	0.07	4.5 to 5.5	8 Ld MSOP, 8 Ld PDIP, 8 Ld SOIC
ISL3153E	256	Full	1	800/700	0.07	4.5 to 5.5	10 Ld MSOP, 14 Ld SOIC
ISL3155E	256	Half	1	800/700	0.07	4.5 to 5.5	8 Ld MSOP, 8 Ld SOIC
ISL3156E	256	Full	20	800/700	0.07	4.5 to 5.5	10 Ld MSOP, 14 Ld SOIC
ISL3158E	256	Half	20	800/700	0.07	4.5 to 5.5	8 Ld MSOP, 8 Ld SOIC
3.3V							
ISL3170E	256	Full	0.25	510/480	0.01	3.0 to 3.6	10 Ld MSOP, 14 Ld SOIC
ISL3172E	256	Half	0.25	510/480	0.01	3.0 to 3.6	8 Ld MSOP, 8 Ld SOIC
ISL3173E	256	Full	0.5	510/480	0.01	3.0 to 3.6	10 Ld MSOP, 14 Ld SOIC
ISL3175E	256	Half	0.5	510/480	0.01	3.0 to 3.6	8 Ld MSOP, 8 Ld SOIC
ISL3176E	256	Full	20	510/480	0.01	3.0 to 3.6	10 Ld MSOP, 14 Ld SOIC
ISL3178E	256	Half	20	510/480	0.01	3.0 to 3.6	8 Ld MSOP, 8 Ld SOIC

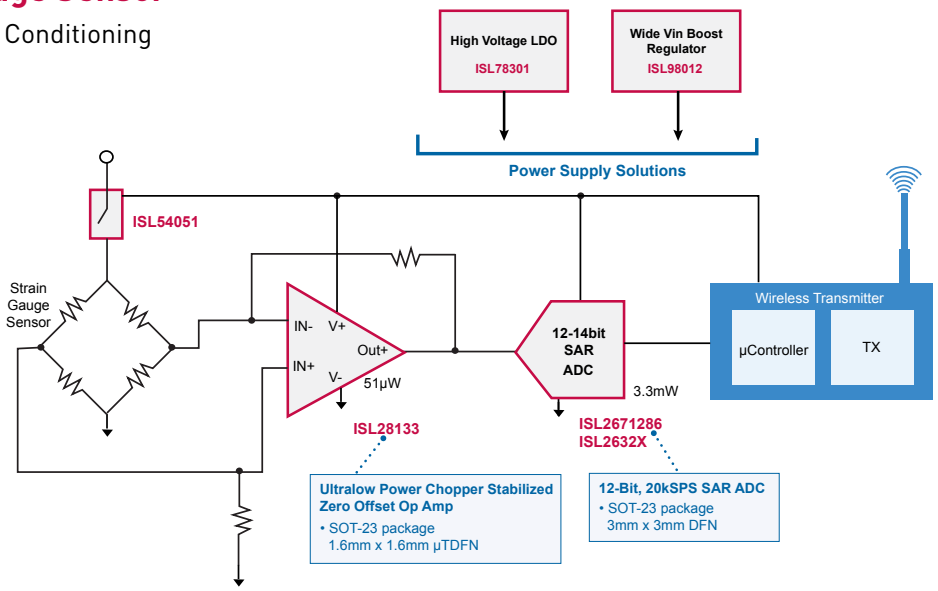
The ISL3261x single Tx/Rx RS-485/422 operate at the industry's lowest supply voltage, 1.8V, while drawing very little power. Designers can easily meet strict power budgets for battery and remote sensing applications.

1.8V RS-485/422 Tx, Rx, and Transceivers with Ultra Low Supply Current for Remote or Solar Powered Sensor Communication

Part Number	Tx	Rx	Supply Range	Data Rate kbps	I_{CC} (µA) max	Shut-down Current (µA) max	ESD rating	Pkg
ISL32610E	0	1	1.8-3.6V	256/500	110	N/A	IEC61000	SOT23
ISL32611E	0	1	1.8-3.6V	256/500	110	7	IEC61000	SOT23
ISL32612E	0	1	1.8-3.6V	256/500	110	7	IEC61000	SOT23
ISL32613E	1	0	1.8-3.6V	256/500	80	2	IEC61000	SOT23
ISL32614E	1	0	1.8-3.6V	256/500	80	2	IEC61000	SOT23
ISL3260xE (coming soon)	1	1	1.8-3.6V	128/460	85	1	IEC61000	SOIC/ MSOP

Wireless Strain Gauge Sensor

Low Power Analog Signal Conditioning



Evalboard Available!

5V Op Amps: ISL28233, ISL28433

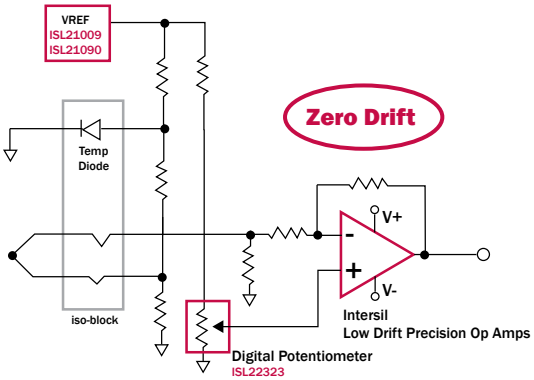
Micropower, Chopper Stabilized, RRIO Operational Amplifiers

The ISL28233 and ISL28433 are dual and quad micropower, chopper stabilized operational amplifiers that are optimized for single and dual supply operation from 1.8V to 6.0V. Their low supply current of 18µA and wide input range enable the ISL28233, ISL28433 to be excellent general purpose op amps for a wide range of applications.

Key Features

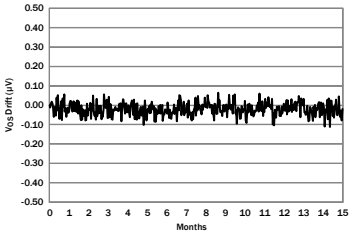
- Low Input Offset Voltage: 6µV, Max.
- Low Offset Drift: 0.05µV/°C, Max.
- Input Bias Current: 180pA, Max.
- Noise (0.01Hz to 10Hz): 1.0µV$_{P-P}$, Typ.
- Quiescent Current (per amp): 8µA, Typ.
- Single Supply Range: 65V to +6.0V
- Temperature Range: -40°C to +125°C
- Rail-to-Rail Inputs and Output

Zero Drift



Typical Application Circuit - Temperature Measurement

Best in Class Performance for Precision and Drift



Long Term V_{OS} Drift

Part Number			Supply Voltage (V)		Rail-To-Rail		Vos Max @ 25°C	TCVos Max	Ib Max @ 25°C	CMRR min @ 25°C	PSRR min @ 25°C	Is Max @ 25°C	GBW	Slew Rate	Noise 0.1 to 10Hz	Voltage Noise @ 1kHz	Package		
Single	Dual	Quad	Min	Max	In	Out	µV	µV/°C	nA	dB	dB	mA	MHz	V/µs	µVpp	nV/√Hz	Single	Dual	Quad
ISL28133*	ISL28233	ISL28433	1.8	5.5	Yes	Yes	6	0.05	0.18	118	110	0.025	0.4	0.2	1	65	SC70, SOT23, TDFN	MSOP, SOIC, TDFN	SOIC, TSSOP, TDFN
ISL28134			2.25	6	Yes	Yes	2.5	0.015	0.3	120	120	0.900	3.5	1.5	0.25	10	SOIC		

*Some specifications will differ, please check data sheet for actual parameters and/or conditions

Additional Recommended Industrial Products

	Where Used	Part Numbers	Key Features / Advantages
Op Amps	Analog Input Modules Sensor Signal Conditioning Gain Blocks, Filtering Output Drivers	ISL28127, ISL28127	40V, Ultra Low Noise, Low V_{OS} & Drift
		ISL28117, ISL28217, ISL28417	40V, Low Noise, Low V_{OS}, Low I_{BIAS}, Low Power, Low TC V_{OS} Drift
		ISL28107, ISL28207, ISL28407	40V, Ultra Low I_{BIAS} Drift, Low V_{OS} &, Low Power
		ISL28108/208/408	40V, Low Power, Single Supply, RRO OPA
		ISL28118/218	40V, Low Noise, Single Supply, RRO OPA
		ISL28110/210	40V, Low Noise, JFET Input OPA
		ISL28176, ISL28276, ISL28476	5V, Low Power, Low Noise, No V_{CM} Distortion
		ISL28113, ISL28213, ISL28413	5V Low Cost 2MHz CMOS OPA
		ISL28130/ISL28230/ISL28430	5V Low Cost, MicroPower OPA
		ISL28133/ISL28233/ISL28433	5V MicroPower, Chopper Stabilized OPA
		ISL28134	5V, Low Noise, Chopper Stabilized OPA
		ISL28114, ISL28124, ISL28414	5V Low Cost 5MHz CMOS OPA
Instrumentation Amps	Analog Input Modules Sensor Signal Conditioning	EL8170, ISL28270, EL8173	Low Power, Low Offset, High CMRR, Enable Pin Wide Input Common Mode Range, Rail to Rail Input and Output
Voltage Reference	Sensor Calibration & Bias ADC Reference CPU Reference	ISL21090	36V Low Noise Bandgap Reference, High Accuracy
		ISL21009	16V Low Power and Low Noise, High Accuracy
		ISL21060	5V Micro Power, V_{OUT} Force & Sense
		ISL60002	5V Ultra Low Power, High Accuracy
Interface	Non Isolated Interface to Micro Controller	ISL317xE	3V IEC6000 ESD RS485 w/ Hot Plug & Fail Safe
		ISL315xE	5V IEC6000 ESD RS485 w/ Hot Plug & Fail Safe
		ISL328x/9x	Single Tx/Rx RS-485/422
		ISL32x7xE	Quad Tx/Rx RS-485/422
		ISL81387, ISL41387	±15kV ESD 5V, Dual Protocol (RS-232/RS-485)
		ISL3330/1/2/3	Single/Dual Channel ±15kV ESD 3V, Dual Protocol (RS-232/RS-485)
Switch/Mux	Direct Sensor Input to AFE Between Input Amp and ADC Between Output Module DAC and Actuator Driver	DG409 DG408	40V Supply, Low R_{ON}, Low Charge Injection, Wide Input Voltage Range 16:1 SE or 8:1 Diff Options
		HI-506, HI-507 HI-508, HI509	40V Supply, 70V Over Voltage Protection, Wide Input Voltage Range 16:1 SE, 8:1 Diff or 8:1 SE, 4:1 Diff, Options
Digital Potentiometers (DCPs)	Sensor Calibration & Bias Input Module Amp Gain Adjustment Output Module Amp Gain Adjustment	ISL22316, ISL22326, ISL22346	128 Tap, 125°C Non Volatile, Low Noise, Low Power, I^2C Interface, Shutdown
		ISL96017	128 Tap, Non Volatile, I^2C , DCP with 16k bits User Memory, Small Package
		ISL22317	128 Tap, 1% Accurate Non Volatile, I^2C Interface DCP
		ISL95811	256 Tap, Non Volatile, Low Power, I^2C Interface DCP with 5 Bytes of User Memory
		ISL22313, ISL22323, ISL22343	256 Tap, Dual Supply, Non Volatile, Low Power, I^2C Interface
		ISL22414, ISL22424, ISL22444	256 Tap, Dual Supply, Non Volatile, Low Power, SPI Interface
RTC	External Micro Controller Clock	ISL12022, ISL12023	2:1 RTC + Temp Sensor, Many Control Functions
		ISL12020M, ISL12022M	3:1 RTC + Temp Sensor + Crystal, 5ppm Temp Accuracy
		ISL12057, ISL12058, ISL12059	1.8V - 3.6V, Low Power, Low Cost Basic RTC

	Where Used	Part Numbers	Key Features / Advantages
Switching Controllers	High Current Distributed Rail Processor/FPGA Power	ISL8107, ISL8105A, ISL8118, ISL6525	Easy to Use Controllers, Input Voltage Range up to 75V
		ISL8120, ISL9440	Multi Output Regulators, Interleaved Output Voltages
Isolated Controllers	Isolated Power Conversion	ISL6840-ISL6845	1.5% Precision Error Amp, Fast Peak Current Sensing
		ISL6721-23	Fast Transient Response, Integrated Soft-start, OV, OI, UV Protection
Switching Regulators	Point of Load Regulation	ISL8500, ISL8501, ISL85033	Wide V_{IN} Regulators
		ISL8013A/14A, ISL8022	Single and Dual High Current Highly Configurable Regulators
		ISL9103/4	Low I_Q High Frequency Regulator
	Single Output Boost Regulators	ISL97701	Boost Regulator with Integrated Schottky and Input Disconnect Switch
		ISL98012	Wide Input Voltage, Adjustable Frequency Boost Regulator
		ISL97516	600kHz/1.2MHz PWM Step-Up Regulator
		ISL97519	1% Output Accuracy PWM Step-Up Regulator with 1.294V Reference
		ISL97519A	1% Output Accuracy PWM Step-Up Regulator with 1.24V Reference
		ISL97656	High Current PWM Step-Up Regulator with 1.24V Reference
LDO	Low Noise Point of Load Regulation	ISL80101/2/3	High Performance 1A/2A/3A LDO
		ISL6719, ISL6720A	High Input Voltage Up to 100V
		ISL9003A/ISL9000A	Single and Dual 150mA Low Noise with Low I_Q, High PSRR
		ISL78302, ISL78307	Low Power Linear Regulator for Automotive Applications
		ICL7660, ICL7660A, ICL7660S	Charge Pumps (can be used as +ve to -ve voltage converter)
Power Monitors	Monitoring Voltage Rails	ISL88002, ISL88031	Ultra Low Power Voltage Supervisor, Single to Quad Monitors
		ISL6132	Dual Output Control, 2 UV, 2 OV Monitors
Power Sequencers	Sequencing Voltage Rails On/Off	ISL6123-28	Quad Supply Sequencing

Design Resources

iSIM

Advanced design tool for creating complex solutions in 4 easy steps.

www.intersil.com/isim

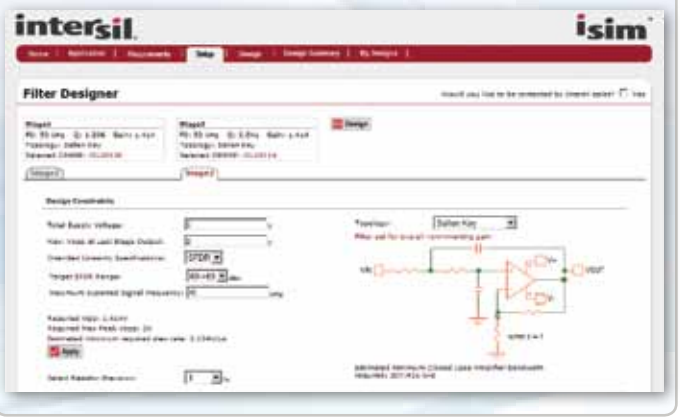
1 Design Requirements Interview

Simply enter your design requirements, such as input and output voltage and current etc.



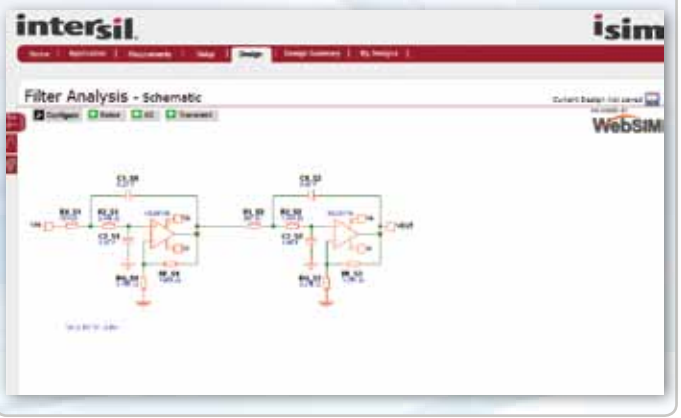
2 Design Configuration

iSim automatically calculates optimum loop compensation and calculates appropriate values for resistors and capacitors.



3 Design Verification by Remote Simulation

Your design is displayed in an Online Schematic, which allows you to test your application in a virtual test bed. iSim allows AC, transient analysis.



4 Summary, Download, Design & More

Once the design has been verified, iSim generates a Bill of Materials and a comprehensive design report including simulation results, schematic and design data.



NORTH AMERICA

WEST COAST
Intersil Headquarters
1001 Murphy Ranch Road
Milpitas, CA 95035
(TEL) 408-432-8888
(FAX) 408-434-5351
1-888-INTERSIL
1-888-468-3774

EAST COAST
1650 Robert J Conlan Blvd NE
Palm Bay, FL 32905
(TEL) 321-724-7000
(FAX) 321-729-7320
1-888-INTERSIL
1-888-468-3774

EUROPE

Oskar-Messter-Str. 29
D-85737 Ismaning
Germany
(TEL) +49-89-46263-0
(FAX) +49-89-46263-148

ASIA PACIFIC

Suite 501, 5/F,
Ocean Centre, Harbour City,
Tsimshatsui, Kowloon
Hong Kong
(TEL) +852-2709-7600
(FAX) +852-2730-1433

JAPAN

6F, Mita Nitto Daibiru
3-11-36, Mita, Minato-ku
Tokyo, 108-0073 Japan
(TEL) +81-3-5439-2311
(FAX) +81-3-5439-2300

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