LUMISSIL MICROSYSTEMS

2026

Automotive Semiconductor Solutions

We Deliver IA for AI

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About Lumissil

Lumissil Microsystems is a fabless semiconductor company specializing in analog and mixed-signal technologies, serving a broad range of markets including automotive, consumer, industrial, and medical. We are a recognized leader in LED driver solutions, supporting both low- to mid-power RGB color mixing and high-brightness lighting applications. In the electric vehicle (EV) space, Lumissil is a key provider of HomePlug Green PHY solutions for EV communication networks.

Our portfolio includes LED drivers, power management ICs, application-specific microcontrollers (MCUs), capacitive sensors, and multimedia microprocessors (MPUs) built on our proprietary XBurst CPU architecture, designed to meet the needs of diverse, performance-driven applications. We also offer low-power capacitive touch sensing solutions, automotive-grade LIN and CAN transceivers, and state-machine-based smart components.

Lumissil designs automotive ICs that meet rigorous industry standards, including ISO 26262 functional safety and AEC-Q100 for automotive reliability. Our devices support a wide range of communication protocols such as LIN, CAN, I²C, SPI, single-wire, and UART, enabling communication interfaces for next-generation automotive and industrial systems. Lumissil is committed to designing semiconductor solutions with innovation and reliability to help power tomorrow's intelligent, connected systems.

Quality and Long-Term Support

All automotive devices and packages are qualified according to the Automotive Electronics Council (AEC) requirements (AEC-Q100) and most are designed to be compliant with ISO 26262 functional safety standards. Lumissil's automotive product development and manufacturing sites are ISO9001 and ISO/TS-16949 certified.

We are committed to long term support and reliable product availability to ensure longevity of your designs.

Samples Availability and Support

This selection guide provides an overview of Lumissil automotive products portfolio. Samples and evaluation boards for all products are available to qualified customers. Please contact your sales representative or distributor for your free sample needs.

Contact Us
Headquarters
1623 Buckeye Dr.
Milpitas, California 95035

Website
www.lumissil.com

Request for more information
marketing@lumissil.com
sales@lumissil.com

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ASIL-B

ASIL-B (Automotive Safety Integrity Level B) is part of the ISO 26262 standard, which addresses functional safety in road vehicles. ASIL-B represents a moderate level of risk, where system failures could lead to discomfort or minor injuries. It's a common requirement in many automotive systems like body electronics, lighting, and infotainment, where consistent performance and fault tolerance are essential but not mission-critical. Achieving ASIL-B compliance requires components to support safety mechanisms like diagnostics, monitoring, and redundancy.

Lumissil, offers a range of automotive-grade mixed-signal, LED drivers, and MCU products designed with ASIL-B compliance. Our solutions provide built-in diagnostics, low EMI performance, robust thermal and voltage handling—key features that help OEMs streamline safety certification. By integrating these features at the component level, Lumissil enables faster development cycles, reduced system complexity, while meeting industry safety requirements.

Devices with ASIL-B

Part Number	Release Status
IS32FL3105A/B/C/D	Q4, 2025
IS32FL3107A/B/C/D	Q1, 2026
IS32FL3257	Q1, 2026
IS32FL3259	Q2, 2026
IS32LT3136	Q4, 2025
IS32LT3138A	Q4, 2025
IS32LT3151C/D	Q4, 2025
IS32LT3152B	RELEASED
IS32LT3153B	RELEASED
IS32LT3365A/B	RELEASED
IS32LT3960	Q2, 2026
IS32LT3964	Q1, 2026
IS32CS9202	RELEASED

Copper Bonding

Lumissil is transitioning from gold to copper bonding wires in its IC packaging to improve both cost-efficiency and electrical performance. Copper offers approximately 30% higher electrical conductivity than gold, enabling better signal integrity and lower power loss; a benefit for automotive applications. As material costs continue to rise, adopting copper wire helps Lumissil maintain competitive pricing while meeting customer expectations for high-quality, cost-effective solutions.

To ensure long-term reliability, all copper wire bonded products undergo qualification to the stringent AEC-Q100 and AEC-Q006 automotive standards. These include more demanding stress tests such as 1000-cycle temperature cycling and post-stress destructive physical analysis (DPA) following HAST, HTSL, and PTC testing. Going forward, Lumissil recommends copper wire versions as the default for new projects, reserving gold wire only where specifically required by customers.

To distinguish whether a Lumissil device uses copper bonding wire and not gold, a "C" character is added to the ordering part number. Only devices with copper wire have this identifier inserted between the "Solder Type" and "Temperature Grade" fields in the orderable part number. Gold wire devices will not have a designator inserted, thereby ensuring traceability and differentiation between gold and copper wire devices. Although the package outlines remain unchanged, customers should refer to the latest datasheets and orderable part number to confirm the bonding wire type.

Devices with Copper Wire Bonding

Part Number	Package
IS32FL3246A-QWLCA3-TR	WFQFN-44
IS32FL3248-LQLCA3-TR	eLQFP-64
IS32FL3749-TQLCA3-TR	eTQFP-48
IS32FL3250-QWLCA3-TR	WFQFN-40
IS32LT3132-ZLCA3-TR	eTSSOP-24
IS32LT3132-QWLCA3-TR	WFQFN-32
IS32LT3137-QWLCA3-TR	WFQFN-32
IS32LT3138-QWLCA3-TR	WFQFN-32
IS32LT3140C-ZLCA3-TR	eTSSOP-14
IS32LT3140D-GRLCA3-TR	ESOP-8
IS32LT3163-ZLCA3-TR	eTSSOP-16
IS32LT3365A-LQLCA3-TR	eLQFP-48
IS32LT3365B-LQLCA3-TR	eLQFP-48
IS32LT3958B-ZLCA3-TR	eTSSOP-20
IS32PM3510-ZLCA3-TR	eTSSOP-16
IS32AP2123A-ZLCA3-TR	eTSSOP-16

Interior Automotive

A car's interior "comfort rating" is an important differentiating factor since increasingly car buyers value comfort over engine power. It is up to car OEMs to develop intelligent controls complemented with lighting to make for a pleasant cabin experience. Today's cars and evolving autonomous vehicles rely on microcontrollers and LED lighting to enhance the driver/passenger experience and safety. For example, the instrument cluster located behind the steering wheel houses a variety of gauges and indicators to display the vehicle's status. At a glance, it provides vehicle driving information such as gasoline or charge level, speed, travel distance, and hazard alerts. In combination with visual alerts, haptic technology such as steering wheel and seat vibrations serve to augment a driver's awareness. In combination, color lighting and vibration serve as "gentle" attention grabbing notifications.

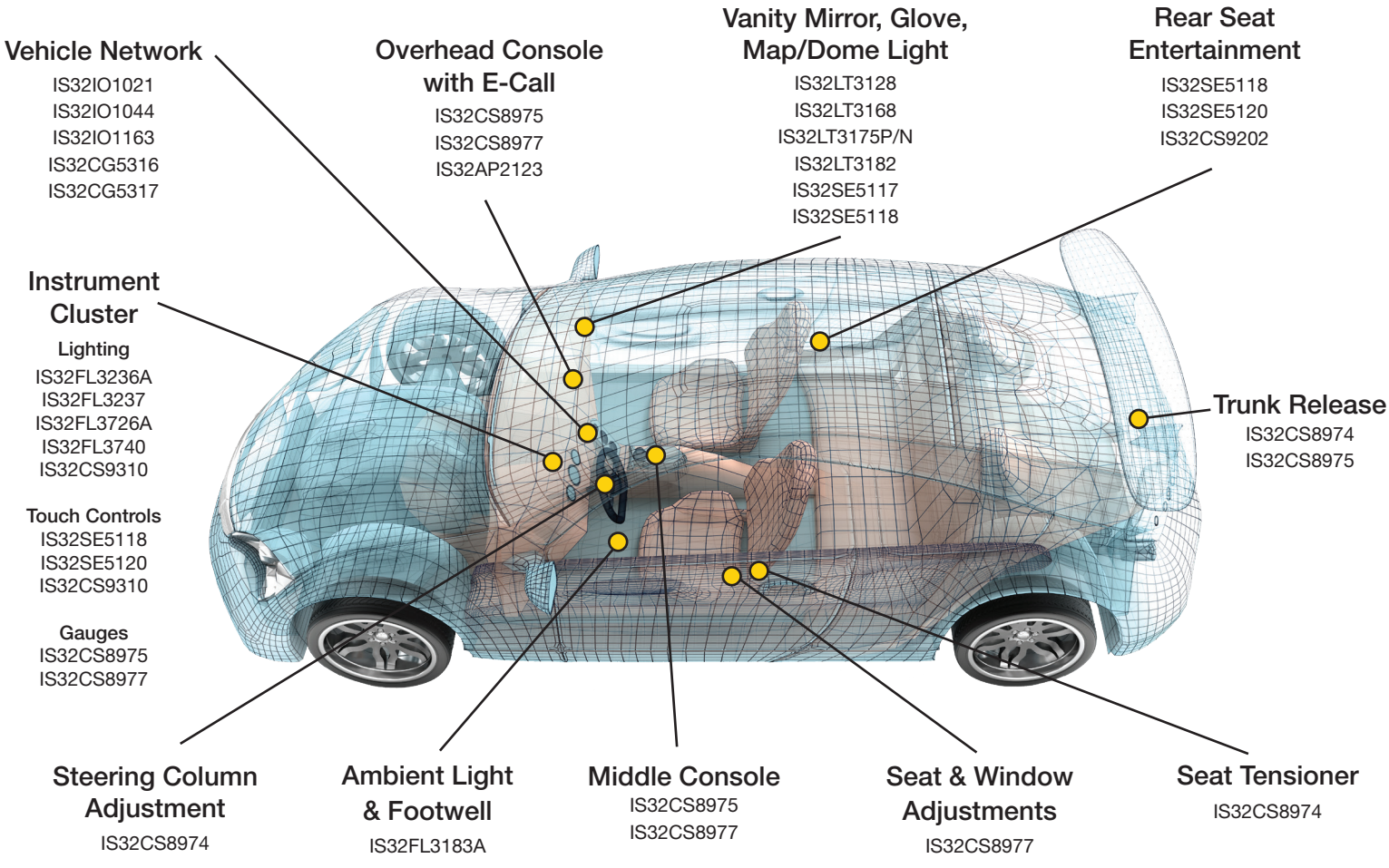
Lumissil offers a broad portfolio of silicon solutions to increase a vehicle's cabin comfort level. Our LED drivers for interior accent lighting and instrument cluster applications provide an appealing interior experience. Our microcontrollers for touch sensing and mechanical control enhance the HMI (Human Machine Interface) experience. Lumissil's automotive IC solutions are AEC-Q100 qualified, meaning they have passed the specified stress tests to guarantee automotive quality and reliability.

Interior lighting applications:

- Instrument cluster
- Infotainment and multimedia display
- Glove box and vanity mirror lighting
- Overhead cabin lighting
- Color accent lighting in doors, seating, dashboard/console

Microcontroller applications:

- Microcontroller applications
- Instrument cluster gauges
- Overhead/middle console
- Steering wheel and seat adjustment
- Touch sensors



Exterior Automotive

Automotive exterior refers to all the lights and controls around the outer perimeter of a vehicle, whether it is a car, motorcycle, bus, or truck. Exterior lighting provides a competitive differentiation to enhance a vehicle's perceived value and brand recognition. Well-positioned and contoured lighting helps the vehicle stand out while providing informative signaling and illumination functions. While microcontrollers are unseen, they are necessary for door handle sensing, moon roof control, and even performing taillight animations.

Lumissil provides AEC-Q100 LED drivers and microcontrollers for advanced automotive applications. These intelligent LED controllers take car safety to the next level by enabling dynamic signaling on rear combination lights, dual intensity for daytime running lights, synchronized welcome lights and glare free headlights.

Informative/Intelligent Signaling:

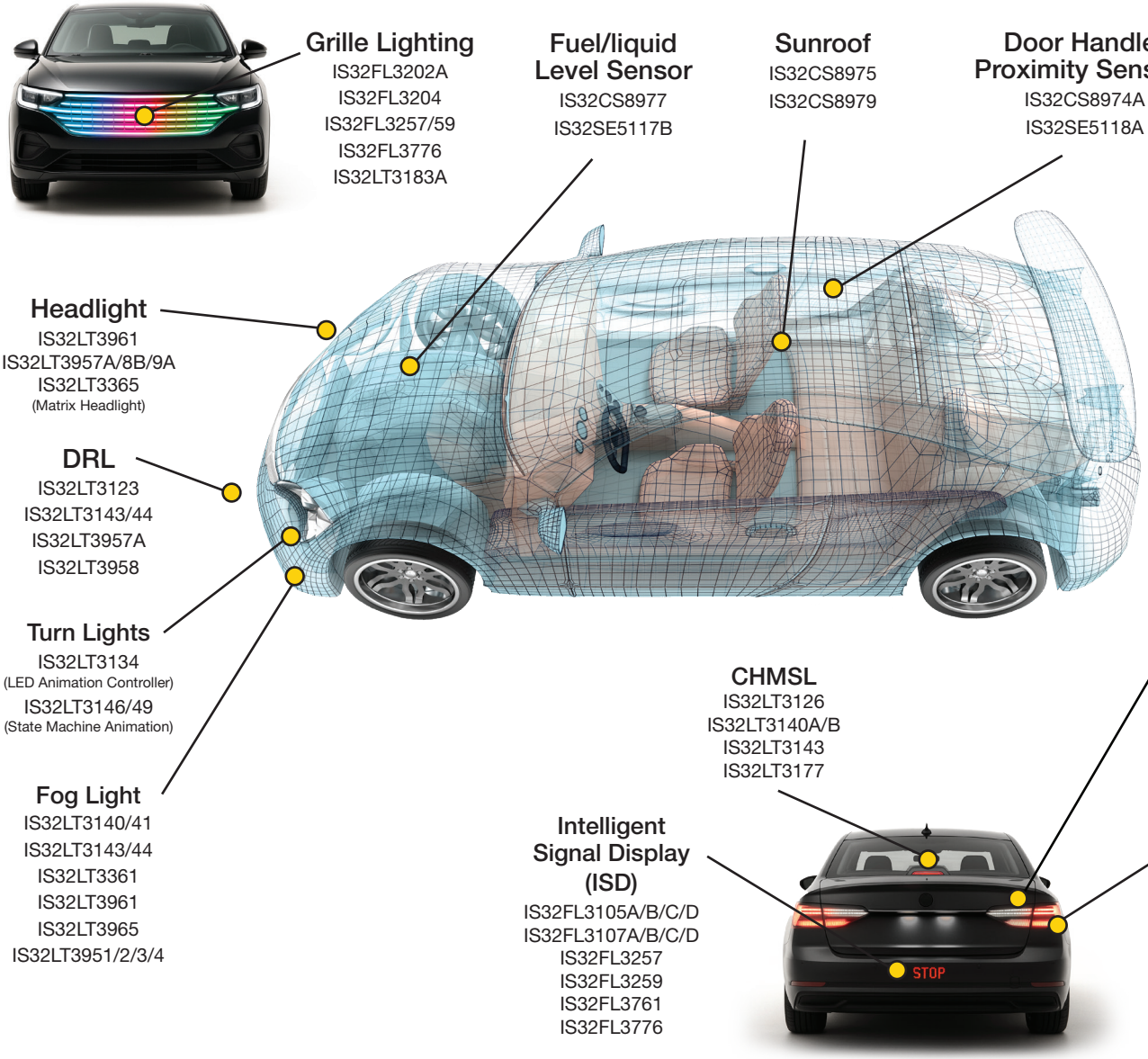
- Rear Combination Light (RCL)
- Center High-Mounted Stop Light (CHMSL)
- Daytime Running Light (DRL)
- Intelligent Signal Display (ISD)
- Turn/Emergency Lights
- Welcome Light

Illumination:

- Head Light
- Fog Lamp
- Reverse Light
- License Plate

Microcontroller:

- Touch and proximity sensing
- Sunroof & trunk control



Dome/Map/Vanity/Glove/Trunk/Door-Puddle

Linear LED Drivers

- Single to triple channel configurable current source
- PWM or automatic Gamma-corrected luminosity fading
- Momentary/latched/proximity/capacitive/magnetic switch control
- Fault Protection
- Small package, -40°C to +125°C, AEC-Q100

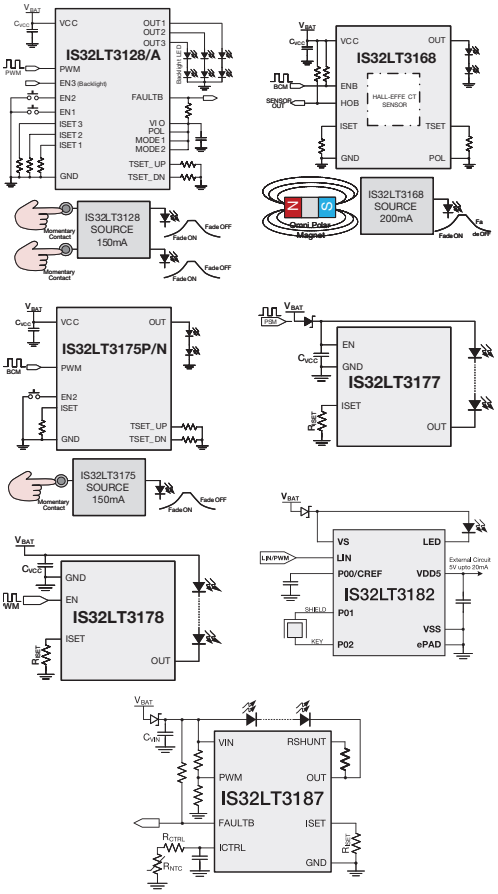
Description

LED drivers with integrated gamma-corrected fade ON/OFF enable smooth and visually pleasing lighting transitions, ideal for interior automotive applications. Lumissil offers single and triple-channel LED drivers with integrated switch options, including momentary (with internal debounce), latched, magnetic or capacitive touch controls. For example a central map/dome light application benefits from a triple-channel driver (two for bright LEDs and one for button switch backlighting) while a glove compartment application can use a single-channel driver. For LIN-based systems, a version with a LIN bus interface is also available.

Applications

- Dome
- Map
- Glove box
- Vanity mirror
- Trunk light
- Door-Puddle

Application Circuits



Product Offerings

Part Number	# of Channels	Current (mA)	Switch	Supply	Package/Pin
IS32LT3126	2	25 to 150	Power Supply Modulation Logic Level PWM	5V to 42V	eTSSOP-16
IS32LT3128/A	3	2-CH: 20 to 150, 1-CH: 30	Momentary or latched	5V to 42V	eTSSOP-20
IS32LT3168	1	20 to 200	Hall Sensor	6V to 28V	SOP-8-EP
IS32LT3175P/N	1	20 to 150	Momentary	5V to 42V	SOP-8-EP
IS32LT3177/8	1	10 to 200	Power Supply Modulation Logic Level PWM	5V to 40V (IS32LT3177) 2.9V to 40V (IS32LT3178)	SOT23-6, SOP-8-EP
IS32LT3182	1	0 to 150	Capacitive/Proximity	5.5V to 18V	SOP-8-EP
IS32LT3187	1	0 to 350	Power Supply Modulation Logic Level PWM	4.5V to 40V	SOP-8-EP

RGB Ambient Lighting

Automotive ambient lighting provides attractive and functional interior illumination to enhance the occupant's comfort and well being. Lumissil's ambient LED driver portfolio support up to 16-bit PWM resolution for creating spectacular and accurate colors. Innovative noise cancellation technologies such as spread spectrum, phase delay drastically reduces electromagnetic emissions. Low shutdown current minimizes energy consumption while fault reporting capabilities make these devices ideal for reliable operation.

Applications

- Ambient Lighting
- Footwell
- Puddle lamp
- Cluster telltale
- Indicators
- Knob/button backlight

Interior Cabin Linear Driver

- Operating voltage
  - High Brightness: 5V to 42V
  - RGB : 2.7V to 5.5V
  - High Voltage I/O: up to 16V
- RGB Driver
  - I2C or SPI Bus Configurable
    - 16-bit, 8+8-bit PWM color mixing
    - Individual LED addressable and programmable
    - Integrated EMI reduction technology
    - Spread spectrum
    - Staggered outputs and noise canceling channels
  - Multi-channel or matrix topology
- -40°C ~ +125°C; AEC-Q100

Product Offerings

Part Number	# of Channels	Current (mA)	Interface	Type	Package/Pin
IS32FL3207	18	38	I2C	Multi-Ch	WFQFN-28
IS32FL3209	18	78	I2C	Multi-Ch	WFQFN-28
IS32FL3236A	36	38	I2C	Multi-Ch	eTQFP48
IS32FL3237	36	38	I2C	Multi-Ch	eTQFP48
IS32FL3238	18	78	I2C	Multi-Ch	eTSSOP-28
IS32FL3240	30	38	I2C	Multi-Ch	WFQFN-40
IS32FL3265A/B	18	60	I2C/SPI	Multi-Ch	eTSSOP-28
IS32FL3738	6x8	84	I2C	Matrix	eTSSOP-28
IS32FL3746B	18xn (n=1~4)	34	SPI	Matrix	WFQFN-32

Smart LED

IS32FL3105 & IS32FL3107|A/B/C/D|:

- Operating voltage: 3V to 12V
- Individual 16-bit/14+2-bit/13+3-bit/8+8-bit PWM dimming & 6-bit DC scaling
- LumiBus and UART interfaces
- Direct address (up to 25 devices)(A/C)
- LAA (Location Address Assignment) for up to 254 devices(B/D)
- FL3105 uses on-die OTP (One-Time Programmable) memory
- FL3107 uses on-die MTP (Multi-Time Programmable) memory
- Built-in ADC and DC Feedback

IS32LT3183A: LIN Compliant RGB+W LED Driver

- Operating voltage: 5.5V to 18V (40V tolerant)
- 4 channels of current sinks of up to 60mA
  - Reconfigurable to GPIO, SPI/I2C
  - High Color resolution of up to 16-Bit LED color range with LED temperature compensation
- Integrated MCU for LIN protocol handling and LIN message decoding compliant to LIN 2.2A
- Support LIN SNPD (Slave Node Position Detection) using BSM (Bus Shunt Method).

IS32FL3202A & IS32FL3204:

- Operating voltage: 3.5V to 6.5V
- 6-bit dot correction (DC) and 16-bit PWM per channel
- State machine with acceleration algorithms
- LED temperature compensation
- On-die OTP for calibration/binning
- Spread spectrum to reduce EMI
- **FL3204** has 2 Ext temperature sensor pins;
- **FL3202A** has built-in temp sensor.

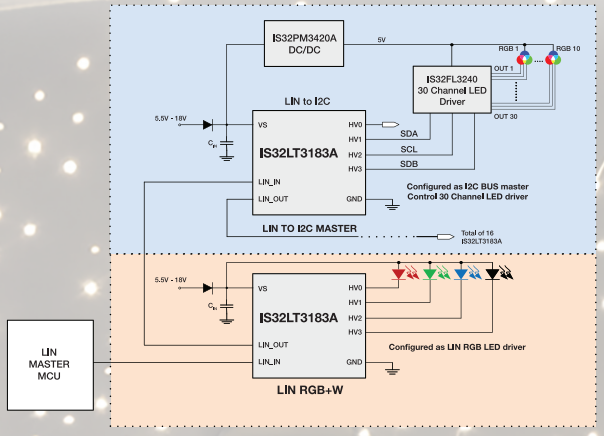
IS32FL3257 & IS32FL3259:

- Operating voltage: 3V to 12V
- Individual 16-bit/14+2-bit/13+3-bit/8+8-bit PWM dimming & 6-bit DC scaling
- Integrated 32-bit ARM Cortex-M0+ MCU (up to
- 32MHz), with 64KB e-Flash, 8KB SRAM (ECC protected)
- **FL3257** uses Lumibus (CAN/UART, up to 2MHz, up to 254 devices)
- **FL3259** uses standard LIN 2.2A/ISO17987 with built-in LIN PHY and auto-addressing
- Built-in ADC and DC Feedback

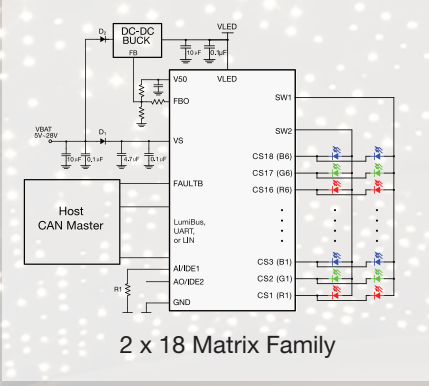
Applications

- Vehicle cabin ambient lighting
- LIN Interface
  - LIN to SPI or LIN to I2C bridging
  - General Purpose MCU for LIN slave node operation
- LumiBus Interface
  - Up to 1022 devices per chain for zonal RGB ambient light
- UART Interface
  - With CRC error detection

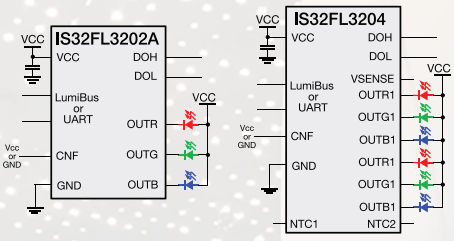
Application Circuits



IS32LT3183A



2 x 18 Matrix Family



Multi-Channel Family

Product Offerings

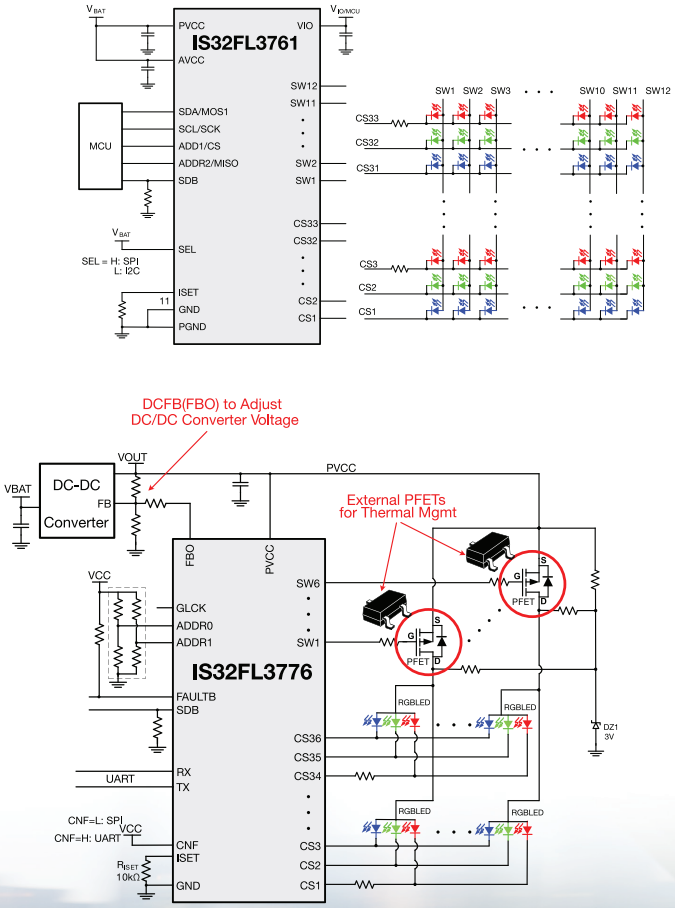
Part Number	# of Channels	Current (mA)	Interface	Type	Package/Pin
IS32FL3105 A/B/C/D	2x18	60	LumiBus (A/B), UART (C/D)	Matrix	WFQFN-32
IS32FL3107 A/B/C/D	2x18	60	LumiBus (A/B), UART (C/D)	Matrix	WFQFN-32
IS32LT3183A	4	60	LIN 2.2A	Multi-Ch	SOP-8-EP
IS32FL3202A	3	63	LumiBus, UART	Multi-Ch	WFDFN-10
IS32FL3204	6	63	LumiBus, UART	Multi-Ch	WFQFN16
IS32FL3257	2x18	60	LumiBus	Matrix	WFQFN-32
IS32FL3259	2x18	60	LIN 2.2A	Matrix	WFQFN-32

Intelligent Signal Display (ISD)

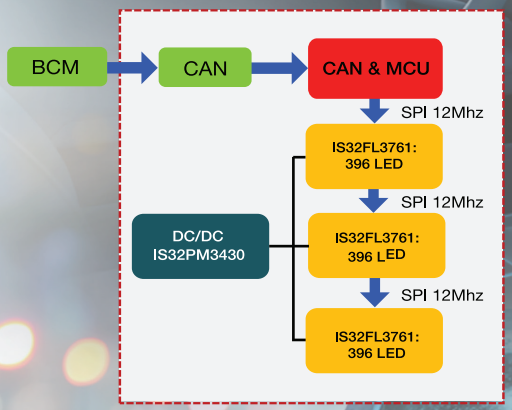
Intelligent Signal Displays are gaining popularity as automakers seek to enhance both safety and brand identity through informative lighting. These advanced systems go beyond traditional turn signals and brake lights by enabling dynamic, context-aware visual communication. From adaptive turn indicators that respond to vehicle speed, to animated welcome and goodbye sequences that personalize the driver experience, ISDs offer a new layer of interactivity and expression. As vehicles become increasingly connected and autonomous, lighting is evolving into a key interface between the car, its occupants, and the outside world by providing visual cues for intentions, warnings, and social interactions.

Lumissil offers LED driver ICs for these ISD applications with support for multi-channel, matrix all with high-resolution PWM control for smooth, flicker-free animations. Their scalable architecture simplifies designs for different lighting zones in the front, rear, and interior. With integrated features like gamma-corrected fade-in/out, configurable timing, and flexible communication interfaces (I²C, SPI, UART or Serial Shift), these drivers enable control over complex lighting patterns. Designed to meet automotive-grade requirements, they enable designers to bring intelligent, expressive lighting concepts to life.

Application Diagram



Example



ISD (Intelligent Signal Display)

Product Offerings

Part Number	Current (mA)	Individual LEDs	Bus Type	Package/Pin
IS32LT3136	35	32	UART	WFQFN-48
IS32LT3138/A	100	18	UART	WFQFN-32
IS32FL3248	33	48	SPI, Serial Shift	eTQFP-64, QFN-64
IS32FL3268	50	24	SPI, Serial Shift	WFQFN-40
IS32FL3761	30	33xn (n=2~12)	SPI, I2C	QFN-60
IS32FL3776	60	36xn (n=2~6)	SPI, UART	WFQFN-60

Serial Shift Interface

Family of 48, 24 and 16 channel constant current and matrix LED drivers with a serial shift control interface.

IS32FL3268 & IS32FL3248 Features

- IS32FL3268 - 24 current sink channels @ 50mA
- IS32FL3248 - 48 current sink channels @ 33mA
- IC Vcc 3.0 ~ 5V with LEDs VLED 4.5 ~ 16v (18V tolerant)
  -Enables multiple LEDs in series
- 33MHz serial-shift or SPI interface
- Individual 16-bit, 8+8-bit dithering, 8+4-bit dithering, 8-bit PWM mode
- Noise Reduction
  - PWM Clock Spread Spectrum
  - 180-degree phase delay
- Protection
  - LED open/short detection
  - Over temperature

IS32FL3726A Features

- 16 current sink channels @ 60mA
- 5V operation, LEDs not stackable
- 30MHz serial-shift interface
- Current accuracy
  - Device-to-Device: < ±2%
  - Channel-to-Channel: < ±4%

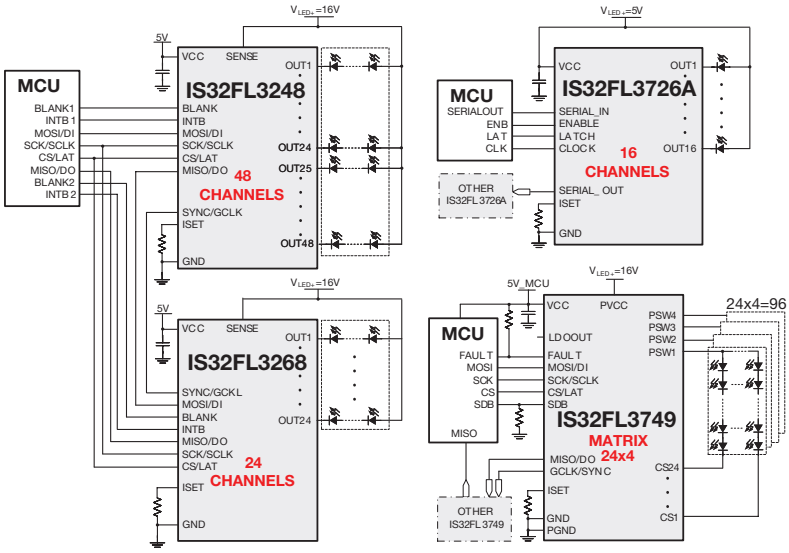
IS32FL3749 Features

- 4x24 Matrix driver supports 96 LED array size
- IC and VLED 4.3 ~ 16V (20V tolerant)
  - Enables multiple LEDs in series
- 33MHz serial-shift or SPI interface
- Individual 16-bit, 8+8-bit dithering, 8+4-bit dithering, 8-bit PWM mode
- Noise Reduction
  - PWM Clock Spread Spectrum\
  - 4 group phase delay
  - LED de-ghosting circuit
- Protection
  - LED open/short detection
  - PSW short
  - Over temperature

Applications

- Automotive LED Back Light
- Automotive Center Information Display
- Automotive Signage

Application Circuits



Product Offerings

Part Number	Current (mA)	Individual LEDs (No Stack)	High Voltage (Stack LEDs)	Bus Type	Package/ Pin
IS32FL3248	33	48	Yes (16V)	SPI, Serial Shift	eTQFP-64 QFN-64
IS32FL3268	50	24	Yes (16V)	SPI, Serial Shift	WFQFN-40
IS32FL3726A	60	16	No (5V)	Serial Shift	QFN-24 SSOP-24 eTSSOP-24
IS32FL3749	60	4x24=96 Matrix	Yes (16V)	SPI, Serial Shift	eTQFP-48

Switching Buck LED Drivers

Description

New vehicles utilize LED headlights due to their efficiency, durability, reliability and refined luminosity control. Basic headlights provide two levels of luminosity control. Advanced headlights systems such as matrix headlight enables refined dimming control of an array of LEDs; such that other in-front vehicles can be glare-free and also made more visible to the driver. Switching LED drivers provides high current at high efficiency.

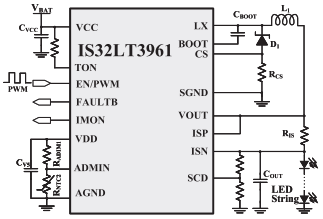
Applications

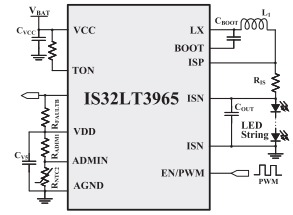
- Headlights
- Daytime Running Lights (DRL)
- Fog & Spot Lights
- Puddle Lamp

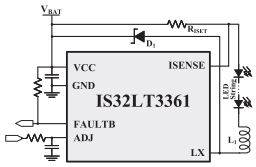
Features

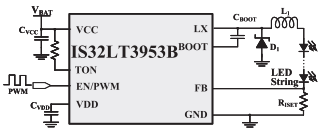
- Analog or Internal/External PWM Dimming
- Dual Channel support
- Fault Protection and Reporting
- -40°C to +125°C or +150°C, AEC-Q100

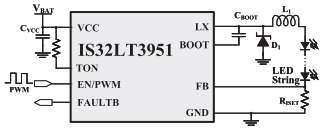
Application Circuits

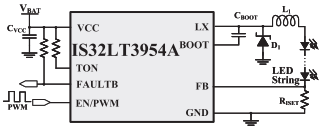




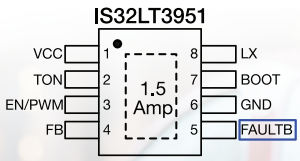


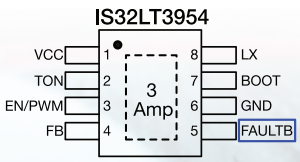


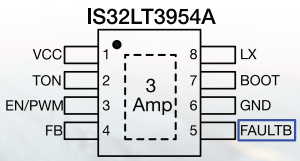


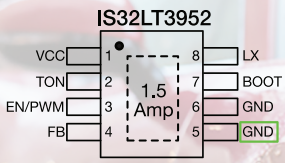


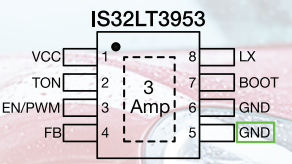
Family of 8-Pin Buck LED Drivers

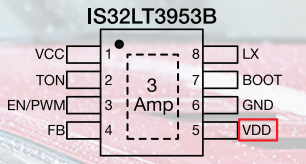












Product Offerings

Part Number	# of Channels	Current (A)	LED Dimming	Fault	Package/Pin
IS32LT3951	1	1.5	PWM	Fault detection & Report	SOP-8-EP
IS32LT3952	1	1.5	PWM	Fault detection only	SOP-8-EP
IS32LT3953/B	1	3	PWM	Fault detection only	SOP-8-EP
IS32LT3954/A	1	3	PWM	Fault detection & Report	SOP-8-EP
IS32LT3961	1	2	PWM, Analog, Bypass MOSFET shunt	Fault detection & Report	eTSSOP-16
IS32LT3963	2	1.6	PWM, Analog	Fault detection & Report	eTSSOP-32
IS32LT3964	2	1.6	Internal PWM, Analog	Fault detection & Report, ASIL-B	eTSSOP-32
IS32LT3965/A	1	3	PWM, Analog	Fault detection & Report	WFCQFN-14

Switching Boost, Buck-Boost, SEPIC LED Driver

Description

Step-up (boost) LED drivers are designed to regulate current through an LED string when the supply voltage is lower than the total forward voltage of the LEDs. In contrast, Buck-Boost and SEPIC LED Drivers regulates current by accommodating input voltages that are either below or above the LED string voltage.

For example, in automotive applications powered by a 12V battery, the actual voltage can fluctuate between 6V and 18V. In such cases, the LED driver must be capable of boosting the voltage when it drops to 6V and bucking it when it rises to 18V, to ensure consistent current regulation.

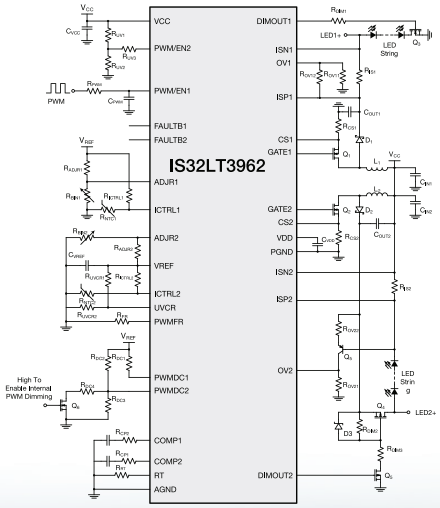
Key Features

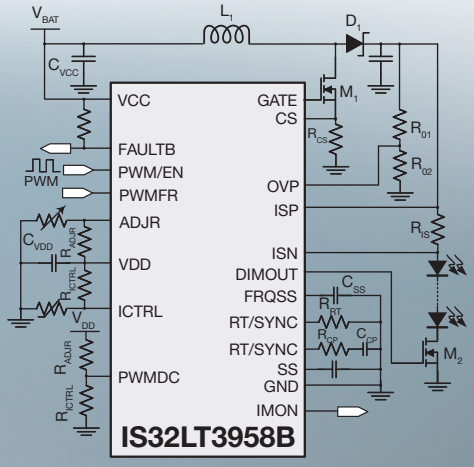
- Wide Operating Range 5V up to 80V (3959A: 4.5V–55V)
- IS32LT3960/62 is a dual-channel controller; all others are single-channel.
- Boost, Buck-Boost, SEPIC, and Buck topologies
- Output current accuracy is ±2.8% to ±3.5% at (–40°C to +125/150°C)
- Supports Analog and PWM dimming (external PWM and/or analog voltage control)
- Excellent Fade-on Control on Low Duty Cycle PWM
- Spread Spectrum and Clock Synchronization to minimize EMI
- High-side Current Sensing
- Fault Protection with reporting

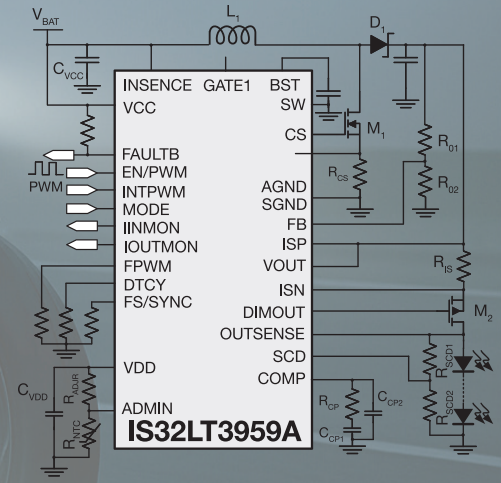
Applications

- Headlight (High + Low beam)
- Daytime Running Lamp (DRL)
- Fog & Spot Lamp
- Backup Light

Application Circuits







Product Offerings

Part Number	Type	Voltage	Current	LED Dimming	Package/Pin
IS32LT3957A	Constant Freq. Buck, Boost, Buck-Boost, SEPIC	5.0 - 75V	External FET	PWM, Analog	eTSSOP-16
IS32LT3958/A	Constant Freq. Buck, Boost, Buck-Boost, SEPIC	5.0 - 75V	External FET	Analog, External PWM, Internal PWM	eTSSOP-20
IS32LT3958B	Constant Freq. Buck, Boost, Buck-Boost, SEPIC	5.0 - 80V	External FET	Analog, External PWM, Internal PWM	eTSSOP-20
IS32LT3959/A	Constant ON-Time Buck, Constant OFF-Time Boost, Buck-Boost	4.5 - 55V	External FET	Analog, External PWM, Internal PWM	eTSSOP-28
IS32LT3960	Constant Freq. Buck, Boost, Buck-Boost, SEPIC	5.0 - 65V	External FET	Analog, External PWM, Internal PWM	eTSSOP-32, WFQFN-32
IS32LT3962	Buck-Boost	5.0 - 80V	External FET	Dual Channel Controller	WFQFN-32

LED Matrix Headlight

Features

IS32LT3365 Matrix Controller (Dimmer):

- LumiBus or UART interface options
- Wide input supply: 4.5V to 55V
- Integrated 12 Series LED Bypass Switches in 4 groups
- 10-bits PWM dimming resolution
- Adjustable PWM frequency with multiple device synch
- I2C EEPROM interface for LED binning and calibration
- Two 10-bits ADC for temperature sensing (via thermistor) of PCB and LEDs
- EMI optimization: Phase shift, Spread Spectrum, Slew rate control
- ASIL compliant Fault protection and report: LED open/short, Single LED short, Thermal Alarm
- eLQFP-48, -40°C to +150°C, AEC-Q100

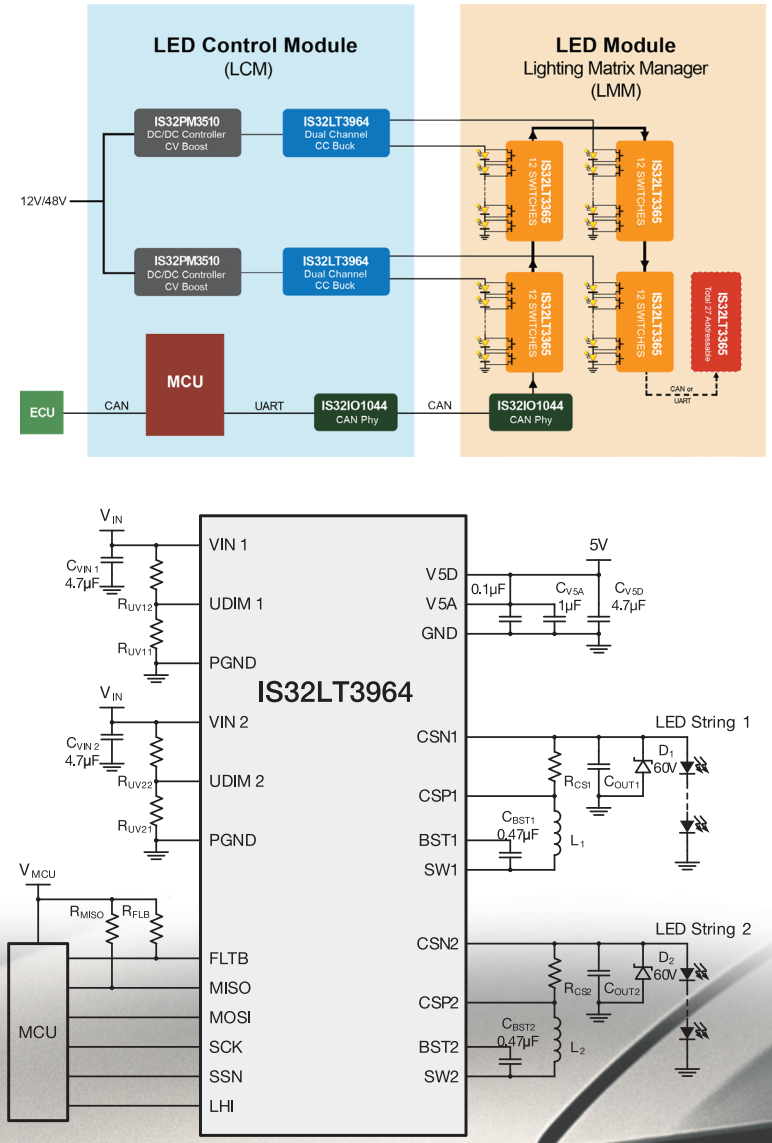
IS32LT3963/64 (Dual Ch Synchronous Buck):

- Wide input supply: 4.5V to 65V
- 1.6A Max output current per Channel
- External PWM Dimming and Analog Dimming
- Spread spectrum to optimize EMI
- e-TSSOP-32, -40°C to +150°C, AEC-Q100

Key Advantages of IS32LT3365

- High integration for compact size
- Fault detection and protection for high reliability
- High resolution dimming
- Multiple EMI optimization mechanisms built-in
- ASIL-B Compliance

Matrix Headlight Application Circuit



Product Offerings

Part Number	Host Interface	Special Feature	Package/Pin
IS32LT3365A	LumiBus	12 Bypass Switches, ASIL-B	eLQFP-48
IS32LT3365B	UART	12 Bypass Switches, ASIL-B	eLQFP-48
IS32LT3962	None	Dual channel multi-topology, advanced dimming	WFQFN-32
IS32LT3963	None	Dual channel synchronous buck regulator, advanced dimming	eTSSOP-32
IS32LT3964	SPI	Dual channel synchronous buck regulator, advanced diagnostics, ASIL-B	eTSSOP-32, Top-Thermal PAD
IS32PM3510	None	Asynchronous multi-topology, DC/DC controller, ultra-low shut down current	eTSSOP-16
IS32IO1044	CAN/UART	ISO11898-2 & SAE J2284 compliant, supports CAN FD up to 5Mbps	SOP-8-EP, WDFN-8

Linear

Description

Rear vehicle lights are important for a vehicle's safety. Stop and turn signal lights are required to notify the rear vehicle of the driver's intentions. Reverse and fog lights are high luminous output to provide visibility during night or fog driving conditions.

Features

Linear Drivers:

- 1, 2, 3, 6, 10 or 12 channels
- Optional Thermal Shunt Resistor per Channel
- External PWM, Internal PWM or Analog dimming
- ADC for LED binning or temperature sensing of LEDs
- Fault Protection and Reporting
- -40°C to +150°C, AEC-Q100, ASIL-B

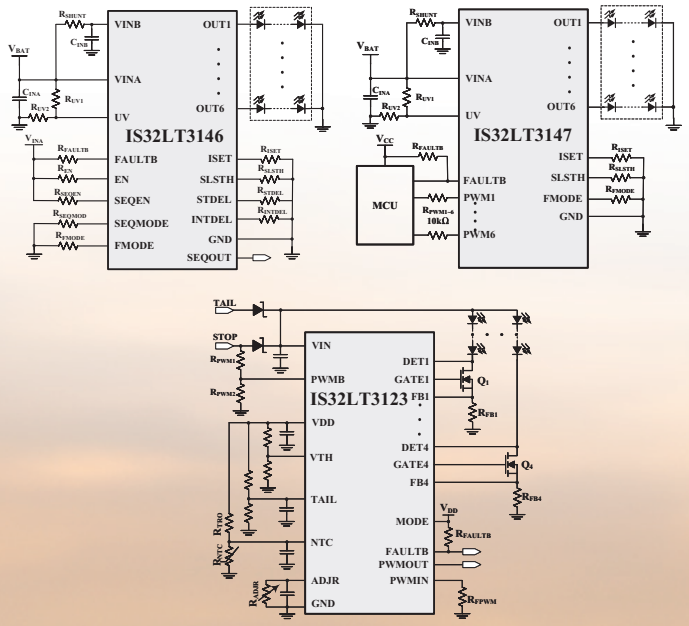
LED Animation Controller:

- Up to 12 channels
- 0.1s to 15s animation duration
- Four pattern banks with 12KB Flash each
- Animation across cascade connected controllers
- Support programmable duty cycle for dimming
- -40°C to +125°C, AEC-Q100

Applications

- Stop Tail-lights & CHMSL
- Rear Combination Lights (RCL)
- Reverse & Fog Lights
- Sequential Turn Signals

Application Circuits



Product Offerings

Part Number	# of Channels	Current (mA)	Package/Pin
IS32LT3123	2	External FET	eTSSOP-24
IS32LT3124 A/B/C/D/E/F	4	150	eTSSOP-16
IS32LT3126	2	150	eTSSOP-16
IS32LT3134	12	Logic	WQFN-24
IS32LT3140A/B	1	450	eTSSOP-14, SOP-8-EP
IS32LT3141A/B	1	450	eTSSOP-14, SOP-8-EP
IS32LT3143/A	3	150	eTSSOP-16
IS32LT3144/A	3	150	eTSSOP-16
IS32LT3146	6	75	eTSSOP-20

Part Number	# of Channels	Current (mA)	Package/Pin
IS32LT3147	6	75	eTSSOP-20
IS32LT3149	10	100	eTSSOP-24
IS32LT3151 A/B/C/D	1	450	eTSSOP-14, SOP-8-EP
IS32LT3152A/B	3	150	eTSSOP-16
IS32LT3153A/B/E	3	150	eTSSOP-20
IS32LT3154A/B	4	150	eTSSOP-24, eTSSOP-20
IS32LT3163	3	150	eTSSOP-16
IS32LT3177/8	1	200	SOT23-6, SOP-8-EP
IS32LT3187	1	350	SOT23-6, SOP-8-EP

LumiBus, UART, CAN, SPI

IS32LT3131 Description

The IS32LT3131A/B/C is a 12-channel current source linear driver capable of delivering up to 75mA per channel. It integrates a 10bit ADC with 15 multiplexed inputs with register accessible ADC value storage. It supports bus error correction (CRC) and integrates a watchdog timer to automatically set failsafe modes when the bus interface connection is lost. The interface bus type is identified by part number suffix; 'A' - UART, 'B' - LumiBus, and 'C' - SPI.

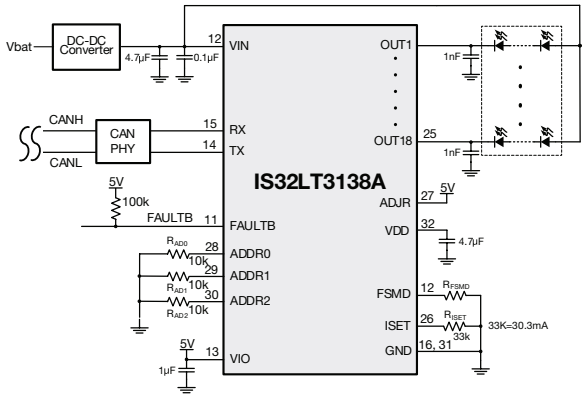
LumiBus

Lumibus is Lumissil's proprietary UART protocol over the CAN bus. It functions with both CAN PHY and CAN-FD PHY, comprising two key components: a streamlined 5V physical layer that converts CAN PHY transmission signals into UART Rx/Tx signals, and a UART protocol layer that manages register-level communication. Lumibus is a high-speed UART protocol over CAN PHY, specifically designed to meet the data transfer demands of automotive lighting systems. This license-free protocol is cost-effective and easy to implement. Lumissil also offers a wide range of components that support the Lumibus protocol, with some devices integrating the Physical Layer.

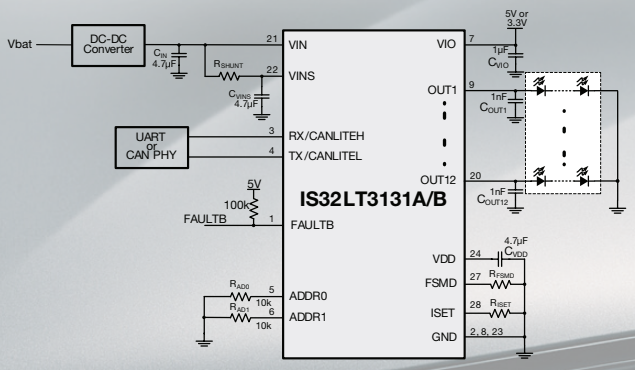
IS32LT3138A Description

The IS32LT3138A is an 18-channel current sink linear driver capable of delivering up to 100mA per channel. It is designed to ISO 26262 ASIL-B and has a UART interface which is compatible with CANFD PHY for master MCU communication over a CAN Bus. It supports bus error correction (CRC) and integrates a watchdog timer to automatically set failsafe modes when the bus interface connection is lost. An external NTC thermistor can be connected to support LED temperature roll-off.

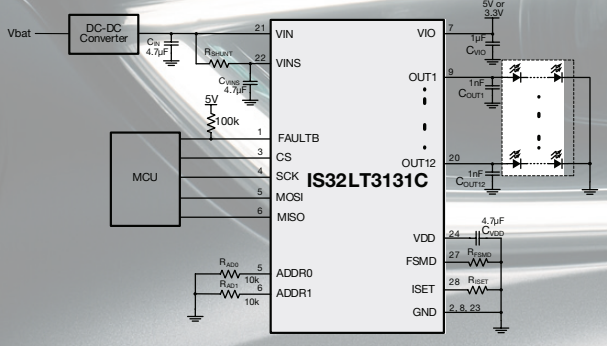
Application Circuit for IS32LT3138A



Application Circuits for IS32LT3131



UART Or LumiBus Circuit Application



SPIBus Circuit Application

Product Offerings

Part Number	# of Channels	Current (mA)	Bus Interface	Source or Sink	Package/Pin
IS32LT3131A	12	75	UART	Source	eTSSOP-28
IS32LT3131B	12	75	LumiBus	Source	eTSSOP-28
IS32LT3131C	12	75	SPI	Source	eTSSOP-28
IS32LT3132	12	100	Lumibus, UART	Source	eTSSOP-24, WFQFN-32
IS32LT3136	32	35	Lumibus, UART	Source	QFN-48
IS32LT3137	18	100	UART	Sink	WFQFN-32
IS32LT3138/A	12	100	UART	Sink	WFQFN-32

Power Management

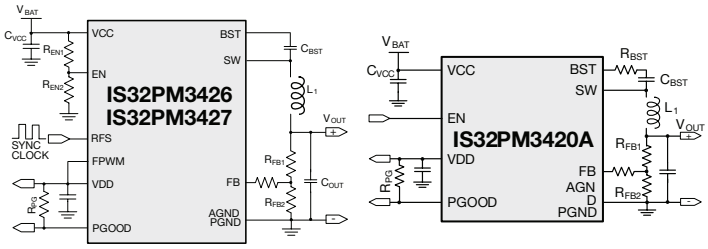
Description

DC/DC voltage converters are required when converting one DC voltage level to another. They are essential components in automotive electronic systems providing a means to step down (buck) or step up (boost) a DC voltage as needed to match the requirements of the electronic components.

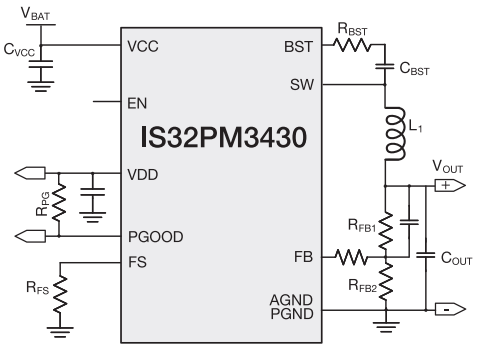
A fully synchronous DC/DC converter employs synchronous rectification that replaces traditional diode rectification with actively controlled MOSFETs to improve efficiency and voltage accuracy. They require fewer external components making for highly reliable designs. In additions, since they come in small IC package sizes, the resulting designs will require less PCB area making for small compact designs.

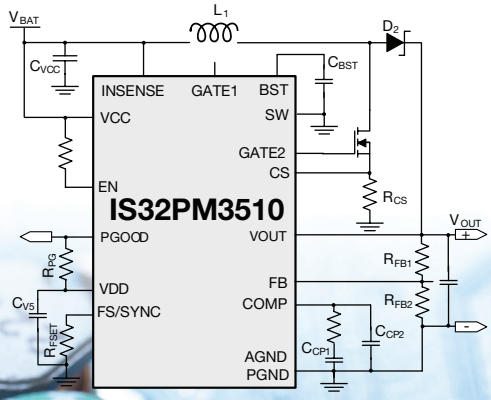
These DC/DC converters are designed with spread spectrum to minimize EMI profile and facilitate passage of CISPR 25 EMI standards. They provide highly accurate output voltages with high accuracy of ±1.5% over the operating temperature range. They are designed to consume minimal power with 25µA (typ) quiescent current and a 1µA (typ)shutdown current.

Application Circuits



Synchronous Buck Converter





Multi-Topology Converter

Applications

Automotive general purpose power supply

- Lighting system
- Infotainment system
- ADAS system
- Head-up display
- Body Control Module

Product Offerings

Part Number	Volt In	Volt Out	Current (A)	Type	Frequency	Package/Pin
IS32PM3420A/B	3.8V - 36V	1V - 24V	3	Synchronous	400kHz (Fixed)	SOP-8-EP
IS32PM3426	3.8V - 36V	1V - 24V	2	Synchronous	100kHz - 2.1MHz	WFCQFN-14
IS32PM3427	3.8V - 36V	1V - 24V	4	Synchronous	100kHz - 2.1MHz	WFCQFN-14
IS32PM3430	3.8V - 36V	1V - 24V	6	Synchronous	100kHz - 2.2MHz	WFCQFN-11
IS32PM3510	4.5V - 55V	Multi-Topology	3	Asynchronous	150kHz - 650kHz	eTSSOP-16

Capacitive Touch Sensors

Touch Sense Management

Robust & reliable operation

- Automotive MCUs based on industry standard 8-bit 8051
- LIN, CAN, UART, ADC, DAC, PWM, Analog Comparator, I2C, SPI Interface
- Embedded Flash microcontrollers based on the high-performance 8-bit 8051
- A comprehensive set of power-saving modes allows low-power designs
- Frequency range from 8MHz up to 125MHz (if implemented PLL) to enhance end-product performance
- Integrate Analog, MCU and memory for SOC solutions
- Touch key control with LED Driver for auto applications
- Watchdog timers with multiple choices of clock source

IS32SE51xx Features

- Up to 24 channel touch sensors
- Active shield
- Auto sleep/wake on touch
- Active and passive proximity through mutual and self-capacitive modes
- Configurable GPIOs
- Fast 400kHz I2C interface
- Automotive –40°C to +125°C temperature range
- AEC-Q100 qualified

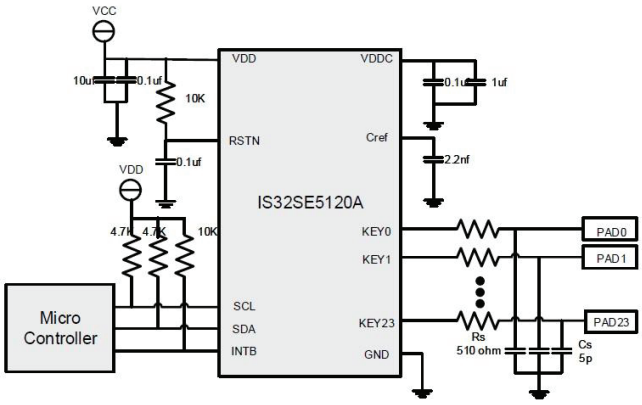
Key Advantages

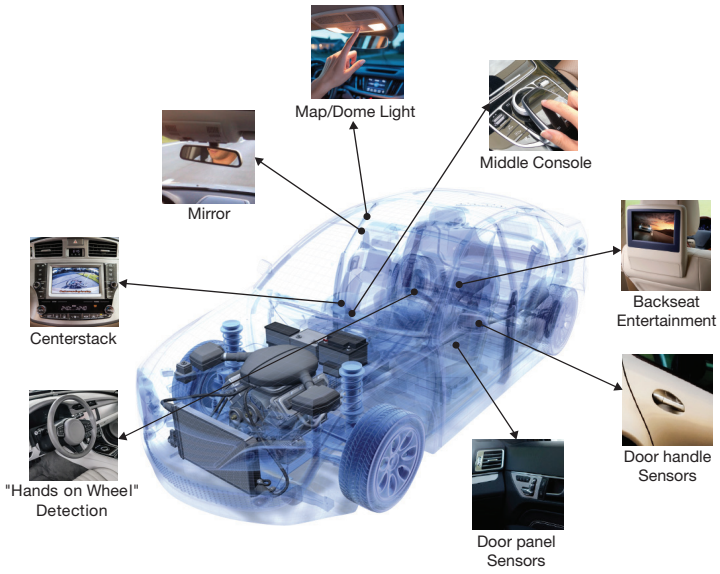
- Touch and proximity sense utilizing a single device
- Preprogrammed for reduced design cycle time
- Easy to use software tools and evaluation kit

Applications

- Auto door handle proximity sensor
- Touch sensitive sunroof
- Rear seat entertainment system
- Instrument cluster
- Door window control module
- "Hands on Wheel" detection

Application Circuit





IS32SE51xx Automotive Touch Sensor Applications

Product Offerings

Part Number	# of Channels	Key Features	Enhanced Features	Package/ Pin
IS32SE5117B	16	Passive proximity detection, Active shield	• Individual key calibration • Keys wake up from sleep • Buzzer/Melody Generator • Interrupt Output	WQFN-24
IS32SE5118A	8	Passive proximity detection, Active shied		TSSOP-16
IS32SE5120A	24	Active and passive proximity detection, Active shield		WQFN-32

8-bit MCUs

IS32CS8976/8 Features

- 8-bit MCU with Gen 3 integrated touch controller
- Up to 64KB ECC integrated memory
- Onboard LIN 2.2A Controller and Physical Layer
- SAE-J2602 qualified
- Supports popular communication protocols
- Features up to 20 configurable GPIO pinsOnboard analog/digital circuits
- Automotive –40°C to +125°C temperate range
- AEC-Q100 qualified

IS32CS8979 Features

- 8-bit MCU with Gen 3 integrated touch controller
- Up to 64KB ECC integrated memory
- Features 18 channel, 16mA LED drivers
- Supports popular communication protocols
- Features up to 9 configurable GPIO pinsOnboard analog/digital circuits
- Automotive –40C to +125C temperate range
- AEC-Q100 qualified

Key Advantages for IS32CS8976/8/9

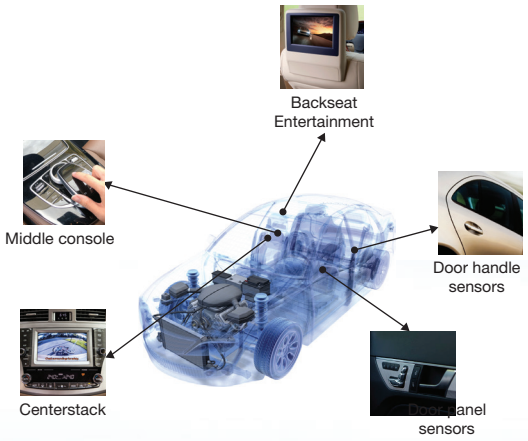
- Touch and proximity sense utilizing a single device
- Easy to use software tools and evaluation kit

IS32CS8976/8 Applications

- Steering wheel (HOD) Hands on Detection system
- Door handles
- Infotainment systems
- Seat adjustment control systems
- Power windows

IS32CS8979 Applications

- Interior ambient lighting
- Indicator lighting
- Welcome lighting
- Taillight animation



Product Offerings

Part Number	CPU + Flash Mem. ECC	Key Features	Enhanced Features	Package/Pin
IS32CS8974A	8051+32KB	19 capacitive sensors, 20 GPIO pins, I2C/SPI/UART	LIN 2.2 controller	TSSOP-24, WQFN-24
IS32CS8975	8051+16KB	11 capacitive sensors, 12 GPIO pins, I2C/SPI/UART	LIN 2.2 controller	TSSOP-16, SOP-8
IS32CS8976	8051+16KB	9 capacitive sensors, 10 GPIO pins, I2C/SPI/UART	LIN 2.2 controller and physical layer	eTSSOP-24
IS32CS8977	8051+64KB	27 capacitive sensors, 28 GPIO pins, I2C/SPI/UART	LIN 2.2 controller	TSSOP-20, TSSOP-24, TSSOP-28, LQFP-32
IS32CS8978	8051+64KB	20 capacitive sensors, 20 GPIO pins, I2C/SPI/UART	LIN 2.2 controller and physical layer	WQFN-40
IS32CS8979	8051 + 64KB	15 capacitive sensors, 9 GPIO pins, I2C/SPI/UART	18 channel 16mA LED drivers	WQFN-40

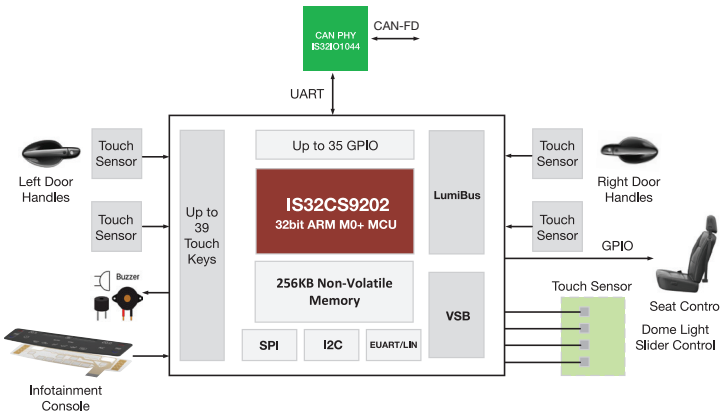
32-bit MCUs

Features

- 32-bit MCU Features
- Embedded-Flash RISC-V and ARM M0+ microcontrollers
- Frequency range up to 50 MHz (80MHz with PLL)
- Up to 32K ECC SRAM and DMA RAM
- Up to 256K ECC FLASH data memory
- LIN 2.0/2.2 controller + PHY
- CAN-FD controller
- Integrated touch-key controller
- Integrated LED Driver
- 12-bit SAR ADC
- EUART, SPI, I2C, LED serial video bus, Lumibus LED controller
- Watch-dog timers with multiple clock sources
- Security features: NVM OTP memory for key storage, secure boot, TRNG, AES-128/192/256, SHA2, hashing accelerator, etc.
- AEC-Q100, ISO 26262 ASIL-B

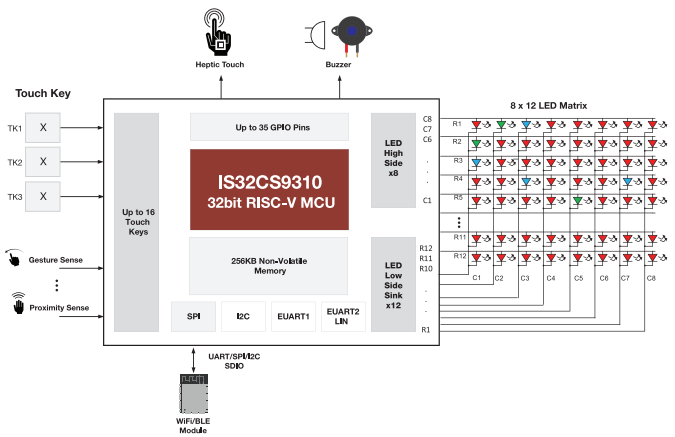
32-bit ARM M0+, 50MHz

Features	IS32CS9202	IS32CS9208
ECC RAM	8KB + 8KB DMA	8KB + 8KB DMA
ECC FLASH	256KB	256KB
LED Driver	SPV (Video Serial Bus) Controller Lumibus LED Controller	SPV (Video Serial Bus) Controller Lumibus LED Controller
Touch Controller	39-TK (self-cap) w/ shield, APS	39-TK (self-cap) w/ shield, APS
ADC	12-bit CR SAR 14-bit SD	12-bit CR SAR 14-bit SD
DAC	8-bit DAC	8-bit DAC
Interface Digital Peripherals	I2C M/S, UART, EUART/LIN controller, SPI, 42 GPIO, 16-bit TCC, melody generator, 8 CH 16-bit PWM, CAN-FD to 10Mbps	I2C M/S, UART, EUART/LIN controller, SPI, 42 GPIO, 16-bit TCC, melody generator, 8 CH 16-bit PWM, CAN-FD to 10Mbps, Security
Package/Pin	LQFP-48, WQFN-32/48, QFN-48	WFQFN-32/48



32-bit RISC-V, 32MHz

Features	IS32CS9310	IS32CS9201
ECC RAM	16KB + 16KB DMA	8KB
ECC FLASH	256KB	64KB
LED Driver	8 x 12 matrix, 80mA, 12-bit PWM, spread spectrum	NO
Touch Controller	16-TK (self-cap) w/ shield, APS 8 x 8 key scan matrix (mutual cap)	27-TK (self-cap) w/ shield, APS
ADC	12-bit SAR	2CH 12-bit SAR with PGA front-end
DAC	10-bit DAC & 8-bit iDAC for DC/DC FB control	8-bit DAC
Interface Digital Peripherals	I2C M/S, UART, EUART/LIN controller, SPI, 35 GPIO, 16-bit TCC, melody generator, 3 CH 14-bit PWM	I2C M/S, UART, EUART/LIN controller, SPI, 42 GPIO, 16-bit TCC, melody generator, 3 CH 14-bit PWM
Package/Pin	eLQFP-64	WFQFN-24/32, TSSOP-20



System Basis Chips (SBC)

IS32IO1163 Features

- High-speed CAN FD data frames up to 5Mbit/s
- Compliant to ISO 11898-2/5/6
- Built-in LDO (5V/100mA) output pin V1 to supply external microcontroller
- 5V nominal output; +/- 2% accuracy on pin V1
- 100mA output current capability at V1 and with short-circuit protection to GND
- Optimized for low electromagnetic emission (EME)
- Wide common mode range (CMR), +12V~-12V, to optimize for a high immunity against electromagnetic interference (EMI)
- Very low quiescent current (Typ. 75uA) in Standby mode with full remote wake-up capability
- Under voltage detection at V1 and BAT
- VIO input allows for direct interfacing with microcontrollers.
- Over temperature shut-down
- Standard pin out and TSSOP-14 with exposed pad package
- Automotive AEC-Q100 qualification in progress

Applications

- Automotive subsystems such as head light control module
- Tail and turn light signal module
- Roof control with interior lighting module
- HVAC control module
- Body control module and many other subsystems

Key Advantages for IS32IO1163 & IS32IO1028

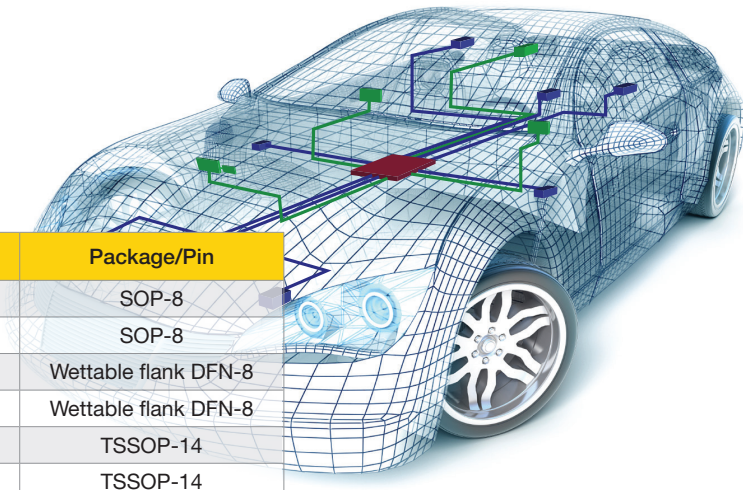
- Open source hardware & software – hardware schematic diagram, PCB design, BOM, OS & driver software packages
- Core module – design stamp-holes for mass production capability
- Processor – a compute engine as well as a control MCU
- Connectivity – Ethernet, USB, SSI, UART, PWM, ADC, I2C

IS32IO1028 Features

- LIN 2.X/SAE J2602 compliant
- BUS pin support up to 20kBaud
- Operating Voltage VBAT= 5.5V to 32V
- Withstand +40V/-24V
- 3.3V/5.0V options
- +/- 5% accuracy
- Up to 70mA load
- Build-in LDO output on VCC pin for supplying external components
- Short circuit protection with current limiting
- Sleep mode and Wakeup
- Low current consumption in Sleep mode.
- LIN bus wake-up function
- Local wake-up from EN pin
- Over temperature shut-down
- Auto AEC-Q100 qualification in progress

Applications

- **Steering wheel:** Cruise control, wiper, climate control, radio
- **Comfort:** Sensors for temperature, sun-roof, light, humidity
- **Powertrain:** Sensors for position, speed, pressure
- **Engine:** Small motors, cooling fan motors
- **Air condition:** Motors, control panel
- **Door:** Side mirrors, windows, seat control, locks
- **Seats:** Position motors, pressure sensors



Product Offerings

Part Number	Special Features	Package/Pin
IS32IO1044A	CAN Transceiver, VIO internally connects to VDD	SOP-8
IS32IO1044B	CAN Transceiver, Independent VIO pin	SOP-8
IS32IO1044A	CAN Transceiver, VIO internally connects to VDD	Wettable flank DFN-8
IS32IO1044B	CAN Transceiver, Independent VIO pin	Wettable flank DFN-8
IS32IO1163A	CAN-FD controller in T&R, VIO internal connects to VI	TSSOP-14
IS32IO1163B	CAN FD controller in T&R, Independent VIO pin	TSSOP-14
IS32IO1021	LIN Transceiver, SAEJ2602-2	SOP-8
IS32IO1021	LIN Transceiver, SAEJ2602-2	Wettable flank DFN-8
IS32IO1028A	LIN Transceiver with LDO, Vcc=5.0V	SOP-8
IS32IO1028B	LIN Transceiver with LDO, Vcc=3.3V	SOP-8

G.vn Zonal Architecture In-Vehicle Networking (IVN)

Description

Backbone to transport all automotive protocols (Ethernet, CAN, LIN, FlexRay etc) transparently. Enables zonal architecture IVN that reduces wiring, simplifies manufacturing, and maintenance/repairs without changes to existing ECUs (HW & SW) and associated communication protocols.

Application

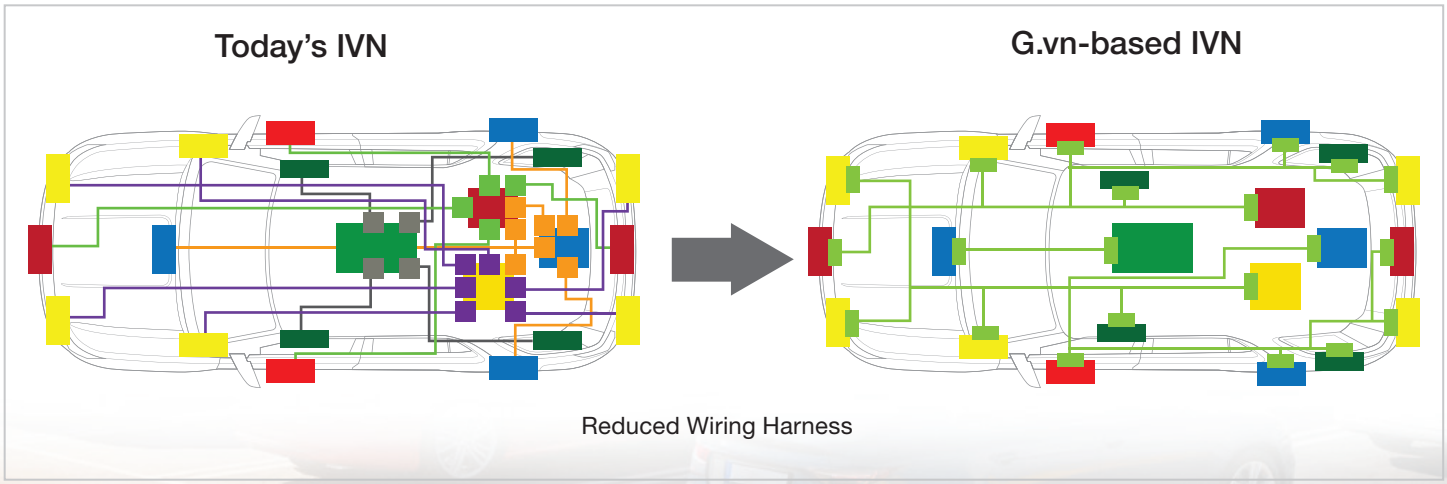
- Automotive In-Vehicle Networking (IVN)

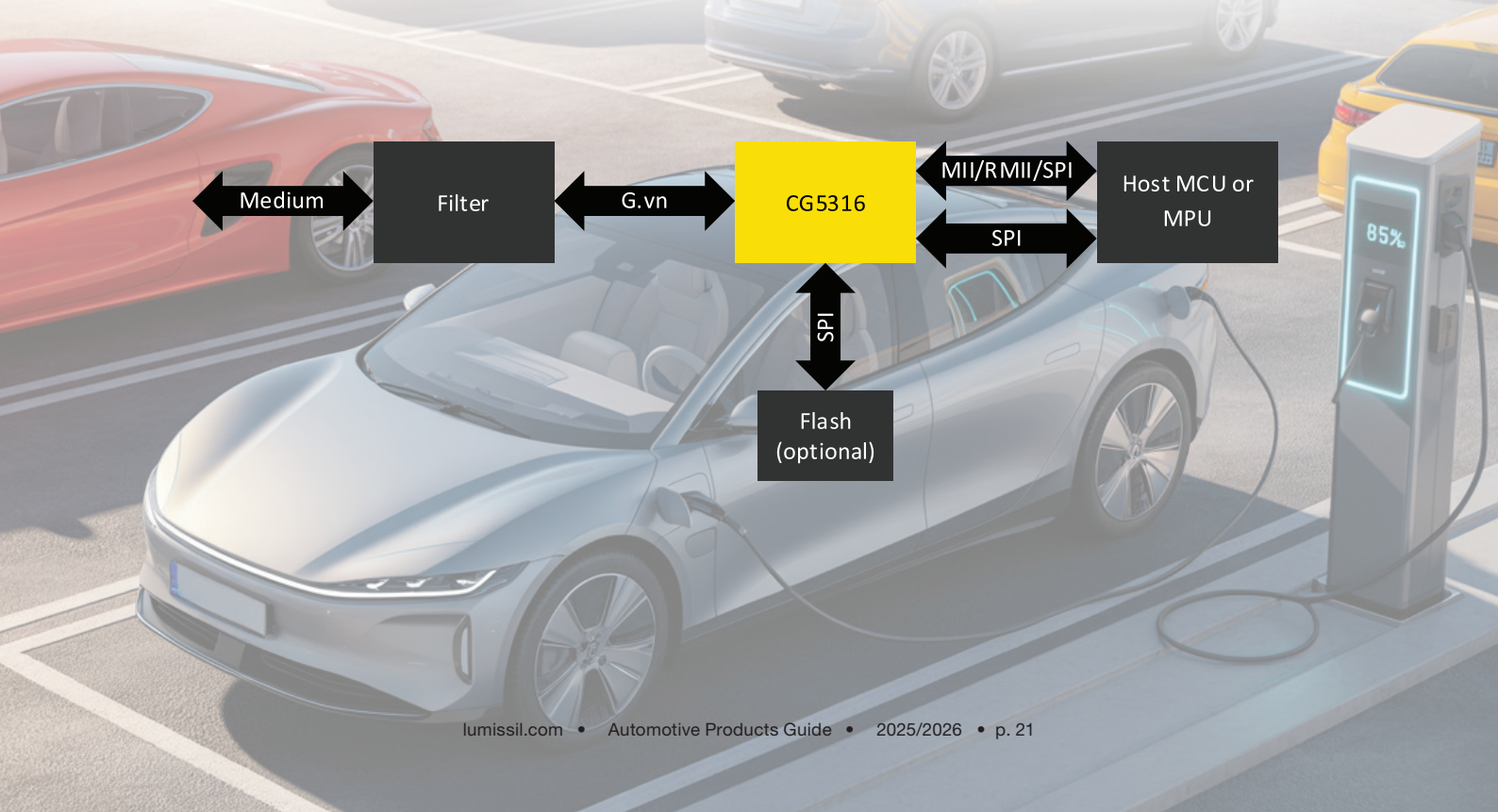
Features

- Automotive OFDM layer 2 communication technology based on ITU-T's G.9960 standards
- Transports all automotive communication protocols transparency with low/bounded latency
- Practical migration path from current function-based network to future IP-based network.
- "Harness immunity" – generates metric to assess health of the wire harness
- Integrated Analog Front End
- Dual host interface: SPI1 or SPI2 and RGMII
- IEEE1588 support
- 8x8mm aQFN, -40°C to +105°C, AEC-Q100 grade 2

Product Offering

Part Number	Description
CG5316B0-A2NE3	CG5316, G.vn Transceiver for in vehicle networking, aQFN80 (8x8), automotive grade





HomePlug Green PHY (HPGP)

Description

Required by global dominant charging standard, CCS (Combined Charging Standard) for communications between vehicle and charger. Green PHY is for both CCS and NACS (North American Charging Standard). CCS adopts ISO/IEC 15118 specifications. World's first automotive grade HPGP transceiver for use in both Vehicle (EV) and Charger (EVSE)

Applications

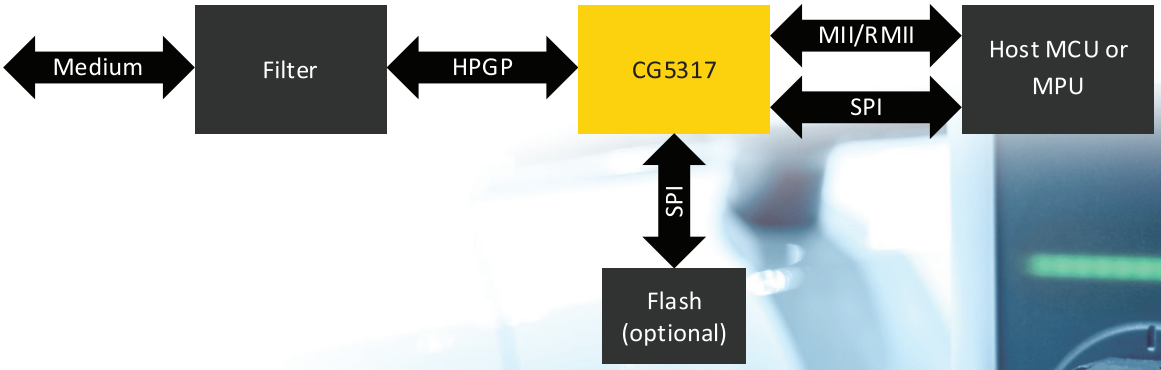
- EV Vehicle Charging Port
- EVSE Charger Station

Product Offerings

Part Number	Description
IS32CG5317	Automotive grade, Tape & Reel packaging. CG5317, HomePlug Green PHY Transceiver, EP-LQFP80
IS31CG5317	Industrial grade, Tape & Reel packaging. CG5317, HomePlug Green PHY Transceiver, EP-LQFP80 (-40 °C +105°C)

HPGP IS32CG5317 Features

- HomePlug Green PHY standard compliant transceiver for basic EV charging application
- HomePlugAV standard compliant for high-rate applications data exchange during charging
- TX Signal:
  - dBm – complies with ISO15118-3 and DIN 70121 PSD calibration requirements
  - Configurable PSD (per tone configuration)
  - Simple PSD calibration process
- Dual host Interface: R/MII, or SPI (configurable clock speed up to 50MHz)
- Boot:
  - FW loading from Host (MCU)
  - Optional FW loading from Flash
- Highly flexible diagnostics capabilities
  - SNR, Noise, Channel, gain, various statistics
  - Ability to stream out logs (depending on support from the Host side)
- Embedded PVT (Process, Voltage, Temperature) sensor
- Embedded eFUSE memory
- RoHS-compliant EP-LQFP 80pin 12x12mm package, -40°C to 105°C, AEC-Q100 qualified



Automotive Product Selection

Multi-Channel LED Driver Selector Guide (FxLED)

P/N	# of Ch	mA/Ch max	Interface	VLED Max	PWM Freq. Max (kHz)	PWM Resolu-tion (bits)	Global Current Adj (bits)	ANR	Dot Cor	SS	Breathing	Low Iq	Fault Detect	Temp-Det Roll Off	Package/ Pin	Special Features
IS32FL3207	18	38	I2C	5.5	62	8,10,12,16	8	•	•	•			•	•	WFQFN-28	p-p w/ FL3208A
IS32FL3209	18	76	I2C	5.5	23	8	-								WFQFN-28, eTSSOP-28	1/24 DC Current Adj
IS32FL3238	18	76	I2C	5.5	62	8,10,12,16	8	•	•	•			•		eTSSOP-28	
IS32FL3240	30	38	I2C	5.5	62	8,10,12,16	8	•	•	•			•	•	WFQFN-40	
IS32FL3250	30	23	I2C	5.5	128	8,10,10+4	8	•	•	•					WFQFN-40	p-p w FL3240, Group Dim
IS32FL3236A	36	38	I2C	5.5	22	8	-								eTQFP-48	
IS32FL3237	36	38	I2C	5.5	62	8,10,12,16	8	•	•	•			•	•	WFQFN-44, eTQFP-48	Feature Rich, p-p FL3236A
IS32FL3246A	36	25	I2C	5.5	128	8,10	8	•							WFQFN-44	3 Group Dim
IS32FL3265 A/B	18	60	I2C / SPI	40	25	8	5	•	•	•			•	•	eTSSOP-28	4% ch-ch 6% dev-dev
Serial Shift																
IS32FL3726A	16	60	Serial 30MHz	5.5	N/A	N/A	-								QFN-24, SSOP-24, eTSSOP-24	4% ch-ch 2% dev-dev
IS32FL3268	24	51	SPI or VSB	16	62.5	8, 8+4, 8+8, 16	8, 3-Groups	•	•	•			•		WQFN-40	3% Matching
IS32FL3248	48	33	SPI or VSB	16	62.5	8, 8+4, 8+8, 16	8, 3-Groups	•	•	•			•		eTQFP-64, QFN-64	3% Matching

Matrix LED Driver Selector Guide (FxLED)

P/N	Array Size	# of Ch	mA/ Ch max	Avg mA/Ch when scanning	Interface	PWM Freq max (kHz)	PWM Res (bits)	Global Cur Adj (Bits)	Deghost	ANR	Dot Cor	SS	Breathing	Fault Detect	Cascade Sync	Package/Pin	Special Features
IS32FL3738	8x6	48	84	13.2	I2C 1MHz	8	9	8	•				3	•	•	eTSSOP-28, QFN-28	Hi side PWM source
IS32FL3740	4x3	12	84	26.3	I2C 1MHz	8	10	8	•				3	•	•	eTSSOP-20, QFN-20	Hi side PWM source
IS32FL3746B	18xn (n=4~1)	72	29	8.33 *	SPI 12MHz	29	8	8	•	•	•	•		•		QFN-32	
IS32FL3749	24xn (n=4~1)	96	60	14.3 *	SPI or VSB 33MHz	125	16	8	•	•	•	•		•		QFN-48, eTQFP-48	16V, Internal LDO, Temp Rolloff, Auto-motive LCD Backlight, Inst Clusters
IS32FL3761	33xn (n=12~2)	396	30	2.5 *	I2C-1MHz, SPI-12MHz	312	12	8	•	•	•	•		•		WFQFN-60	Ultra-Low Iq, Automotive LCD Back-light, Inst Clusters
IS32FL3776	36x6 (n=6~1)	216	60	10 *	LumiBus, UART / SPI	500	16	6	•	•	•	•		•	•	WFQFN-60	External P-MOS, DCFB, 10-bit ADC

ANR = Audible Noise Reduction Dot Cor = Single LED Current Adjust SS = Spread Spectrum * = Avg Current for Max Columns

New Soon to be released

Automotive Product Selection

Linear (High Brightness - HBLED)

P/N	# of Ch	mA/Ch max	Sink or Source	Operating Vin (V)		Interface	Head-room (V) @ (mA)	Fault Detect	Interior	Map/Dome/Glove	Exterior	Tail/Stop/Turn	Package/ Pin	Special Features
				Min	Max									
IS32LT3123	4	Ext MOS-FET	Sink	5.0	40	Stop/Tail	0.2	•			•	•	eTSSOP-24	Stop&Tail, CHMSL, cascade-able, NTC input, External Sink MOSFET
IS32LT3124 A/B/C/D/E/F	4	150	Source	5.0	28	4 x PWM	1.3 @ 150	•			•	•	eTSSOP-16	Parallelable outputs to 600mA, Multi Fault Modes, Headroom Control
IS32LT3126	2	150	Source	5.0	42	PSM	1.1 @ 150	•	•				eTSSOP-16	CSTOR capacitor holds fault status
IS32LT3128A	3	2x150, 1x30	Source	5.0	42	Switch or PWM	0.9 @ 150	•	•	•			eTSSOP-20	Debounced/Latched Switch inputs, Gamma correct fade in/out by resistor settings
IS32LT3129	3	2x150, 1x30	Source	5.0	42	I2C 1MHz	0.9 @ 150	•	•	•			eTSSOP-20	Debounced/Latched SW inputs, Gamma correct fade in/out by resistor settings
IS32LT3129A	3	2x150, 1x30	Source	5.0	42	I2C 1MHz	0.9 @ 150	•	•	•			eTSSOP-20	Debounced/Latched SW inputs, Gamma correct fade in/out by resistor settings
IS32LT3140A IS32LT3140B	1	450	Source	4.5	40	EN & PWM	0.7 @ 150	•	•		•	•	eTSSOP-14 eSOP-8	Optional Heat Shunt Res, Similar to TPS92610
IS32LT3141A IS32LT3141B	1	450	Source	4.5	40	Onewire Serial	0.7 @ 150	•	•		•	•	eTSSOP-14 eSOP-8	100kbps Serial Shift version of IS32LT3140A/B
IS32LT3143	3	150	Source	5.0	40	EN & PWM	0.9 @ 150	•	•		•	•	eTSSOP-16	Internal Temp Rolloff, p-p w/ TPS92630
IS32LT3144	3	150	Source	5.0	40	EN & PWM	0.9 @ 150	•	•		•	•	eTSSOP-16	External NTC for Temp Rolloff
IS32LT3146	6	75	Source	5.0	40	Resistor	1.1 @ 75	•			•	•	eTSSOP-20	Sequential turn on programable with resistors, thermal shunt circuit
IS32LT3147	6	75	Source	5.0	40	6 x PWM	1.1 @ 75	•			•	•	eTSSOP-20	Thermal Shunt Circuit
IS32LT3149	10	100	Source	4.5	40	Resistor	0.95 @ 100	•			•	•	eTSSOP-24	Sequential turn on programable with resistors, increased current capacity, thermal shunt circuit
IS32LT3151 A/B/C/D/E	1	450	Source	4.5	40	EN & PWM	1.3 @ 400	•	•		•	•	eTSSOP-14 eSOP-8	IS32LT3151C/D Ver suport ISO26262, ASIL-B, Similar to TPS92629
IS32LT3152 A/B	3	150	Source	4.5	40	PSM	0.6 @ 150	•	•		•	•	eTSSOP-16	Internal Temp Rolloff, p-p w/ TPS92623
IS32LT3153 A/B/E	3	150	Source	4.5	40	EN & PWM	0.6 @ 150	•	•		•	•	eTSSOP-20	External NTC for Temp Rolloff, ASIL-B (IS323153B)
IS32LT3154 A/B	4	150	Source	4.5	40	EN & PWM	0.6 @ 150	•	•		•	•	eTSSOP-24	External NTC for Temp Rolloff
IS32LT3362	12	1.5	By-pass	4.5	55	UART		•			•		eLQFP-48	12-Ch Shunting Headlight Array Driver, 10-bit PWM, SS, Temp det, ASIL-B
IS32LT3365 A/B	12	1.5	By-pass	4.5	55	UART, Lumibus		•			•		eLQFP-48	12-Ch Shunting Headlight Array Driver, 10-bit PWM, SS, Temp det, ASIL-B
IS32LT3163	3	150	Source	5.0	40	PSM	0.6 @ 150	•	•		•	•	eTSSOP-16	External Temp Rolloff
IS32LT3168	1	200	Source	6.5	28	Magnet	1.5 @ 200		•	•			eSOP-8	Integrated Hall Sensor, Prog w/ R-setting
IS32LT3175N	1	150	Source	5.0	42	Switch or -PWM	0.9 @ 150		•	•			eSOP-8	Gamma fade in/out with Resistor setting, for Negative Polarity PWM
IS32LT3175P	1	150	Source	5.0	42	Switch or +PWM	0.9 @ 150		•	•			eSOP-8	Gamma fade in/out with Resistor setting, for Positive Polarity PWM
IS32LT3177	1	150 200	Sink	5.0	40	PSM	1.2 @ 200 1.5 @ 200		•				SOT23-6 eSOP-8	Low cost simple control

New Soon to be released PSM = Power Supply Modulation

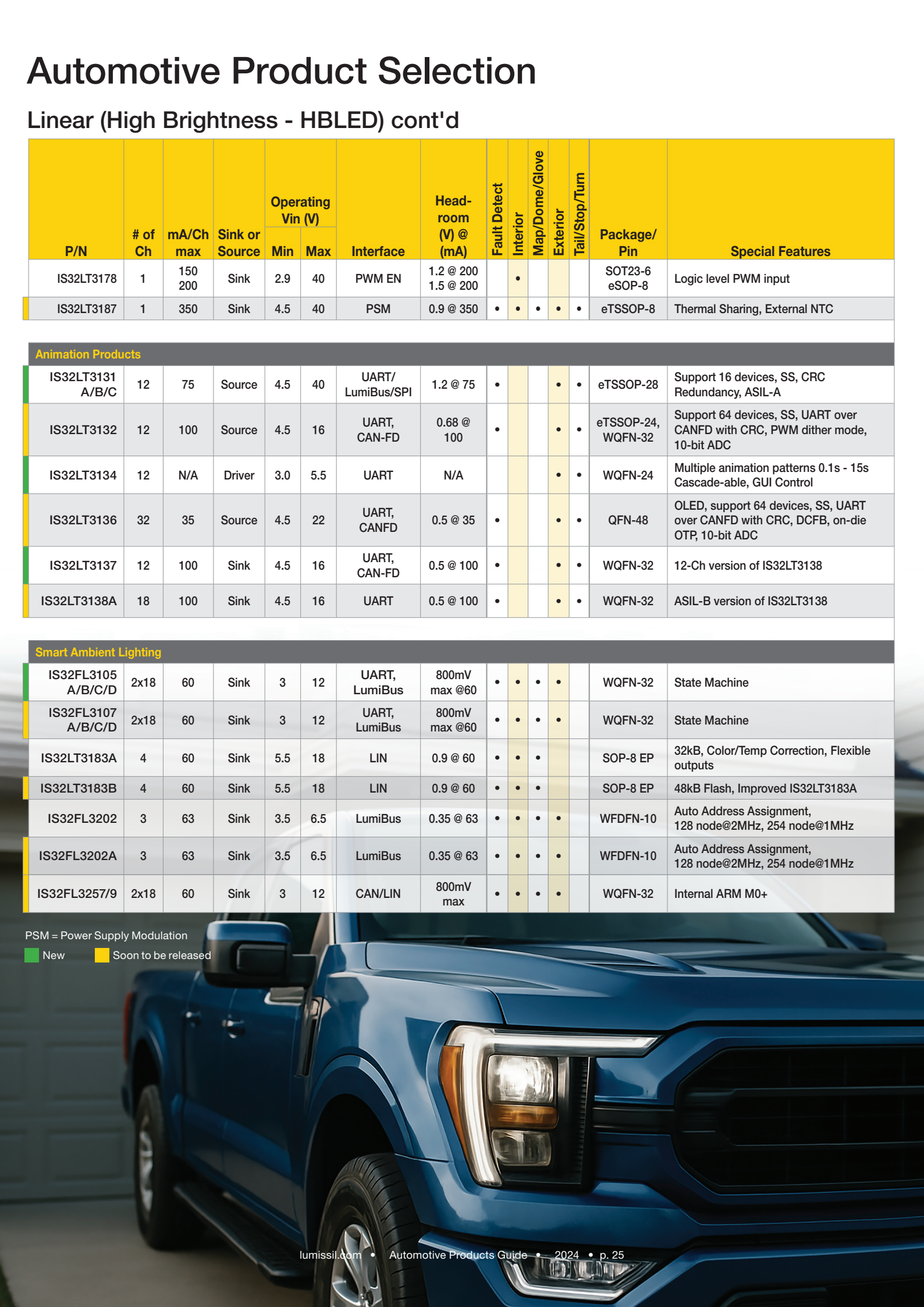
Automotive Product Selection

Linear (High Brightness - HBLED) cont'd

P/N	# of Ch	mA/Ch max	Sink or Source	Operating Vin (V) Min	Operating Vin (V) Max	Interface	Head-room (V) @ (mA)	Fault Detect	Interior	Map/Dome/Glove	Exterior	Tail/Stop/Turn	Package/ Pin	Special Features
IS32LT3178	1	150 200	Sink	2.9	40	PWM EN	1.2 @ 200 1.5 @ 200		•				SOT23-6 eSOP-8	Logic level PWM input
IS32LT3187	1	350	Sink	4.5	40	PSM	0.9 @ 350	•	•	•	•	•	eTSSOP-8	Thermal Sharing, External NTC
Animation Products														
IS32LT3131 A/B/C	12	75	Source	4.5	40	UART/ LumiBus/SPI	1.2 @ 75	•			•	•	eTSSOP-28	Support 16 devices, SS, CRC Redundancy, ASIL-A
IS32LT3132	12	100	Source	4.5	16	UART, CAN-FD	0.68 @ 100	•			•	•	eTSSOP-24, WQFN-32	Support 64 devices, SS, UART over CANFD with CRC, PWM dither mode, 10-bit ADC
IS32LT3134	12	N/A	Driver	3.0	5.5	UART	N/A				•	•	WQFN-24	Multiple animation patterns 0.1s - 15s Cascade-able, GUI Control
IS32LT3136	32	35	Source	4.5	22	UART, CANFD	0.5 @ 35	•			•	•	QFN-48	OLED, support 64 devices, SS, UART over CANFD with CRC, DCFB, on-die OTP, 10-bit ADC
IS32LT3137	12	100	Sink	4.5	16	UART, CAN-FD	0.5 @ 100	•			•	•	WQFN-32	12-Ch version of IS32LT3138
IS32LT3138A	18	100	Sink	4.5	16	UART	0.5 @ 100	•			•	•	WQFN-32	ASIL-B version of IS32LT3138
Smart Ambient Lighting														
IS32FL3105 A/B/C/D	2x18	60	Sink	3	12	UART, LumiBus	800mV max @60	•	•	•	•		WQFN-32	State Machine
IS32FL3107 A/B/C/D	2x18	60	Sink	3	12	UART, LumiBus	800mV max @60	•	•	•	•		WQFN-32	State Machine
IS32LT3183A	4	60	Sink	5.5	18	LIN	0.9 @ 60	•	•	•			SOP-8 EP	32kB, Color/Temp Correction, Flexible outputs
IS32LT3183B	4	60	Sink	5.5	18	LIN	0.9 @ 60	•	•	•			SOP-8 EP	48kB Flash, Improved IS32LT3183A
IS32FL3202	3	63	Sink	3.5	6.5	LumiBus	0.35 @ 63	•	•	•	•		WFDFN-10	Auto Address Assignment, 128 node@2MHz, 254 node@1MHz
IS32FL3202A	3	63	Sink	3.5	6.5	LumiBus	0.35 @ 63	•	•	•	•		WFDFN-10	Auto Address Assignment, 128 node@2MHz, 254 node@1MHz
IS32FL3257/9	2x18	60	Sink	3	12	CAN/LIN	800mV max	•	•	•	•		WQFN-32	Internal ARM M0+

PSM = Power Supply Modulation

New Soon to be released



Automotive Product Selection

Switching LED Driver & Point of Load

P/N	LED Current Max (A)	Operating Vin (V)		Integrated Fet	Synchronous	Switching Freq (Hz)	RDS_ON (Ohms)	Dimming	Industrial	LED Open Protect	LED Short Protect	Fault Pin	Spread Spectrum	Soft Start	OVP	Thermal Rolloff	Package/Pin	Special Features
		Min	Max															
Buck LED Drivers																		
IS32LT3361	1.3	6.0	40	Y		Up to 1M	0.25	PWM or Ana	•	•	•	•	•	•			eSOP-8	Lowside Hysteretic, 2000: 1 Dimming
IS32LT3951	1.5	4.5	38	Y		200K - 2.2M	0.20	PWM or Ana		•	•	•	•				eSOP-8	~pin-pin family
IS32LT3952	1.5	4.5	38	Y		200K - 2.2M	0.20	PWM or Ana	•	•			•				eSOP-8	~pin-pin family, Temp Monitor
IS32LT3953	3.0	4.5	38	Y		200K - 2.2M	0.20	PWM or Ana	•	•			•				eSOP-8	~pin-pin family
IS32LT3953B	3.0	4.5	38	Y		200K - 2.2M	0.20	PWM or Ana		•			•				eSOP-8	~pin-pin family, Internal LDO pin
IS32LT3954	3.0	4.5	38	Y		200K - 2.2M	0.20	PWM or Ana	•	•		•	•				eSOP-8	~pin-pin family
IS32T3954A	3.0	4.5	38	Y		200K - 2.2M	0.20	PWM or Ana	•	•		•	•				eSOP-8	~pin-pin family
IS32LT3961	2.0	5.0	60	Y		200K - 2.2M	0.2	PWM or Ana	•	•	•	•				•	eTSSOP-16	LED Cathode to GND, Over current hiccup protection
IS32LT3963	1.6	4.5	65	Y	Y	100K - 2.1M	HS=0.25 LS=0.25	PWM or Ana	•	•	•	•	•			•	eTSSOP-32	Optimized for Matrix Controller, Adaptive on-time avg current control
IS32LT3964	1.6	4.5	65	Y	Y	100K - 2.1M	HS=0.25 LS=0.25	PWM or Ana	•	•	•	•	•			•	eTSSOP-32, Top-Thermal PAD	Optimized for Matrix Controller, Adaptive on-time avg current control
IS32LT3965	1.5	3.8	38	Y	Y	Up to 2.2M	HS=0.2 LS=0.1	PWM or Ana	•	•	•	•				•	WFCQFN-14	Forced continuous conduction mode
Multi-Topology LED Drive (Buck, Boost, Buck/Boost)																		
IS32LT3957A	Design Driven	5.0	75			100K - 1M	Ext MOSFET	PWM or Ana	•	•	•	•	•	•	•		eTSSOP-16	Headlamp, Fog light driver
IS32LT3958	Design Driven	5.0	70			100K - 1M	Ext MOSFET	PWM, Ana or Internal PWM		•	•	•	•	•	•	•	eTSSOP-20	Internal dual dimming set for brightness control
IS32LT3958A	Design Driven	5.0	70			100K - 1M	Ext MOSFET	PWM, Ana or Internal PWM		•	•	•	•	•	•	•	eTSSOP-20	Internal dual dimming set for brightness control and Improved SS
IS32LT3958B	Design Driven	5.0	80			100K - 1M	Ext MOSFET	PWM, Ana or Internal PWM	•		•	•	•	•	•	•	eTSSOP-20	Internal dual dimming set for brightness control and Improved current sense and shutdown current
IS32LT3959	Design Driven	4.5	55			150K - 650K	Ext MOSFET	PWM, Ana or Internal PWM		•	•	•	•	•	•		eTSSOP-28	LED Cathode to GND
IS32LT3959A	Design Driven	4.5	55			150K - 650K	Ext MOSFET	PWM, Ana or Internal PWM		•	•	•	•	•	•		eTSSOP-28	Optimized LED Bypass
IS32LT3960 A/B	Design Driven	4.5	65			100K - 1M	Ext MOSFET	PWM, Ana or Internal & External PWM	•	•	•	•	•	•	•	•	eTSSOP-32, WFQFN-32	Dual Channel, CV/CC Controller, Four-Phase Configuration, ASIL-B(B)
IS32LT3962	Design Driven	5.0	80			100K - 1M	Ext MOSFET	PWM, Ana or Internal & External PWM	•	•	•	•	•	•	•	•	WFQFN-32	Dual Channel, two analog dimming pins

New Soon to be released

Automotive Product Selection

Power Management

P/N	LED Current Max (A)	Operating Vin (V) Min	Operating Vin (V) Max	Integrated Fet	Synchronous	Switching Freq (Hz)	RDS_ON (Ohms)	Dimming (Vout Range)	Industrial	LED Open Protect	LED Short Protect	Fault Pin	Spread Spectrum	Soft Start	OVP	Thermal Rolloff	Package/Pin	Special Features
Voltage Regulator, Point of Load (POL)																		
IS32PM3420A	3.0	3.8	36	Y	Y	400K	HS=0.13 LS=0.08	1V - 24V	•			•	•	•	•		eSOP-8	COT
IS32PM3420B	3.0	3.8	36	Y	Y	400K	HS=0.13 LS=0.08	1V - 24V	•				•	•	•		eSOP-8	Pin selectable FCCM or PFM mode
IS32PM3426	2.0	3.8	36	Y	Y	100K - 2.2M	HS=0.08 LS=0.04	1V - 24V	•			•	•	•	•		WFCQFN-14	Pin selectable FCCM or PFM mode
IS32PM3427	4.0	3.8	36	Y	Y	100K - 2.2M	HS=0.08 LS=0.04	1V - 24V	•			•	•	•	•		WFCQFN-14	p-p w IS32PM3426
IS32PM3430	60	3.8	36	Y	Y	100K - 2.2M	HS=0.033 LS=0.022	1V - 24V				•	•	•	•		WFCQFN-11	Pin selectable FCCM or PFM mode, Ultra-low Iq
IS32PM3510	3.0	4.5	55			150K - 650K	Ext MOSFET	1.2V - 55V	•			•	•	•	•		eTSSOP-16	Multi-Topology, COT

Audio Amplifier

P/N	Channel	Power (W)	THD+N	PSRR (dB)	VDD (V)	Package/Pin	Special Features
IS32AP2123/A	1	24	0.05%	-70	4.5 - 24	eTSSOP-16	Class-D Mono BTL with 40V load dump and I2C diagnostics, automatic gain control (AGC), 85% efficiency, with dynamic temperature control and DC level protection, automatic load diagnostics, spread spectrum

8-bit MCU

P/N	CPU	Clock Frequency (MHz)	Memory (KB) ECC	LIN 2.2A, SAE J2602 Controller + Phy	LED Driver	Touch Key Sensors (Gen 3)	Active Proximity Sensors	GPIO	ADC	DAC	Timers	I2C/SPI/UART	Package/Pin
IS32CS8974	8051	16	32			19		20	•	•	•	•	TSSOP-24, QFN-24
IS32CS8975	8051	32	16			11		12	•	•	•	•	TSSOP-16, SOP-8
IS32CS8976	8051	32	16	•		9		10	•	•	•	•	TSSOP-20
IS32CS8977	8051	32	64			27	•	28	•	•	•	•	TSSOP-20/24/28, LQFP-32
IS32CS8978	8051	32	64	•		20		20	•	•	•	•	QFN-40
IS32CS8979	8051	32	64		18 ch	20	•	9	•	•	•	•	QFN-40

New Soon to be released

Automotive Product Selection

32-bit MCU

P/N	CPU	Clock Frequency (MHz)	Memory (KB) ECC	LED				Touch Key Sensor		GPIO	ADC	DAC	Timers	I2C/EUART1/EUART2 with LIN 2.0/2.2 ext/SPI	Package/Pin
				LED Matrix Driver	CAN-FD Controller	LED Video Serial bus	LED LumiBus	Touch key sensors (Gen 3)	Activie proximity sensor						
IS32CS9201	RISC-V	Up to 32	64				•	Up to 27	•	Up to 28	•		•	•	WFQFN-24, WFQFN-32, TSSOP-20
IS32CS9202	ARM Cortex M0+	Up to 50	256		•	•	•	Up to 39	•	Up to 42	•	•	•	•	QFN-48, WQFN-48, QFN-32, WQFN-32, LQFP-48
IS32CS9208	ARM Cortex M0+	Up to 50	256		•	•	•	Up to 39	•	Up to 42	•	•	•	•	WQFN32, WQFN48,QFN48, LQFP48
IS32CS9310	RISC-V	Up to 32	256	8 x 12				Up to 16	•	Up to 35	•	•	•	•	eLQFP-64

Touch Sensor

P/N	Cap touch channels	Touch Sensor Controller				I2C	GPIO	Sensitivity Setting	Package/Pin
		Touch sensor Shield	Auto sleep / wake on touch	Active proximity sensor	Passive proximity sensor				
IS32SE5120A	24	•	•	•	•	•	•	•	LQFP-32
IS32SE5117B	16	•	•		•	•	•	•	QFN-24
IS32SE5118A	8	•	•		•	•	•	•	TSSOP-16

Automotive Product Selection

LIN / CAN

Part Number	Data Rate	VBAT (V)	IBAT	Ctrl. Interface	I/O Port	Package/Pin
IS32IO1021	to 20Kbps	5.5 – 32.0	Normal mode 2.0 mA (typ); Standby mode 32 uA (typ); Sleep mode 22 uA	INH, SLPN, WAKEN, TXD, RXD, RSTN	LIN	eSOP-8, WDFN-8
IS32IO1028	up to 20Kbps	5.5 – 32	Normal mode 2.8 mA (typ); Standby mode 45 uA (typ); Sleep mode 23 uA	EN, TXD, RXD, RSTN	LIN	SOP-8
IS32IO1044	up to 6Mbps	4.75 – 5.25	Normal mode 5mA in recessive (typ); 55mA in dominate (typ); standby mode 25uA (typ)	STB, VIO, TXD, RXD	CANH, CANL	eSOP-8, WDFN-8
IS32IO1163	up to 6Mbps	6.3 – 32	Normal mode 5 (mA) in recessive (typ) 45 (mA) in dominate (typ); standby mode 85uA (typ)	STBN, TXD, RXD, RSTN, CTS	CANH, CANL	eTSSOP-14

In Vehicle Network

Part Number	Type	Description	Wire interfaces	Interfaces	Grade	Package/ Pin
IS32CG5316B0-A2NE3	In vehicle network	G.vn Transceiver for in vehicle networking	G.vn	RG/MII, SPI	AEC-Q100 Grade 2	aQFN-80
IS32CG5516-AQLA2	In vehicle network	Automotive MCU with embedded G.vn transceiver	G.vn	RGMII, MIPI/DVP, CAN, LIN, SPI, I2S, I2C, UART	AEC-Q100 Grade 2	aQFN-80

HomePlug Green PHY (HPGP)

Part Number	Type	Wire interfaces	Interfaces	Grade	Description	Packge/Pin
IS32CG5317	HomePlug Green PHY (HPGP)	PLC	SPI, R/MII	AEC-Q100 Grade 2	Powerline communication for EV and charging station	EP-LQFP

Part Decoder

IS 32 LT 3154 A S - GR L C S2 - TR

- Lumissil Prefix
- Product Family
- Product Type
- Part Number
- Variant
- Country of Origin
- Packaging Option
- Temp. Grade
- Bonding Wire
- Solder Type
- Package Code

Product Family
31 = Commercial/Industrial Analog
32 = Automotive Analog and Mixed Signal

Product Type
AP = Audio Power Amplifier
AS = ASIC
BL = White LED Driver for LCD Backlight
CG= Connectivity
CS = MCU
FB = Fiber
FL = FxLED Driver
IO = Multi-Function I/O Expander, CAN, LIN
LT = Lighting LED Driver
NM = Networking
PM = Power Management
PS = Power Switch
SE = Sensor
SL = Smart Light

Temperature
S1 = Commercial (0°C to 70°C)
S2 = Industrial temp. (-40°C to 85°C)
S3 = Industrial temp. (-40°C to 105°C)
S4 = Industrial temp. (-40°C to 125°C)
A1 = Automotive Grade 3 (-40°C to +85°C)
A2 = Automotive Grade 2 (-40°C to +105°C)
A3 = Automotive Grade 1 (-40 to 125°C)
A4 = Automotive Grade 0 (-40 to 150°C)

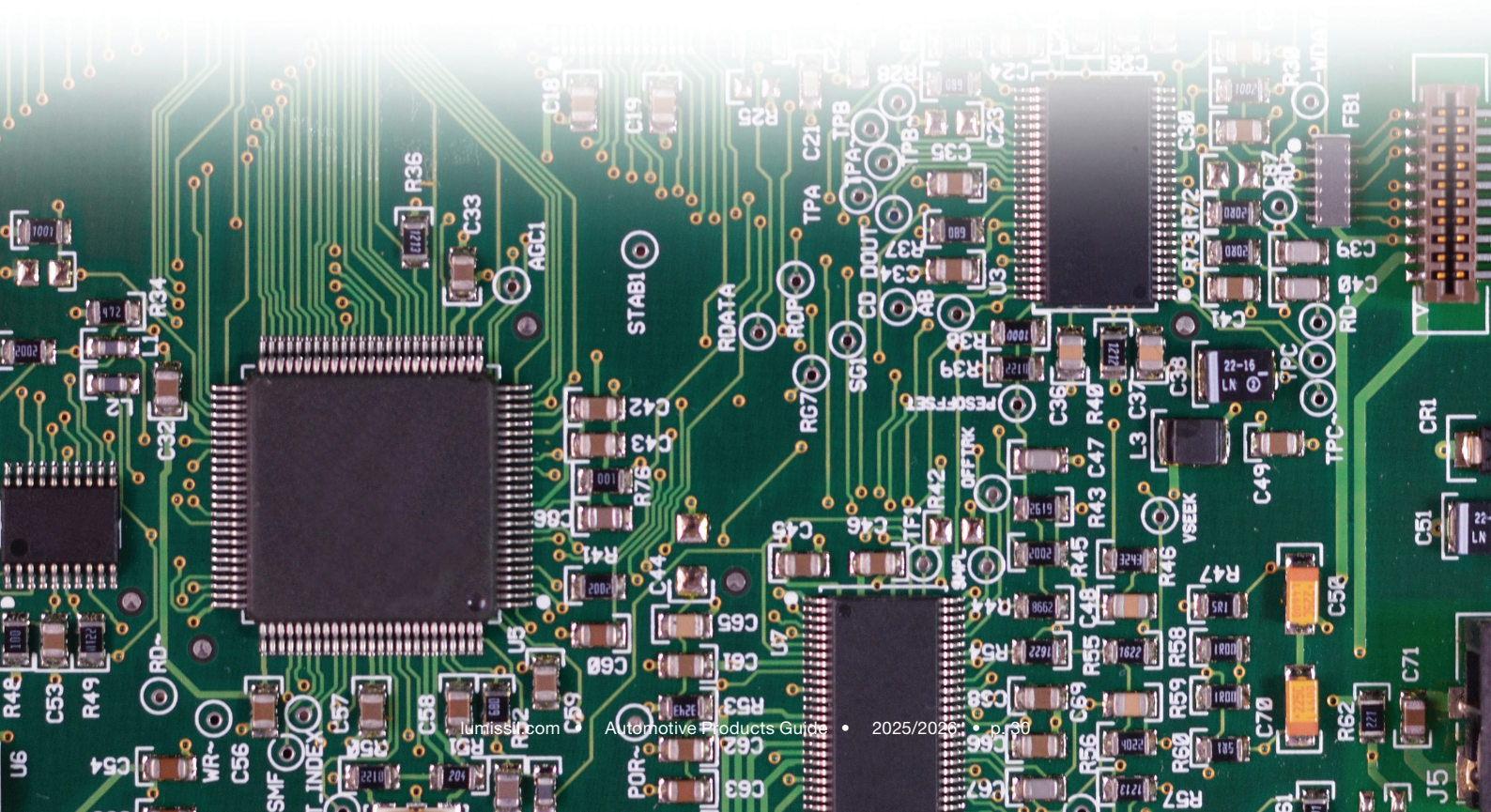
Solder Type
Blank = Sn/Pb
L = Lead-free (RoHS Compliant)

Bonding Wire
Blank = Gold (Au)
C = Copper (Cu)

Package Code
C = WCSP, FCQFN
D = DFN
DW = WFDFN
DWC = WFCDFN
GR = SOP/eSOP
LQ = eLQFP
QF = QFN
QU = UQFN
QW = Wettable flank QFN
QWC = WFCQFN
S = MSOP
SA = SSOP
SD = SOT89
ST = SOT23
TT = TSOT
TQ = eTQFP
UT = UTQFN
Z = eTSSOP
ZN = TSSOP
ZU = eTSSOP top thermal pad

Packaging Option
Blank = Tray or Tube
TR = Tape & Reel

Country of Origin
Blank = Mixed
S = Out of China



Lumissil Locations

Authorized Worldwide Distributors:

Lumissil Contacts

Americas

Regional Headquarters
Milpitas, CA
T. 512-426-8253
E. vstueve@lumissil.com

Europe/MEA

United Kingdom
Bedfordshire
T. +44 (0)7964 118451
E. pcarr@lumissil.com

India

Pune
T. +91-9404233470
E. rnikate@lumissil.com

Israel

Tel Aviv
T. +972-3-7696222
E. tcohen@lumissil.com

Japan

Tokyo
T. +81 3 5339 2950
E. ttakagishi@lumissil.com

Mainland China

Beijing
T. +86 10 82274081
E. hewang@lumissil.com

Shanghai
T. +86 (181) 0571 5357
E. rzhu@lumissil.com

Shenzhen
T. +86 755 88319800
E. she@lumissil.com

Hong Kong
T. +86 755 88319800
E. she@lumissil.com

Xiamen
T. +86 755 88319800
E. she@lumissil.com

Korea

Gyeonggi-do
T. +82 (10) 4396-7224
E. hjang@lumissil.com

South East Asia

T. +65 (63) 163035 Ext 3103
E. dhing@lumissil.com

Taiwan

Taipei
T. +886 -2-2696-2140
E. fsu@lumissil.com

Visit us at

lumissil.com

LUMISSIL MICROSYSTEMS

1623 Buckeye Dr. Milpitas, CA 95035
Tel: 408-969-5100 • marketing@lumissil.com • sales@lumissil.com

Visit us at

lumissil.com

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@lumissil