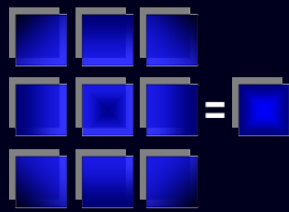


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SHORT FORM CATALOGUE

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AC LED DRIVER

Dimmable Direct-AC LED Driver (8 Pins)

LS9100X-S

- Integrated Bridge Rectifier and MOSFET Driver
- **NO POWER SUPPLY NEEDED!!!**
- Wide AC Input range – up to 310 VAC 50/60 Hz
- 50 mA DC Output
- Ultra Simple circuit solution
- Requires only one R passive component
- Thermal turndown protection
- Voltage shutdown protection
- Thermal enhanced SOP-8 and heat sink PAD Package
- TRIAC Dimmable (Leading/Trailing Edge)
- Programmable LED Current with an external sense resistor

TIMERS

Programmable Digital Delay Timer (14 Pins)

LS7210, LS7210-S

- Delays programmed by 5 Binary Weighted inputs and time-base
- External clock or built-in RC oscillator sources time-base
- **Four Operating Modes:**

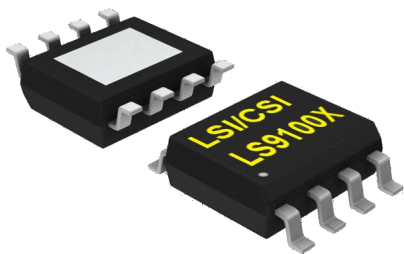
DUAL DELAY	DELAYED OPERATE
ONE-SHOT	DELAYED RELEASE
- 4.75V to 15V operation

Programmable Digital Delay Timer (18 Pins)

LS7211N, LS7211N-S; LS7212N, LS7212N-S

- **Time Base is External Clock or built-in RC Oscillator (LS7211N) Crystal Oscillator (LS7212N)**
- 8 Binary-Weighted Delay Bits
- 3 Selectable Prescalers
- Four Operating Modes
- Reset for Delay Abort
- 3V to 18V Operation (**LS7211N/LS7212N**)
- Programmable frequency division
- Real Time delays from:

50/60Hz Clock (LS7211N)
Watch Crystal (LS7212N)



Programmable Digital Delay Timer (14 Pins)

LS7213R, LS7213R-S

- Produces real-time delays from 10kHz-1kHz time-base range
- **Eight time delay ranges:**

0.1 – 1: Seconds; Minutes; Hours
1 - 10: Seconds; Minutes; Hours
10 - 100: Seconds; Minutes
- RC Oscillator generates time-base
- Four operating modes
- Reset for Delay Abort
- Complementary outputs
- Delay-in-Progress indicator output
- 3V to 5.5V Operation

Programmable Digital Delay Timer (20 Pins)

LS7215, LS7215-S; LS7216, LS7216-S

- **LS7215, LS7216** are extended feature versions of **LS7211N, LS7212N**, respectively.
- **Extended features:**
Latches for loading weighting bits from an 8-bit Bus.
Open-Drain Output for direct drive of a Relay coil returned to chip VDD or to a voltage as high as 110V using a single external transistor.

Light-Activated Programmable Timer (8 Pins)

LS7217, LS7217-S

- Interfaces directly to photo-resistor
- **Programmable duration selection:**
4 hours, 6 hours, 8 hours, dusk-to-dawn
- Shunt regulator
- Relay driver output
- 50Hz / 60Hz time base selection
- 6.5V +/- 0.75V operation
- Applications include lighting timer for low-voltage landscape lighting, street lighting, parking lot lighting, and billboard lighting.

INCREMENTAL ENCODER INTERFACE

Quadrature Clock Decoders (14 Pins; 8 Pins; 8 Pins)

LS7082N1, LS7082N1-S; LS7083N, LS7083N-S; LS7084N, LS7084N-S; LS7183N, LS7183N-S; LS7184N, LS7184N-S

- Each **New** P/N is backward compatible with its predecessor P/N:

LS7082N1: up clock, down clock and direction outputs
LS7083N, LS7083N: up clock and down clock outputs
LS7084N, LS7184N: clock and direction outputs
- Programmable output clock width
- Selectable output resolutions of X1, X2 or X4
- 3V to 12V operation

INCREMENTAL ENCODER INTERFACE

24-Bit Quadrature Counter (20 Pins; 24 Pins)

LS7166A, LS7166A-S; LS7166A-TS24

- Interfaces Incremental Encoders to Microprocessor Bus
- 1.2MHz Quadrature Clock Frequency
- x1, x2, x4 Frequency Multiplication
- 8-Bit I/O Bus
- 24-Bit Comparator
- TTL and CMOS compatible
- 3V to 5.5V operation

24-Bit Dual Axes Quadrature Multi-Mode Counter (28 Pins)

LS7267, LS7267-S, LS7267-TS

- Up to 50MHz in non-quadrature mode
- Up to 5.6 MHz clock frequency in x4 quadrature mode
- Dual 24 bit comparators
- Digital filtering of input quadrature clocks
- Programmable 8-bit separate filter clocks prescalers for each axis
- Error flags for noise exceeding filter band width
- Programmable index input and other programmable I/Os
- Independent mode programmability for each axis
- Programmable modes:
 - Quadrature (x1, x2, x4) / Non-Quadrature
 - Normal / Modulo-N / Range Limit / Non-Recycle
 - Binary / BCD
- 8-bit 3-State data I/O bus
- 3V to 5.5V operation ($V_{DD} - V_{SS}$)
- TTL/CMOS compatible I/Os

32-Bit Quadrature Counter with Serial Interface (14 Pins)

LS7366R, LS7366R-S, LS7366R-TS

- Interfaces Incremental Encoders to Microprocessors via 4-wire **SPI/Microwire bus**
- Up to 9.6MHz Quadrature Clock Frequency with x1, x2 and x4 Frequency Multiplication
- Internal digital filtering of Quadrature clocks and Index
- Internal decoding of Quadrature clocks
- Index Driven Operations
- 8-Bit, 16-Bit, 24-Bit and 32-Bit Programmable Configuration
- 3V to 5.5V operation

24-Bit x 4-Axes Quadrature Clock Counter (48 Pins)

LS7566R-TS

- Interfaces Incremental Encoders to a Microprocessor Bus
- Up to 9.6MHz Quadrature Clock Frequency
- Independent Programmability of each axis for multiple count and I/O modes with Independent Read/Write Control Registers
- x1, x2 and x4 Resolution Multiplication
- Maskable processor Interrupt Output
- 3-state Octal I/O Bus
- Digital Filtering of Quadrature Clock
- 3V to 5.5V Operation

32-Bit x 1-Axis Quadrature Counter (24 Pins; 38 Pins)

LS7766SO, LS7766SO-S, LS7766SO-TS; LS7766SH-TS

32-Bit x 2-Axes Quadrature Counter (28 Pins; 48 Pins)

LS7766DO, LS7766DO-S, LS7766DO-TS; LS7766DH-TS

- Direct Interface with Incremental Encoders
- 9.6MHz (5V), 4.5MHz (3.3V) Quadrature Clock Frequency
- Programmable I/Os for Index and Marker Flags
- Separate mode-control registers for each axis
- Sets of 32-bit counters, input registers, output registers, comparators and octal status registers for each axis
- Digital filtering of the input quadrature clocks
- Pin selectable 3-state Hex / Octal bus
- **SO / DO** = Single-axis / Dual-axes Octal I/O Bus
- **SH / DH** = Single-axis / Dual-axes with pin selectable Hex / Octal I/O Bus
- 3V to 5.5V Operating voltage range

NEW!!! Coming 2020!!!

32-Bit Quadrature Counter with I²C Interface (16 Pins)

LS7866-S, LS7866-TS

- Interfaces Incremental Encoders to Microprocessors via I²C standard serial bus in 7-bit address format
- x1, x2 and x4 quadrature or bi-directional non-quadrature
- Either of these modes can further be combined with Free-Run, Non-Recycle, Mod-N and Range-Limit modes
- Dual Status registers for dynamic and freeze-frame status
- Quadrature A, B and Z inputs with digital filters.
- Programmable x1, x2 and x4 quadrature or bidirectional non-quadrature input modes
- 8-Bit, 16-Bit, 24-Bit and 32-Bit Programmable Configuration
- Up to 400 KHz I²C clock speed
- 3 selectable address pins for up to 8 devices on the bus
- Write-All addressing mode for writing to all devices simultaneously
- 3V to 5.5V operation



LIGHTING CONTROLS

Multi-Level Dimmer (16 Pins)

LS7315, LS7315-SW

- Pushbutton input controls
- Up to 10 selectable intensity (power) levels
- Controls high-voltage lamps and electronic-transformer coupled low-voltage lamps via a triac interface
- A selected BRIGHTNESS LEVEL input becomes an output that can drive an LED to indicate the selected intensity
- Applications include wall switch (two-wire) and plug-in (three-wire) dimmer configurations

AGC Touch Control Light Switch with Soft-Off (8 Pins)

LS7540, LS7540-S

- Touch Sensitivity is independent of Touch Plate Size and Line-Plug Polarity.
- If Off, a 'Touch' produces Max Intensity (On) instantaneously
- If On, a 'Touch' initiates intensity ramp-down (**Soft-Off**) Max intensity to Off ramp-down time is programmed by an external RC. The **Soft-Off** feature provides light for the User to exit the room. Ramp-down time = 0 if no RC is connected.
- Applying a 'Touch' during ramp-down causes the ramp-down to stop. Once stopped, a 'Touch' causes the ramp-down to Off to resume. Stopping and starting the ramp-down can be repeated as often as desired giving the User full control in setting the light intensity.
- Pushbutton control can be implemented
- Applications include Wall Switches and Touch Control modules for small table lamps to large floor lamps.

Touch Control Step Dimmer with AGC (8 Pins)

LS7541, LS7541-S

- Touch Sensitivity is independent of Touch Plate Size and Line-Plug Polarity.
- Pin selection of three available Brightness Step Sequences
- **LS7539** and **LS7541** are functionally equivalent
- Pushbutton control can be implemented
- Applications include: Wall Switch step dimmers and Touch Control step dimmer modules for small table lamps to large floor lamps, On-Off touch control of under-cabinet fluorescent lamps, Screw-in and built-in adapter modules for converting table and floor lamps to touch control for step dimming.



Touch Control Halogen Light Dimmer (8 Pins)

LS7631, LS7631-S; LS7632, LS7632-S

- Touch or pushbutton input control
- Controls high-voltage lamps and *transformer-coupled low-voltage halogen lamps. ***Magnetic transformers and many electronic transformers.**
- Controls **Fluorescents** and **CFLs** via dimming ballasts
- Direct replacement for **P/N SLB0587**
- Soft-turn on
- Automatic safety shutdown
- 3-state input selects one of three modes of operation
- **LS7631** - dimming cycles through Maximum and Minimum
- **LS7632** - dimming stops at Maximum and Minimum

Touch Control Halogen Light Dimmer (8 Pins)

LS7634, LS7634-S; LS7635, LS7635-S

- **LS7634** functionally equivalent to **LS7631**
- **LS7635** functionally equivalent to **LS7632**
- **Compatible with virtually all electronic transformers**

Reverse-Phase (Trailing-Edge) Halogen Light Dimmer (8 Pins)

LS7636, LS7636-S; LS7637, LS7637-S

- **Pushbutton control** for direct or remote activation or **Touch control** for direct activation
- Controls high-voltage lamps and ***electronic transformer** coupled low-voltage halogen lamps. ***Compatible with all electronic transformers.**
- Controls **Fluorescents** and **CFLs** via dimming ballasts
- Drives FETs or IGBTs
- Reverse-phase technology **eliminates RFI** generation
- Soft turn-on and soft turn-off
- 3-state input selects one of three modes of operation
- **LS7636 P/Ns** - dimming cycles through Maximum and Minimum
- **LS7637 P/Ns** - dimming stops at Maximum and Minimum

Voltage Controlled Light Dimmer with Soft On/Off (8 Pins)

LS7642, LS7642-S; LS7642FO, LS7642FO-S

- Touch or pushbutton input control for soft turn-on and turn-off.
- Analog voltage input directly controls lamp intensity
- Interfaces easily with a uC for programmable lighting control
- Controls high-voltage lamps and *transformer-coupled low-voltage halogen lamps. ***Magnetic transformers and virtually all electronic transformers.**
- Automatic safety shutdown
- Controls **Fluorescents** and **CFLs** via dimming ballasts
- **"FO"** version powers up at the intensity set by the analog voltage.

COUNTERS

24-Bit Multi-Mode Counter (20 Pins; 24 Pins)

LS7166A, LS7166A-S; LS7166A-TS24

- 25MHz Count Frequency
- 8-Bit I/O bus
- 24-Bit Comparator
- **Programmable Count Modes:**
 - Quadrature (x1, x2, x4); Non-Quadrature Normal/Modulo-N; 24 Hour Clock; Non-Recycle, Binary; BCD
- TTL and CMOS compatible
- 3V to 5.5V operation

24-Bit Dual Axes Quadrature Multi-Mode Counter (28 Pin)

LS7267, LS7267-S, LS7267-TS

- Up to 50MHz in non-quadrature mode, Up to 5.6 MHz clock frequency in x4 quadrature mode
- Dual 24 bit comparators
- Digital filtering of input quadrature clocks
- Programmable 8-bit separate filter clocks prescalers for each axis
- Error flags for noise exceeding filter band width
- Programmable index input and other programmable I/Os
- Independent mode programmability for each axis
- Programmable modes:
 - Quadrature (x1, x2, x4)/Non-Quadrature, Normal/Modulo-N/Range Limit/Non-Recycle, Binary/BCD
- 8-bit 3-State data I/O bus
- 3V to 5.5V operation ($V_{DD} - V_{SS}$)
- TTL/CMOS compatible I/Os

32-Bit Multi-Mode Counter with Serial Interface (14 Pins)

LS7366R, LS7366R-S, LS7366R-TS

- Serial Peripheral Interface (SPI)
- Up to 40MHz count frequency
- 32-bit Counter, Comparator, Input and Output Registers
- Two 8-bit registers to program functional modes
- 8-bit instruction register and 8-bit status register
- Programmable input for Counter Load Output Register Load or Counter Reset
- Modulo-N, Non-recycle, Range-limit or
- Free-running modes of up/down counting
- 8-bit, 16-bit, 24-bit and 32-bit programmable configuration
- 3V to 5.5V operation

24-Bit x 4 Multi-Mode Counter (48 Pins)

LS7566R-TS

- Up to 40MHz Count Frequency
- 3-state Octal I/O Bus
- Each of the four Binary Counters have independent support circuits: Comparators, Registers, Latches, etc.
- **Programmable Count Modes include:**
 - Quadrature (x1, x2, x4); Non-Quadrature (Up/Down); Free-run; Non-recycle; Modulo-N; Range-limit
- 3V to 5.5V operation

32-Bit x 1-Axis Multi-Mode Counter (24 Pins; 38 Pins)

LS7766SO, LS7766SO-S, LS7766SO-TS; LS7766SH-TS

32-Bit x 2-Axes Multi-Mode Counter (28 Pins; 48 Pins)

LS7766DO, LS7766DO-S, LS7766DO-TS; LS7766DH-TS

- 40MHz (5V), 20MHz (3.3V) Count Frequency
- Separate mode-control registers for each axis
- Sets of 32-bit counters, input registers, output registers, comparators and octal status registers for each axis
- Pin selectable 3-state Hex/Octal Bus
- **SO/DO** = Single-axis/Dual-axes Octal I/O Bus
- **SH/DH** = Single-axis/Dual-axes with pin selectable Hex/Octal I/O Bus
- **Programmable Count Modes:**
 - Quadrature (x1, x2, x4); Non-Quadrature (Up/Down), Range Limit; Normal/Modulo-N; Non-Recycle
- 3V to 5.5V Operating voltage range

NEW!!! Coming 2020!!!

32-Bit Quadrature Counter with I²C Interface (16 Pins)

LS7866-S, LS7866-TS — See Page 2

PIR SENSOR INTERFACE ICs

All ICs feature:

- Direct Interface to PIR sensor
- Two-stage differential amplifier-filter
- Amplifier-filter characteristics externally programmable
- Noise rejection circuitry
- Programmable on-time
- Single Pulse Mode
- Dual Pulse Mode (*except **LS6506R, LS6507R**)
- LED indicator output

PIR Sensor Interface (16 Pins)

LS6506R, LS6506R-S; LS6507R, LS6507R-S

- **LS6506R** drives a Latching Relay
- **LS6507R** drives a Triac
- Same common features as the other PIR Sensor Interface ICs except for Dual Pulse Mode
- Sensitivity adjustment
- Pushbutton for Manual-On/Off control
- Ambient light override adjustment
- Selectable time-out adjustments
- **3 Operating Modes:**
 - **MODE 1**
 - A) Manual On or Auto On/Auto Off
 - B) Manual On/Manual Off with Auto Off or Manual On
 - **MODE 2**
 - Manual On/Manual off or Auto Off
 - **MODE 3**
 - Manual On or Auto On/Manual Off or Auto Off
- Applications include Ceiling or Wall-Mounted Occupancy Sensors for control of fluorescent lights, electronic and magnetic ballasts, motors (**LS6506R**), incandescent lamps (**LS6506R, LS6507R**)

PIR SENSOR INTERFACE ICs

All ICs feature:

- Direct Interface to PIR sensor
- Two-stage differential amplifier-filter
- Amplifier-filter characteristics externally programmable
- Noise rejection circuitry
- Programmable on-time
- Single Pulse Mode
- Dual Pulse Mode (*except **LS6506R**, **LS6507R**)
- LED indicator output

PIR Sensor Interface (14 Pins)

LS6511, LS6511-S; LS6511N, LS6511N-S

- **LS6511N** backward compatible with **LS6511**
- Concurrent pulse mode
- 5V Shunt Regulator
- Low Voltage Detection
- Direct relay drive
- Very low quiescent current
- Ideal for security systems; automatic doors; motion triggered remote monitoring (for cameras, etc.)

PIR Sensor Interface (14 Pins; 16 Pins)

LS6512, LS6512-S; LS6513, LS6513-S

- **LS6512** same as **LS6511N** without Low Voltage Detection
- **LS6513** same as **LS6511N** and **LS6512** except Low Voltage Detection is User selectable and Enable function is an added feature which is also User selectable
- **LS6512** is ideal for automatic doors; motion-triggered remote monitoring (for cameras, etc.) **LS6513** can be used in any application in place of **LS6511N** and **LS6512** determined solely by the User selected features.

PIR Sensor Interface (16 Pins)

LS6522, LS6522-S, LS6522-SW

- Selectable dead time
- Ambient light inhibit
- Regulated 5V for PIR Sensor
- Triac/Relay output interface for AC/DC applications
- Applications include triac or relay controlled indoor occupancy sensors and outdoor motion-triggered lighting providing energy savings, security and convenience

PIR Sensor Interface (14 Pins)

LS6525, LS6525-S; LS6526, LS6526-S

- Derives power from a **3.0V Lithium battery**
- V_{DD} operating range 2.3 to 3.6V
- 25 μ A maximum quiescent current (LS6525)
- 30 μ A maximum quiescent current (LS6526)
- Direct interface with PIR Sensor
- Analog and digital interrupt signals outputs for interfacing with an MCU
- 2.175V regulated output
- Low Battery output (**LS6526**)

BRUSHLESS DC MOTOR CONTROLS

BLDC Motor Commutator/Controller (20 Pins)

LS7260C, LS7260C-S, LS7260C-TS; LS7262C, LS7262C-S, LS7262C-TS

- Direct drive of (P and N)-Channel FETs (**LS7260C**)
- Direct drive of PNP and NPN Transistors (**LS7262C**)
- Open or closed loop control of 3 and 4 phase motors
- Hall Sensor inputs control output commutation sequence for electrical sensor spacing's of 60°, 120°, 240°, or 300°
- Speed controlled by Pulse Width Modulation (**PWM**) of output drivers
- Control inputs include Analog Speed, Forward/Reverse, Output Enable and Positive Static Braking
- Overcurrent Sensing disables output drivers
- Application circuits for FETs and Bipolar Transistors Drivers
- 5V to 28V operation

BLDC Motor Commutator/Controller (20 Pins)

LS7362C, LS7362C-S, LS7362C-TS

- Same features as **LS7262C** except Pulse Width Modulation occurs only in low-side drivers allowing use with High Voltage motors.

BLDC Motor Controller (28 Pins)

LS7560F, LS7560F-S, LS7560F-TS; LS7561F, LS7561F-S, LS7561F-TS

- Single-Chip Open or Closed Loop Motor Controller
- **User Selectable Features Include:**
 - PWM of All Drivers or Low-Side Drivers Only
 - Polarity of High Side Drivers, Static or Dynamic Braking 60°/300° or 120°/240° Electrical Sensor Spacing
- Level-Sensitive Enable
- Cycle-by-Cycle Overcurrent Sensing
- Overcurrent Condition Disables All Drivers (**LS7560F**) Or Low-Side Drivers Only (**LS7561F**)
- Fault LED Indicator Output
- 10V to 18V Operation

AC MOTOR CONTROLS

AC Motor Multi-Speed Controller (16 Pins)

LS7315, LS7315-SW

- 10 I/Os to Select/Indicate up to ten Power Levels
- Inputs activated by Touch or Pushbutton Switch
- Output switches pure and precise Ac Power to Load
- Operates with 50/60 Hz line frequency
- Rugged, latchup-free process technology
- +10V to +14V operation ($V_{SS} - V_{DD}$)

AC Motor Multi-Speed Controller (14 Pins)

LS7317, LS7317-S

- Pushbutton input controls
- Up to 5 selectable speed (power) levels
- Auto-Pulse, Boost and Off control inputs
- A selected speed level input becomes an output that can drive an LED to indicate the selected speed
- Applications include consumer appliances such as Blenders, Range Hoods, Fans, etc.

STEPPER MOTOR CONTROLS

Full/Half Step Stepper Motor Controller (24 Pins)

LS7290, LS7290-S, LS7290-TS

- Controls Bipolar and Unipolar Motors
- Cost effective replacement for L297
- Direction control
- Reset input
- Step control input
- Enable input
- PWM chopper control circuit for current control
- Two peak current comparators with external reference input
- Step control frequency and duty cycle controlled by external frequency source or by an internal crystal controlled oscillator (typically 8 MHz)
- All inputs and outputs TTL/CMOS compatible (TTL for 5V operation)

Multi-Mode Stepper Motor Controller (24 Pins, 28 Pins)

LS8292, LS8292-S, LS8292-TS;

LS8293, LS8293-S, LS8293-TS

- Controls Bipolar and Unipolar Motors
- Step Modes: Full, 1/2, 1/4, 1/8, 1/16 and 1/32
- PWM outputs for driving H-bridge
- Precision DAC references for PWM sense comparators
- Fast, Slow and Mixed decay modes
- Power saving holding torque for idling motor
- Automatic switching to holding torque with programmable delay when motor idles
- Programmable delay for sense input blanking
- Programmable delay for mixed decay cycles
- Input for Step command
- Input for Direction command
- Input for reset to Home
- Input for disabling PWM outputs
- Input/Output for external clock or built-in oscillator
- Supply current less than 40 μ A
- Supply voltage 4.5 to 5.5V

Stepper Motor Controller (20 Pins; 20 Pins)

LS8297, LS8297-S, LS8297-TS;

LS8297CT, LS8297CT-S, LS8297CT-TS

- **Low cost, low current, pin-compatible replacement for L297**
- Torque Ripple Compensated half-steps – **LS8297CT**
- Controls two-phase **Bipolar** and four-phase **Unipolar** motors
- Half-step and full-step modes
- Direct interface to **L298 for Bipolar motors**
- Interfaces to four AND Gates driving four N-Channel MOSFETs for **Unipolar motors**
- Normal/wave drive
- PWM chopper circuit for current control
- Two over current sense comparators with external references input
- All inputs and outputs TTL/CMOS compatible (TTL for 5V operation)
- **Supply current < 400uA**
- Supply voltage: 4.75 to 7V

Stepper Motor Controller (24 Pins)

LS8397, LS8397-S, LS8397-TS

- **Low cost, low current, replacement for L297.**
- **L297** operating modes with added functions:
Selectable Torque Ripple Compensation MODE
Selectable Holding Torque MODE
- Other features same as **LS8297**

LINE DRIVERS

Quad-Channel Differential Line Drivers (16 Pins, 20 pins)

LS7272, LS7272-S, LS7272-TS;

LS7273, LS7273-S, LS7273-TS;

LS7272-20, LS7272-S20, LS7272-TS20;

LS7273-20, LS7273-S20, LS7273-TS20;

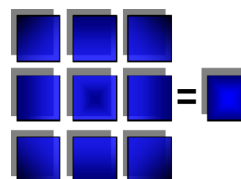
LS7272F, LS7272F-S, LS7272F-TS

- LS7272 and LS7273 are more feature rich and cost effective than OL7272 and EL7273
- LS7272 is a Pin for Pin replaceable for OL7272 and LS7273 is functionally equivalent to EL7273
- Push-Pull or Open Drain output drivers (LS7272)
- Open Drain output drivers only (LS7273)
- Voltage range = 4.5V to 30V ($V_{DD}-V_{SS}$)
- 120mA sink/source output current drive
- Operating frequency up to 4MHz
- Thermal shutdown protection for output driver overload
- Input enable with thermal shutdown disconnect feature
- 1.5 amp dynamic peak output current drive
- Outputs RS422A compatible
- Inputs CMOS/TTL compatible with hysteresis
- Outputs fully connected or tri-state (high impedance) mode.
- LS7272F and LS7273F has the outputs always in Push-Pull Mode

Quad-Channel Differential Line Drivers (16 Pins)

LS7273N, LS7273N-S, LS7273N-TS

- Open –drain output drivers for return to power supply independent of V_{DD}
- Voltage range = 4.5V to 30V ($V_{DD}-V_{SS}$)
- 120mA Sink/Source output drive
- Operating frequency up to 4 MHz
- Thermal shutdown protection for output driver overload
- Enable input with Thermal Shutdown disconnect feature
- Outputs RS422A compatible
- Thermal shutdown protection disable input
- Outputs fully connected or tri-state (high-impedance) mode

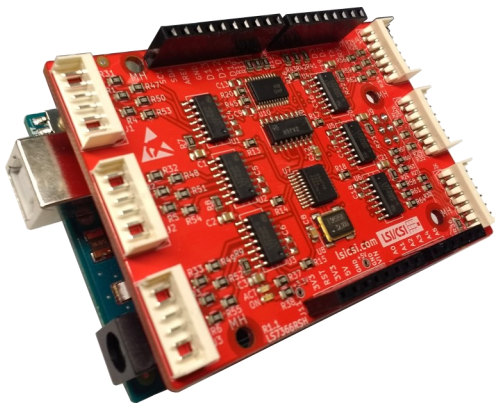


PROGRAMMABLE DIGITAL LOCKS

Automotive Ignition Digital Lock (14 Pins)

LS7220, LS7220-S

- 5,040 four digit Combinations (for a 10 number keypad)
- Combinations are hard-wire programmed
- Sense input enables chip operation
- Save Memory feature saves Unlock Condition for Valet Parking
- Save input sets Save Memory and Lock input resets Save Memory
- Save Memory and Lock Status outputs
- Convenience Delay determined by external capacitor
- Static or Momentary Lock Control output



DEVELOPMENT APPLICATIONS

Dimmable Flicker-Free LED Light Stick (Bundle)

L11-5L-1S10-35-BD1, L11-5L-1S10-35; L11-5L-1S10-40-BD1, L11-5L-1S10-40;

The **L11-5L-1S10** is a complete LED lighting solution intended for display cases/windows, work stations, store lighting, bar lighting, under/above cabinets, closets, garages, shelves, ceilings, columns or anywhere that needs an extra burst of light. This powerful, low-profile LED light stick will enhance poorly lit regions of your home or business. Outputting 500 lumens of light guarantees this light stick will get the job done. The simple peel and stick installation process allows you to install the light stick on any flat surface, or use the included mounting brackets. Important features such as the LED's current limiting, thermal turn-down, and voltage shutdown protection circuitry are integrated into this system guaranteeing safety and long-lasting LEDs. Powered by our own LED Driver IC, the LS9100X - designed to be driven directly off the 120VAC line-voltage. The **L11-5L-1S10** is also TRIAC dimmable and linkable up to 25 units!

- Offered as a bundle with 3 units
- Option for additional single units
- 3500K or 4000K CCT

6 Channel LS7366R shield for Arduino

LS7366RSH

The LS7366RSH features on-board 6 channels encoder platform for a full out-of-the-box experience and rapid development. This board is directly compatible with the Arduino boards. It unloads all the computation of keeping track of the encoders and interfaces directly with the Arduino board via the SPI and IOs. For additional information visit the LS7366R product page.

Sample Request Form

Samples are a great way to test our products to verify they meet the requirements of your specific application.

We offer 2 complimentary free samples upon approval for most of our products by simply filling out the Sample Request Form at www.lsicsi.com/request-sample

Please include product name, description of your application and reason for trial sample.

Include name, company name, company address, contact phone, and email.

Samples cannot be sent to a P.O. Box, and will be shipped via U.S. Postal System unless a preferred shipping account number is provided. *All requests must be approved prior to shipment.*

Additionally, feel free to email us at service@lsicsi.com or call us at (+1) 631-271-0400 with any questions.

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HIGHLIGHTED PARTS CONTACT FACTORY- LIMITED AVAILABILITY

LAST TIME BUY CONTACT FACTORY FOR AVAILABILITY		
LSI P/N	LSI P/N	LSI P/N
LS7055	LS7211 (-S)	LS7266R1
LS7056	LS7212 (-S)	LS7310
LS7062 (-S)	LS7220	LS7534 (-S)
LS7082N	LS7222	LS7535FT (-S)
LS7166 (-TS)	LS7232 (-S)	LS7538 (-S)
LS7183 (-S)	LS7232NT (-S)	LS7539 (-S)
LS7184 (-S)	LS7232	LS7560N (-S) (-TS)
LS7210 (-S)	LS7234	LS7561N (-S) (-TS)

Mixed-Signal Full Custom Integrated Circuits from LSI/CSI

In addition to its line of Standard Product ICs, LSI/CSI has been producing Turnkey, Mixed-Signal Full Custom ICs for a broad range of industries since 1969.

Our [Capabilities Brochure](#) describes the Processes, Non-Volatile Memory Options and Design Methodologies that show why we are the ideal high-volume, low-cost solution.

Please contact us to receive our [Capabilities Brochure](#).
We can be reached at **631-271-0400**, or service@lsicsi.com

Alternatively, you can download this brochure from our Web Site at: www.lsicsi.com/brochure

Ordering System

<u>CODE</u>	<u>PACKAGE</u>	<u>NOTES</u>
P/N	RoHS Compliant Standard Plastic Dip	1, 2, 3
P/N-S	RoHS Compliant Standard SOIC	1, 2, 3, 4
P/N-SW	RoHS Compliant Widebody SOIC option	1, 2, 3, 4
P/N-C	Ceramic DIP Option	1, 2, 3, 5
P/N-CM	Ceramic Military DIP Option	1, 2, 3, 6
P/N-TS	RoHS Compliant TSSOP	1, 2, 3, 4

Note 1: See Table 1 for package body widths

Note 2: Package outline drawings conform to JEDEC standards

Note 3: Packages shipped in anti-static tubes

Note 4: Tape and Reel option is available. Contact factory for details.

Note 5: Includes Mil-Std 883E Class B visual per Method 2014, plus fine and gross leak testing per Method 1014

Note 6: Includes all testing per Note 5 plus HTRB Burn-In at 125 ° C for 168 hours per Mil-Std 883E Class B, Method 1015.

# of Pins	P/N, -C, -CM	-S	-SW	-TS
8	300	150	-	-
14	300	150	-	173
16	300	150	300	-
18	300	300	-	-
20	300	300	-	173
24	600	300	-	173
28	600	300	-	173
38	-	-	-	173
40	600	-	-	-
48	-	-	-	240

Table 1. Package Body Width (mils) - All packages conform to JEDEC Standards

ADDITIONAL ORDERING OPTIONS:

Probed Wafers (P/N-PW), Waffle Packed Die (P/N-WP)

All our standard Products are assembled in RoHS Compliant packages. Non-RoHS packages may be available on special order. Please contact our Sales Department for more information.

LSI/CSI [Data Sheets](http://www.lsicsi.com) can be downloaded directly from our website, www.lsicsi.com

Price and delivery information can be obtained by calling **631-271-0400** or sending an email to service@lsicsi.com

[Package Outline Drawings](http://www.lsicsi.com/order-info) are available at: www.lsicsi.com/order-info

LSI/CSI is compliant to ISO 9001-2008
LSI/CSI has been ISO certified/compliant since 1996



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