

Serial-Interfaced 6-Digit LED controller with key scan

Data Brief

Features

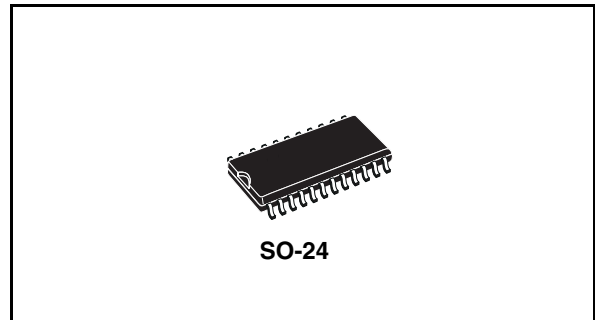
- LED driver with 14 outputs (8 segments / 6 digits)
- 40mA load current capability for each segment
- Outputs connect directly to the LEDs or can be open-drain
- Key-scanning (8x2 matrix)
- Low power consumption in standby mode
- 3-wire Serial Bus Interface (CLK, STB, DIN/DOUT)
- 8-step dimming circuit to control the overall display brightness
- Single external resistor for output current setting
- Inputs with Schmitt trigger give superior noise immunity
- A single LED digit output (DIG1_LED) can be used to drive up to 8 discrete LEDs
- 8-step dimming circuit to control brightness of individual LEDs for LED digit
- 5.0V ($\pm 10\%$) for V_{CC}
- Drives common-anode LED digits
- Built-in power on reset and soft-start circuits
- Available in SO24 package
- -40°C to 85°C operating temperature range

Applications

- Set Top Boxes
- White goods
- Home appliances
- DVD players, VCRs

Order codes

Part number	Temperature range	Package	Packaging
STLED316SMTR	-65 to $+150^{\circ}\text{C}$	SO-24	250 parts per reel



Description

The STLED316S is a compact LED controller and driver that interface microprocessors to LED displays through serial 3-wire interface. It drives LED connected in common anode configuration. The STLED316S drives up to 48 discrete LEDs in 8 segment/6 digit configuration while functioning from a supply voltage of 5.0V. Additionally it can be used to drive 8 discrete LEDs which form a part of LED digit. The individual LEDs are wired as segments of a digit and brightness of these individual LEDs can be controlled digitally. The maximum segment current for the display digits is set through a single external resistor. Individual digits may be addressed and updated without re-writing the entire display.

Additionally it includes key scanning for an 8x2 key matrix which automatically scans a matrix of up to 16 switches. STLED316S supports numeric-type displays and reduces the overall BOM costs through high integration. Also it provides ESD protection of greater than 2kV HBM.

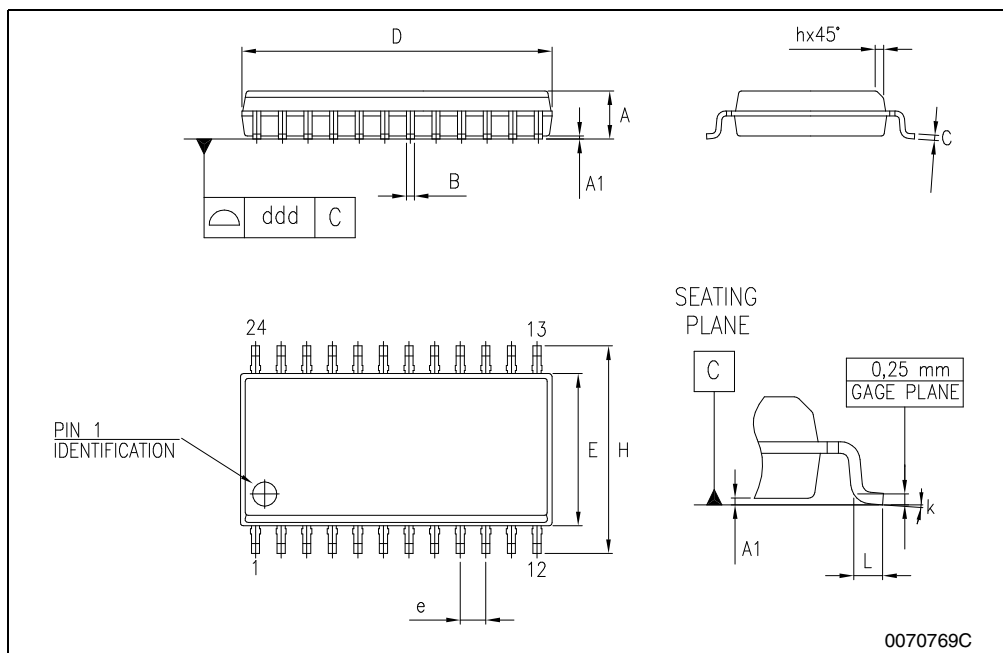
The LED controller/driver is ideal as a peripheral device to interface the display with a singlechip microcomputer.

Package mechanical data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect. The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com

SO-24 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.35		2.65	0.093		0.104
A1	0.1		0.30	0.004		0.012
B	0.33		0.51	0.013		0.020
C	0.23		0.32	0.009		0.013
D	15.20		15.60	0.598		0.614
E	7.4		7.6	0.291		0.299
e		1.27			0.050	
H	10.00		10.65	0.394		0.419
h	0.25		0.75	0.010		0.030
L	0.4		1.27	0.016		0.050
k	0°		8°	0°		8°
ddd			0.100			0.004



Revision history

Table 1. Revision history

Date	Revision	Changes
07-Feb-2007	1	First release

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