

Simple 90V, 25mA, Temperature Compensated, Constant Current, LED Driver IC

Features

- ▶ 5.0V to 90V operating range (V_{A-B})
- ▶ 25mA $\pm 10\%$ at 5-90V
- ▶ 0.01% / °C typical temperature coefficient
- ▶ No external components (two terminal device)
- ▶ Can be paralleled for higher current

Applications

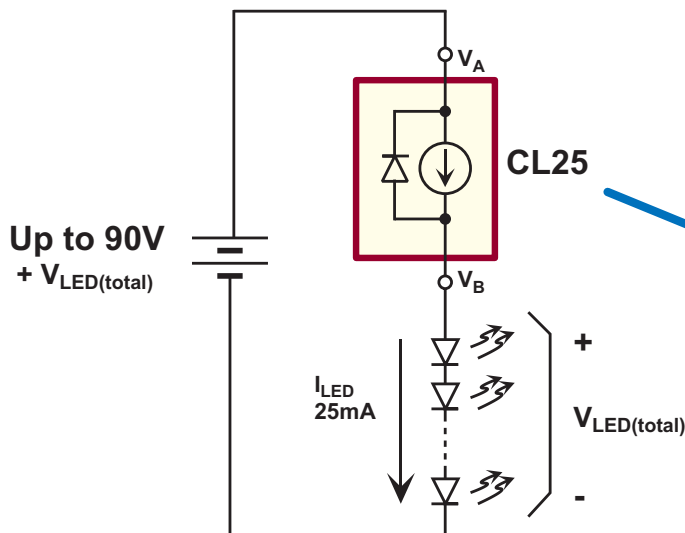
- ▶ LED channel lighting
- ▶ Industrial lamp indicators
- ▶ Accent lighting

General Description

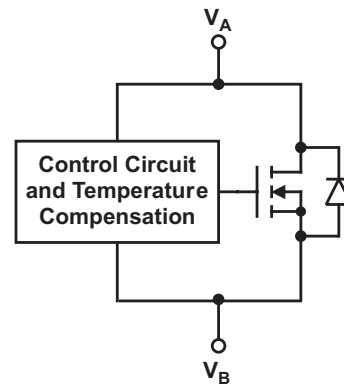
The Supertex CL25 is a high voltage, temperature compensated, constant current source. The device is trimmed to provide a constant current of 25mA $\pm 10\%$ at an input voltage of 5-90V. No external components are required. The device can be used as a two terminal constant current source or constant current sink.

A typical application for the CL25 is to drive LEDs with a constant current of 25mA. They can also be used in parallel to provide higher currents such as 50mA, 75mA or 100mA. The device is available in TO-92 and TO-243AA (SOT-89) packaging.

Typical Application Circuit



Functional Circuit Diagram



Ordering Information

Device	Package Options	
	TO-92	TO-243AA (SOT-89)
CL25	CL25N3-G	CL25N8-G

-G indicates package is RoHS compliant ('Green')



Thermal Characteristics

Package	Power Dissipation @ $T_A = 25^\circ\text{C}$	θ_{JC} °C/W	θ_{JA} °C/W
TO-92	0.6W	125	170
TO-243AA (SOT-89)	1.3W*	15	78*

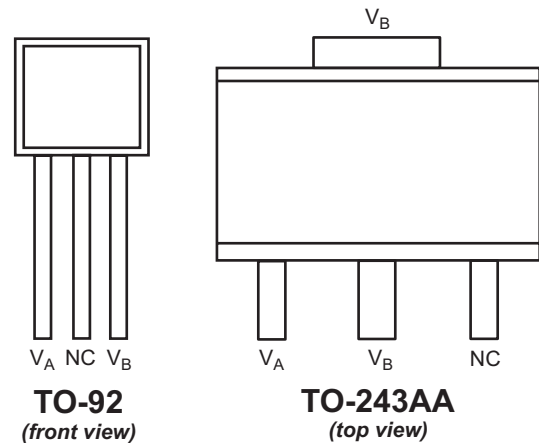
* Mounted on FR4 board; 25mm x 25mm x 1.57mm

Absolute Maximum Ratings

Parameter	Value
Operating voltage, V_{A-B}	100V
Operating junction temperature, T_J	-40°C to +125°C
Storage temperature, T_S	-55°C to +150°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these conditions is not implied. Continuous operation of the device at the absolute rating level may affect device reliability. All voltages are referenced to device ground.

Pin Configuration



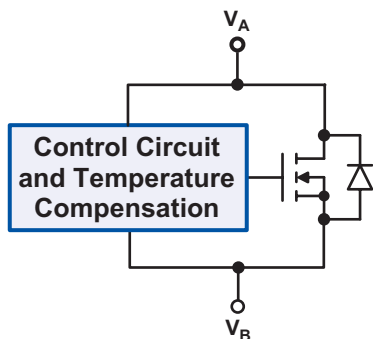
NC = No Connect

Electrical Characteristics

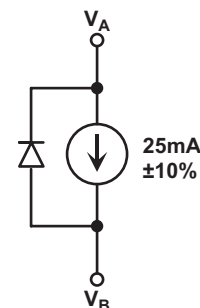
($T_J=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Min	Typ	Max	Units	Conditions
V_{A-B}	Operating voltage	5	-	90	V	---
I_{A-B}	Current regulation	22.5	25	27.5	mA	$V_{A-B} = 5\text{V} - 90\text{V}$
$\Delta I_{A-B}/\Delta T$	I_{A-B} temperature coefficient	-	0.01	-	%/°C	$V_{A-B} = 45\text{V}$, $T_J = -40^\circ\text{C}$ to $+100^\circ\text{C}$
T_J	Operating junction temperature	-40	-	125	°C	---
R_{A-B}	Dynamic resistance	-	300k	-	Ω	---

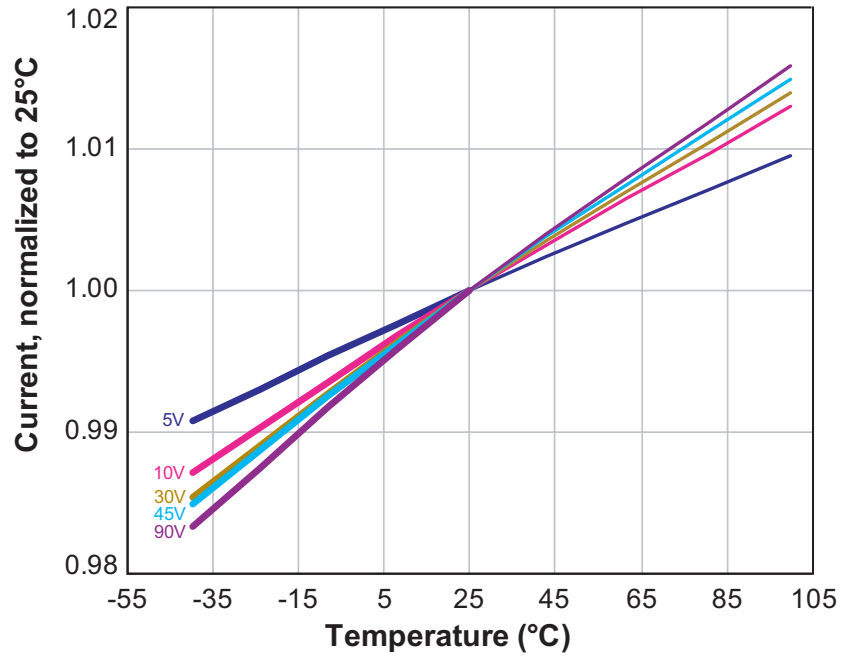
Functional Circuit Diagram



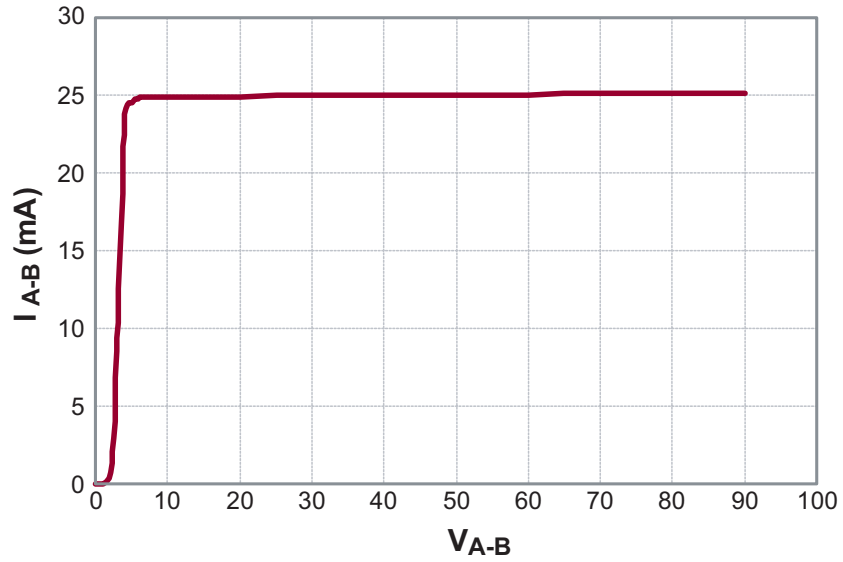
Equivalent Block Diagram



Temperature Characteristics



Output Current vs Voltage



CL25 for Multiple LED Strings



CL25 for Higher Current

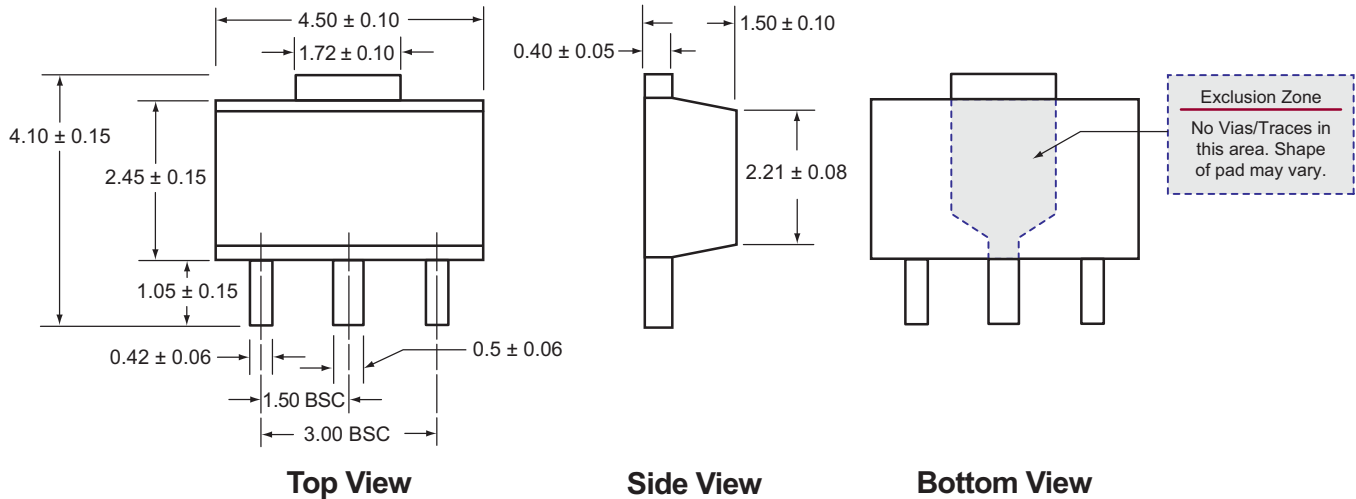


3-Lead TO-92 Package Outline (N3)



Notes:
All dimensions are in millimeters; all angles in degrees.

3-Lead TO-243AA (SOT-89) Package Outline (N8)



Notes:
All dimensions are in millimeters; all angles in degrees.

(The package drawings in this data sheet may not reflect the most current specifications. For the latest package outline information go to <http://www.supertex.com/packaging.html>.)

Supertex inc. does not recommend the use of its products in life support applications, and will not knowingly sell its products for use in such applications, unless it receives an adequate "product liability indemnification insurance agreement". **Supertex** does not assume responsibility for use of devices described and limits its liability to the replacement of the devices determined defective due to workmanship. No responsibility is assumed for possible omissions or inaccuracies. Circuitry and specifications are subject to change without notice. For the latest product specifications, refer to the **Supertex** website: <http://www.supertex.com>.

©2006 **Supertex inc.** All rights reserved. Unauthorized use or reproduction is prohibited.

Supertex inc.

1235 Bordeaux Drive, Sunnyvale, CA 94089
TEL: (408) 222-8888 / FAX: (408) 222-4895

www.supertex.com



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.