

## Product Overview

### NSI45020J: LED Driver, Adjustable Constant Current Regulator, 45 V, 20 mA

For complete documentation, see the data sheet.

The adjustable constant current regulator (CCR) is a simple, economical and robust device designed to provide a cost effective solution for regulating current in LEDs (similar to Constant Current Diode, CCD). The CCR is based on Self-Biased Transistor (SBT) technology and regulates current over a wide voltage range. It is designed with a negative temperature coefficient to protect LEDs from thermal runaway at extreme voltages and currents. The CCR turns on immediately and is at 20% of regulation with only 0.5 V  $V_{AK}$ . The Radj pin allows  $I_{reg}(SS)$  to be adjusted to higher currents by attaching a resistor between Radj (Pin 3) and the Cathode (Pins 2/4). The Radj pin can also be left open (No Connect) if no adjustment is required. It requires no external components allowing it to be designed as a high or low-side regulator. The high anode-cathode voltage rating withstands surges common in Automotive, Industrial and Commercial Signage applications. This device is available in a thermally robust package, which is lead-free RoHS compliant and uses halogen-free molding compound. Meets AEC-Q101 standard and UL94-V0 certified.

#### Features

- Robust Power Package: 1.5 Watts, Adjustable up to 40 mA, Wide Operating Voltage Range, Immediate Turn-On, Voltage Surge Suppressing Protecting LEDs, AEC-Q101 Qualified, SBT (SelfBiased Transistor) Technology, Negative Temperature Coefficient, Eliminates Additional Regulation, These Devices are PbFree, Halogen Free/BFR Free and are RoHS Compliant.
- AEC-Q101 Qualified and PPAP Capable, UL94-V0 Certified

#### Benefits

- High or Low side control

#### Applications

- LED Drive, Battery Charging, Contact Wetting

#### End Products

- Automotive - Cluster & Central Console Backlighting, Navigation/Audio Systems, Vanity Mirror Light, Car Door Puddle Light, Ambience Lighting, CHMSL, Turn Signals, Side Repeaters, Tail Lamps, Brake Lighting, Trailer lights & Contact Wetting. Display & Signage - Channel letters, Display backlighting, Neon bulb replacements, LED stripes & modules. Architectural lighting Decorative, Task, Exterior, Landscape & Under counter. Computing and Industrial Indicator lamps, Backlights

#### Part Electrical Specifications

Product	Compliance	Status	$V_I$ Max (V)	$I_O$ Max (mA)	LEDs in Series, Max #	LEDs in Parallel, Max #	Package Type
NSI45020JZT1G	Pb-free	Active	45	40	80	16	SOT-223-4 / TO-261-4D
	Halide free						
NSV45020JZT1G	AEC Qualified PPAP Capable Pb-free Halide free	Active	45	40	80	16	SOT-223-4 / TO-261-4D

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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