

CAT4026

6-Channel LED Controller with Fault Diagnostics for Large Panel LED Backlighting

Description

The CAT4026 is a high performance, large panel LED controller designed to control six constant current high voltage LED strings. Added control circuitry monitors the lowest cathode voltage and generates a feedback control signal to an external Switch Mode Power Supply (SMPS) to provide a low cost and efficient solution for large panel high voltage LED backlighting.

Each LED channel current is accurately matched and controlled by sensing an external resistor in series with a low cost bipolar power transistor. This allows current and heat dissipation concerns to be mitigated from the CAT4026 device package.

For added system reliability, both Open-Cathode-Anode (OCA) and Shorted-Cathode-Anode (SCA) fault detection circuitry has been included along with independent Fault flag logic outputs for diagnostic purposes.

LED current dimming in all six channels can be precisely controlled by either a Pulse Width Modulation signal via the PWM input pin or by an analog dimming voltage applied at the ANLG pin. In addition the ANLG pin provides a convenient method for limiting the overall maximum power dissipation in the event of excessive LED shorting within any LED string.

The device will automatically enter low current shutdown mode by taking the PWM pin low for an extended length of time.

Features

- 6 Channel LED Controller
- Adaptive Feedback Control to External SMPS for Better Efficiency
- PWM and Analog Mode Dimming
- Short Cathode-Anode (SCA) Fault Protection
- Open Cathode-Anode (OCA) Fault Protection
- Over-Voltage Protection
- Thermal Shutdown Protection
- Automatic Inactivity Power Down Mode
- SOIC-28L Package
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

Typical Applications

- LCD-TV LED Backlighting
- LED General Lighting



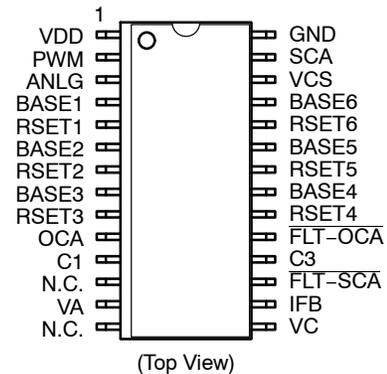
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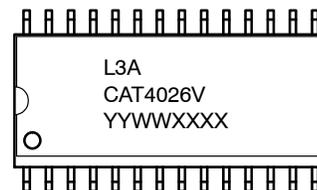


SOIC-28
V SUFFIX
CASE 751BM

PIN CONNECTIONS



MARKING DIAGRAM



- L = Assembly Location Code
- 3 = Mark "3" for (lead finish Matte-Tin)
- A = Product Revision: Fixed as "A"
- CAT4026V = Specific Device Code
- YY = Production Year (Last Two Digits)
- WW = Production Week (Two Digits)
- XXXX = Last Four Digits of Assembly Lot Number

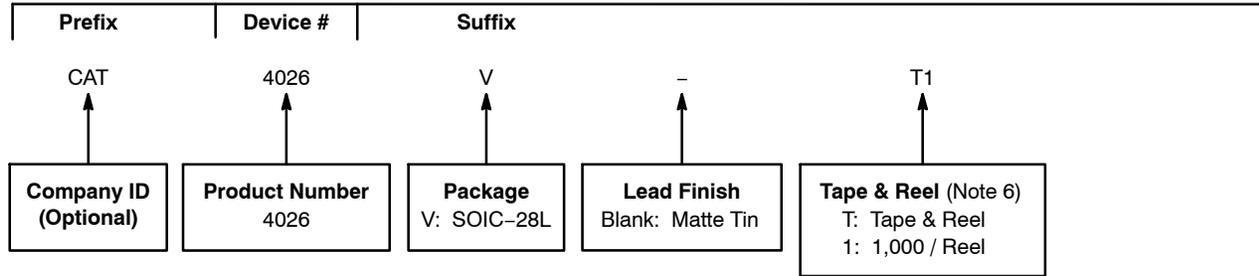
ORDERING INFORMATION

Device	Package	Shipping
CAT4026V-T1 (Note 1)	SOIC-28 (Pb-Free)	1,000/ Tape & Reel

1. Matte Tin Plated Finish (RoHS-compliant)

CAT4026

Example of Ordering Information (Note 4)



2. All packages are RoHS-compliant (Lead-free, Halogen-free).
3. The standard lead finish is Matte Tin.
4. The device used in the above example is a CAT4026V-T1 (SOIC-28L, Matte Tin, Tape & Reel, 1,000/Reel).
5. For additional package and temperature options, please contact your nearest ON Semiconductor Sales office.
6. For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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