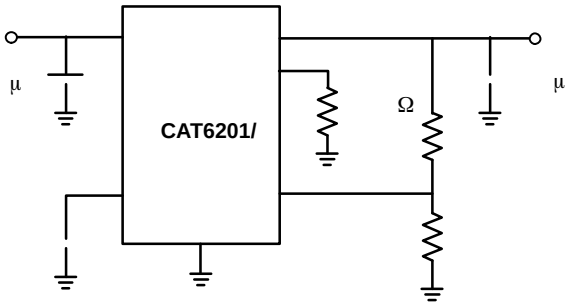

Figure 1. CAT6201/CAV6201B Typical Application

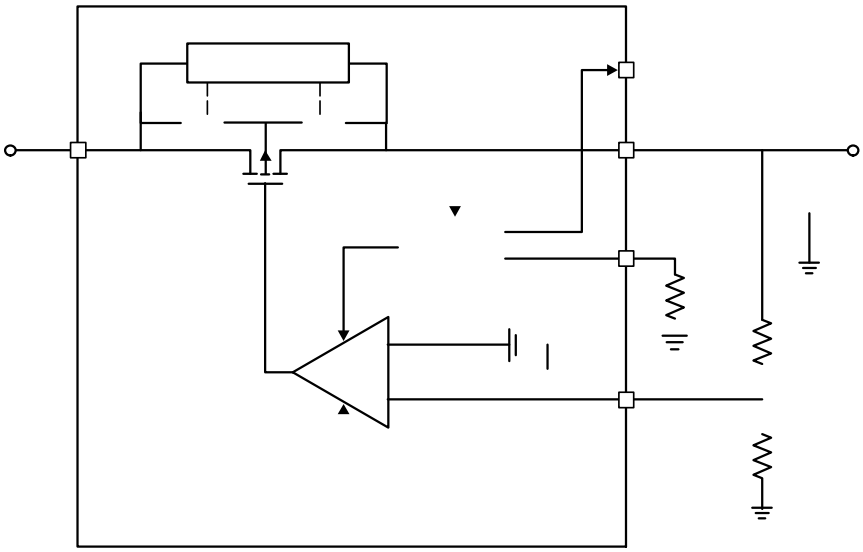

Figure 2. CAT6201/CAV6201B Functional Block Diagram

Table 1. PIN FUNCTION DESCRIPTION

Pin No.	Pin Name	Description

Pin Function

VIN is the supply pin for both the LDO's operation and the load the LDO is driving. It is recommended that a 1 μF ceramic bypass capacitor be placed between the V_{IN} pin and ground in close proximity to the device. When using longer connections to the power supply, C_{IN} value can be increased without limit. The operating input voltage range is from 3.3 V to 13.5 V.

$\overline{\text{FLT}}$ is an active low open drain output indicating one of 3 fault conditions:

1. Input under voltage: input is below the intended output voltage
2. Over current. Brief over current events are masked by a 3 ms time delay. CAT6201/CAV6201B will limit current anytime the load tries to draw more than the maximum allowed, however reporting of this event will occur only if the event lasts longer than the delay timer. Events terminating before the timer reaches its full count are ignored and the timer is reset.
3. Over temperature shutdown has occurred.

EN is an active HIGH logic level input for switching the regulator's output between ON and OFF. A weak internal pull down assures that if EN pin is left open, the circuit is disabled.

BYP controls the soft start feature for the regulator. When large capacitive loads are present at the regulator's output, enabling the regulator will produce large current surges on the V_{IN} supply line. To reduce these surges the regulator can be turned on gently by connecting a capacitor between the BYP pin and ground. The larger the capacitance value the more slowly V_{OUT} approaches its programmed value. The table below gives a list of common capacitor values and their resulting turn on times. If the soft start feature is not desired, this pin should be left floating.

Capacitance [nF]	t_{ON} [ms]

GND is the ground reference for the LDO in the TDFN package, center metal pad is internally connected to GND. If electrical contact is made with this pad, it should be to GND and/or the ground plane of the PCB. Connection to the ground plane enhances thermal conductivity drawing heat out of the package and into the surrounding PCB.

ILIM stands for Current Limit and is the control input for setting the point at which the current limit is invoked. I_{LIM} is defined as the current at which V_{OUT} is still within 80% of its nominal value and should not be confused with I_{SC}, the short circuit current, measured at V_{OUT} = 0 V, which is typically 100 mA greater than I_{LIM}.

A resistor R_{EXT} placed between I_{LIM} and GND selects the trip current according to a formula:

$$= \quad + \frac{\qquad\qquad\qquad\qquad}{}$$

I_{LIM0} is the built ,.und

Table 4. ELECTRICAL CHARACTERISTICS

μ μ Ω ,

Bold numbers

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
			3.3		**13.5**	
			V_{ADJ}		**12.5**	
					2.0	μ

TYPICAL CHARACTERISTICS

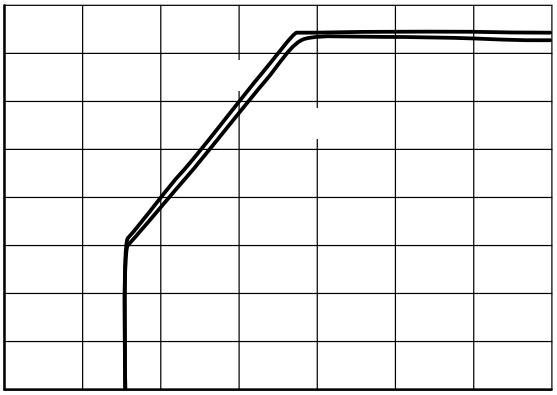

Figure 3. Dropout Characteristics

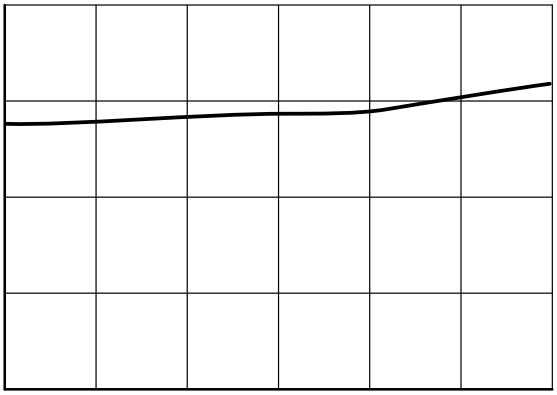

Figure 4. Line Regulation

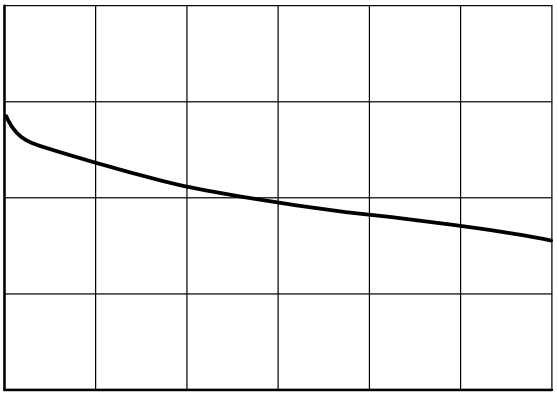

Figure 5. Load Regulation

Figure 6. Adjustable Voltage vs. Temperature

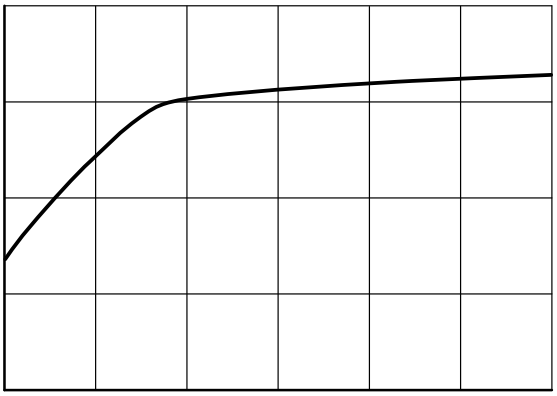

Figure 7. Ground Current vs. Load Current

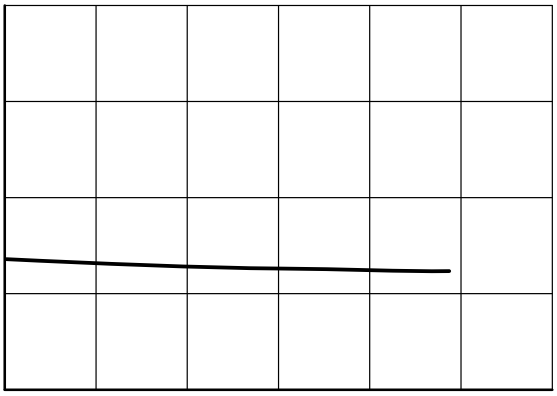

Figure 8. Ground Current vs. Temperature

TYPICAL CHARACTERISTICS

Figure 9. Output Short−circuit Current vs. Input Voltage

Figure 10. Ground Current vs. Input Voltage

Figure 11. Enable Threshold vs. Input Voltage

Figure 12. Fault Bar Voltage vs. Input Voltage

Figure 13. Output Voltage vs. Load Current

Figure 14. Output Current (Sink) vs. Output Voltage

ORDERING INFORMATION

Device Order Number	Specific Device Marking	Package Type	Lead Finish	Shipping

TDFN8, 2x3, 0.5P
CASE 511AK
ISSUE B

SCALE 2:1

DATE 18 MAR 2015

NOTES: