GL34215 SERIES

2A ULTRA LOW - DROPOUT REGULATOR

Description

The GL34215 is a low-dropout linear regulators. These are devices designed specifically for battery-operated systems. Ground current is very small (10uA -Typ), that significantly extends battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 1.1V to 6.0V. The GL34215 consists of a high-precision voltage reference, an error correction circuit, a current limited output driver, temperature protection circuit, short-circuit protection. With good transient responses, output remains stable even during load changes. The EN input enables the output to be turned off, resulting in reduced power consumption. The package are SOP8F, TO-252.

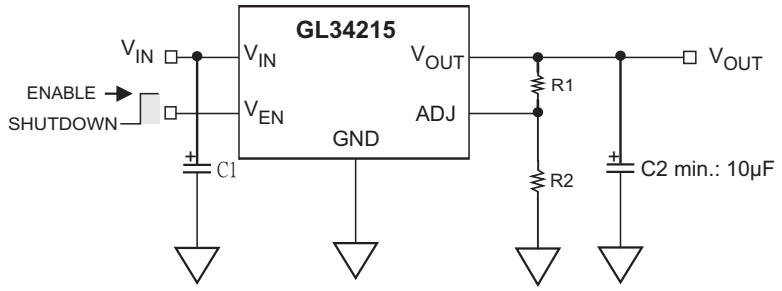
Features

- **Maximum output current: 2A.**
- **Highly accurate: output voltage ±1.5%.**
- **Low power consumption.**
- **On-chip protections: thermal, short circuit.**
- **Small input/output differential: 0.3V at 2A**

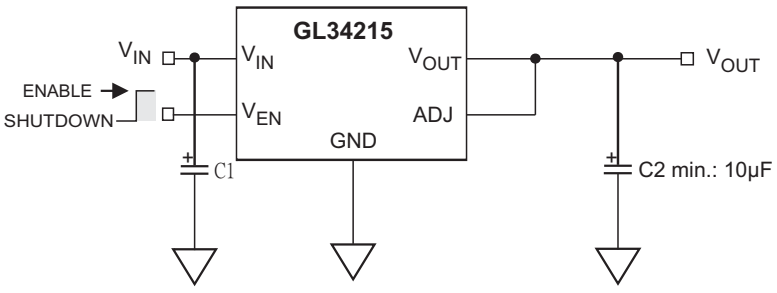
Application

- **Battery-Operated Systems.**
- **Portable Computers.**
- **Portable Cameras and Video Recorders.**
- **Reference Voltage Sources.**
- **Instrumentation.**

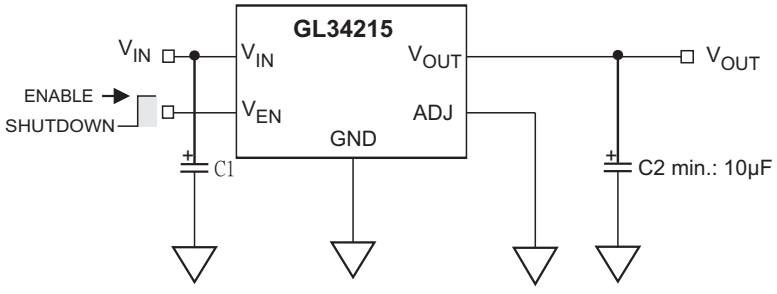
TYPICAL APPLICATION CIRCUITS



Vout= 0.8 * (R1+R2) / R2



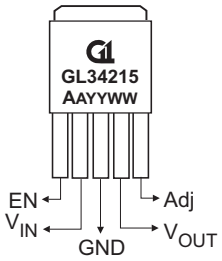
Vout= 0.8 V



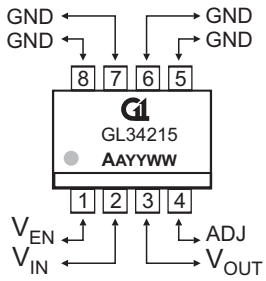
Vout= 2.5 V

◆ MARKING INFORMATION & PIN CONFIGURATIONS (TOP VIEW)

TO-252-5 (DPAK)



SOP- 8



A	= Output Voltage ("A" is Adj version)
A	= Assembly Location
YY	= Year
W W	= Weekly

◆ ORDERING INFORMATION (Green Package Products are available now!)

ORDERING NUMBER	OUTPUT VOLTAGE	PACKAGE	SHIPPING
GL34215-ATC5R	Adj	TO-252-5	2,500 Units/ Tape & Reel
GL34215-ASF8R	Adj	SOP-8F	2,500 Units/ Tape & Reel

* For detail Ordering Number identification, please see last page.

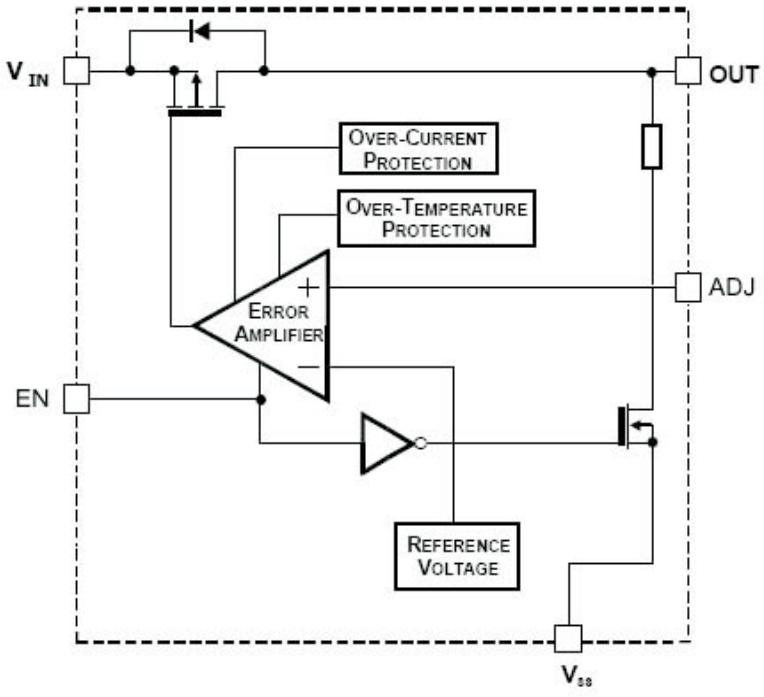
◆ ABSOLUTE MAXIMUM RATINGS

Pin # TC5	Pin # SF8	Symbol	Function
1	1	V_{EN}	Enable Input. Pulling this pin below 0.4V turns the regulator off, reducing the quiescent current to a fraction of its operating value. The device will be enabled if this pin is left open. Connect to Vin if not being used.
2	2	V_{IN}	Input Voltage. For Regulation at full load, the input to this pin must be between (Vout +0.5V) and 5.5V. Minimum Vin=1.6V. A large bulk capacitance should be placed closely to this pin to ensure that the input supply does not sag below 1.6V. Also a minimum of 4.7uF ceramic capacitor should be placed directly at this pin.
3	5~8	GND	Reference ground.
4	3	V_{OUT}	The pin is the power output of the device. A minimum of 10uF ceramic capacitor should be placed directly at this pin.
5	4	ADJ	When this pin is grounded, an internal resistor divider sets the output voltage to 2.5V. If this pin is connected to the Vout pin, the output vlotage will be set at 0.8V. if external feedback resistors are used, the output voltage will be **Vout = 0.8 * (R1 + R2) / R2 Volts**

◆ ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Vin, EN, Vo, ADJ Absolute Voltage	$V_{IN\ Max.}$	6	V
Power Dissipation	P_D	0.9	W
Operating Ambient Temperature Range	T_A	-45 to +85	°C
Operating Junction Temperature Range	T_J	-45 to +150	°C
Storage Temperature Range	T_{STG}	-60 to +150	°C
Lead Temperature (Soldering) 10 Sec.	T_{LEAD}	300	°C
ESD Rating (Human Body Model)	V_{ESD}	2	KV

◆ FUNCTIONAL DIAGRAM



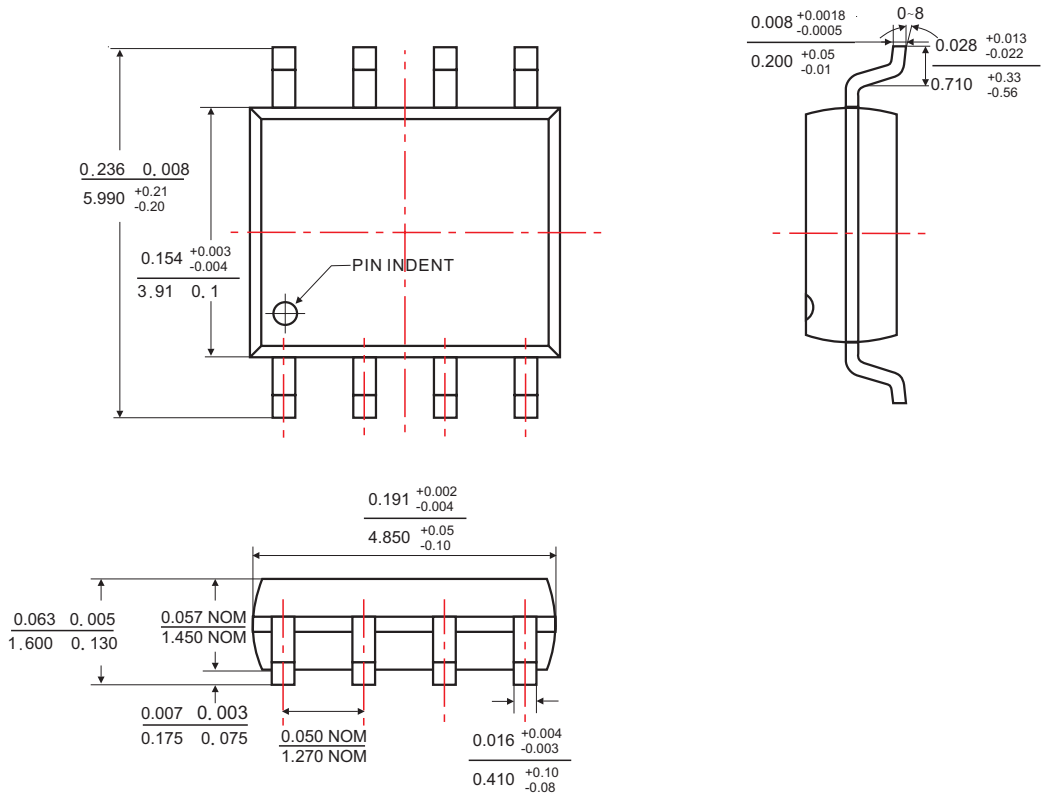
ELECTRICAL CHARACTERISTICS

Unless specified: V_{EN}= V_{IN}. Adjustable Option (V_{ADJ}> $V_{TH(ADJ)}$): V_{IN} =1.6V to 5.5V and I_O = 10uA to 2A.
Fixed Options (V_{ADJ}=GND); V_{IN}= (V_{OUT}+0.5V) to 5.5V and I_O = 10uA to 2A.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
V_{IN}						
Supply Voltage Range	V_{IN}		1.6		5.5	V
Quiescent Current	I_Q	V_{IN} = 3.3V		0.75	1.75	mA
		V_{IN} = 5.5V, V_{EN} = 0V		10	50	uA
V_{OUT}						
Output Voltage	V_{OUT}	V_{IN}= V_{OUT}+0.5V, I_O = 10 mA	-1		1	%
		10mA≦ I_{OUT} ≦ 1A	**-2**		**2**	%
Line Regulation	$REG_{(LINE)}$	I_{OUT} = 10mA, V_{IN}=V_{OUT} +0.5V, V_{IN}< 3.65V		0.2	0.5	%
		I_{OUT} = 10mA, V_{IN}=V_{OUT} +0.5V, V_{IN}> 3.65V		0.5	1.0	%
Load Regulation	$REG_{(LOAD)}$	V_{IN}=V_{OUT} +0.6V, V_{IN}< 3.65V		0.2	0.5	%
		V_{IN}=V_{OUT} +0.6V, V_{IN}> 3.65V		0.5	1.0	%
Dropout Voltage	V_{DROP}	I_{OUT} = 1A		90	300 **400**	mV
		I_{OUT} = 1.5A		200	400	
		I_{OUT} = 2A, V_{IN}=V_{OUT} +0.5V I_{OUT} = 2A, V_{IN}=V_{OUT} +0.6V		300	500 **600**	
Mini. Load Current	$I_{OUT(Mini.)}$	V_{IN}=V_{OUT} +0.5V		1	10	uA
Current Limit	I_{CL}		2.2	3	4.5	A
Adjust						
Reference Voltage	V_{REF}	V_{IN}= 2.2V, V_{ADJ}=V_{OUT}, I_{OUT}=10mA	0.792	0.8	0.808	V
ADJ pin Current	I_{ADJ}	V_{ADJ} = V_{REF}	80		200	μA
ADJ Pin Threshold	$V_{TH(ADJ)}$		0.05	0.16	0.40	V
Enable Input						
Enable Pin Threshold	V_{IL}	V_{IN} = 3.3 V			0.4	V
	V_{IH}	V_{IN} = 3.3 V	1.6			V
Enable Input Current	I_{EN}	V_{EN} = 0 V, V_{IN} = 3.3 V		1.5	10	μA
Over Temperature Protection						
High Trip Level	T_{HI}			160		°C
Hysteresis	T_{HYST}			10		°C

Values in **bold** apply over the full operating temperature range.

SOP-8F PACKAGE OUTLINE DIMENSIONS



(Inches / mm)

ORDERING NUMBER

GL34215 1.8 SF8 R

- GL34215 — Circuit Type
- 1.8 — Output Voltage
- SF8 — Package
  - TC5: TO252-5
  - SF8: SOP-8F
- R — Shipping
  - R: Tape & Reel
  - T: Tube