GL2136

CMOS Positive Voltage Regulator

Description

The GL2136 series of positive, linear regulators feature low quiescent current (30μA typ.) with low dropout voltage, making them ideal for battery applications.
These rugged devices have both Thermal Shutdown, and Current Fold-back to prevent device failure under the "Worst" of operating conditions.
The GL2136 is stable with an output capacitance of 2.2μF or greater.

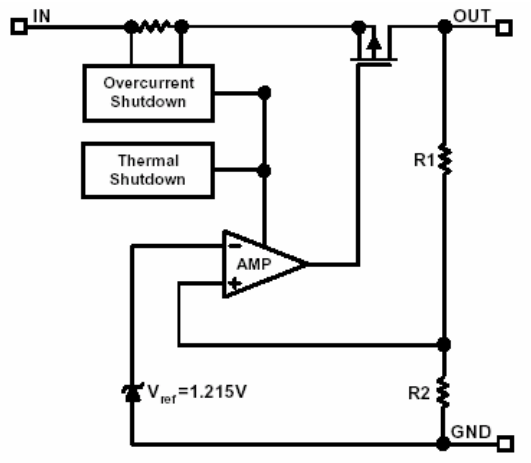
Features

- Very Low Dropout Voltage
- Guaranteed 600mA output
- Over-Temperature Shutdown
- Current Limiting
- Short Circuit Current Fold-back
- Factory Pre-set Output Voltage
- Highly Accurate± 1.5%
- Low Temperature Coefficient

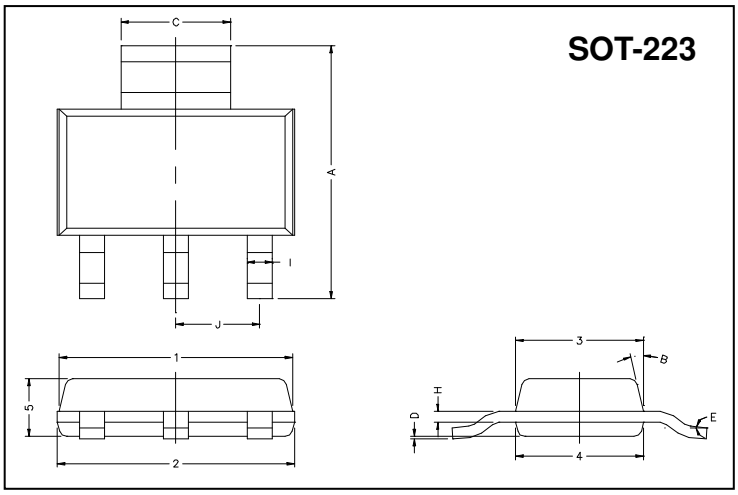
Applications

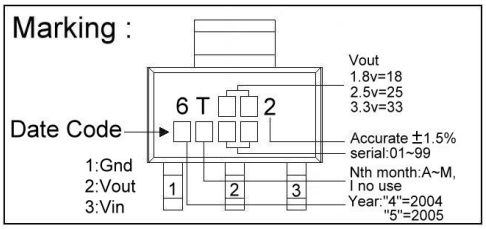
- Battery Powered Widgets
- Instrumentation
- Wireless Devices
- Cordless Phones
- PC Peripherals
- Portable Electronics
- Electronic Scales

Block Diagram



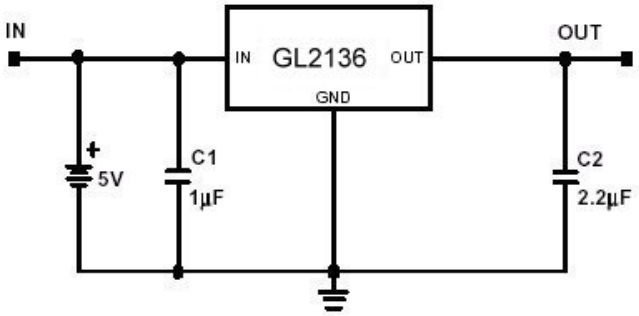
Package Dimensions





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.70	7.30	B	13°TYP.	
C	2.90	3.10	J	2.30 REF.	
D	0.02	0.10	1	6.30	6.70
E	0°	10°	2	6.30	6.70
I	0.60	0.80	3	3.30	3.70
H	0.25	0.35	4	3.30	3.70
			5	1.40	1.80

Typical Application Circuit



Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Input Max Voltage	V_{IN}	8	V
Output Current	I_{OUT}	1	A
Output Voltage	V_{OUT}	1.3~3.8	V
Supply Voltage	V_{IN}	4.5~5.5	V
Operating Ambient Temperature	Topr	-40 ~ +85	℃
Junction Temperature	Tj	-40 ~ +125	℃
Maximum Junction Temperature	$T_{j\,Max}$	150	℃
Thermal Resistance	θjc	15	℃/W
	θja	160	℃/W
Power Dissipation(△T=100℃)	PD	625	mW
EDS Classification		B	

Electrical Characteristics Ta=25℃ unless otherwise noted

Parameter	Symbol	Condition		Min	TYP	Max	Unit
Output Voltage	$V_{OUT}(E)$ (Note1)	$V_{IN}=V_{OUT}(T)+1V$, $I_O=1mA$		-1.5%	$V_{OUT}(T)$ (Note2)	1.5%	V
Output Current	I_O	$V_{IN}=V_{OUT}(T)+2V$, $V_{OUT}\geqq V_{OUT}(E)*0.96$		600	-	-	mA
Current Limit	I_{LIM}	$V_O>1.2V$		600	800	-	mA
Load Regulation	REG_{LOAD}	$V_{IN}=V_{OUT}(T)+2V$, $I_O=1mA$ to 600mA		-	0.2	1	%
Dropout Voltage	$V_{DROPOUT}$	$I_O=600mA$ $V_O=V_{OUT}(E)$-2%	1.3V≦$V_{OUT}(T)$≦1.4V	-	-	1900	mV
			1.4V<$V_{OUT}(T)$≦2.0V	-	-	1400	
			2.0V<$V_{OUT}(T)$≦2.8V	-	-	800	
			2.8V<$V_{OUT}(T)$	-	-	600	
Quiescent Current	I_Q	V_{IN}= $V_{OUT}(T)+1V$, $I_O=0mA$		-	30	50	μA
Line Regulation	REG_{LINE}	$I_O=1mA$ $V_{IN}=V_{OUT}(T)+1$ to $V_{OUT}(T)+2$	1.3V≦$V_{OUT}(T)$≦1.4V	-0.2	-	0.2	%
			1.4V<$V_{OUT}(T)$≦2.0V	-0.15	-	0.15	
			2.0V<$V_{OUT}(T)$<4.0V	-0.1	0.02	0.1	
			4.0V≦$V_{OUT}(T)$	-0.4	0.2	0.4	
Input Voltage	VIN			Note3	-	7	V
Over Temperature Shutdown	OTS			-	150	-	℃
Over Temperature Hysterisis	OTH			-	30	-	℃
Output Voltage Temperature Coefficient	TC			-	30	-	ppm/℃
Short Circuit Current(Note4)	I_{SC}	$V_{IN}=V_{OUT}(T)+1V$, $V_{OUT}<0.8V$		-	300	600	mA
Power Supply Rejection	PSRR	Io=100mA Co=2.2μF	f=100Hz	-	60	-	dB
			f=1kHz	-	50	-	
			f=10kHz	-	20	-	
Output Voltage Noise	eN	f=10Hz~100kHz Io=10mA, C_{BYP}=0μF	Co=2.2μF	-	30	-	μVrms

Note 1: V_{OUT} (E) =Effective Output Voltage (i.e. the output voltage when "V_{OUT} (T) + 1.0V" is provided at the VIN pin while maintaining a certain I_{OUT} value).

2: V_{OUT} (T) =Specified Output Voltage

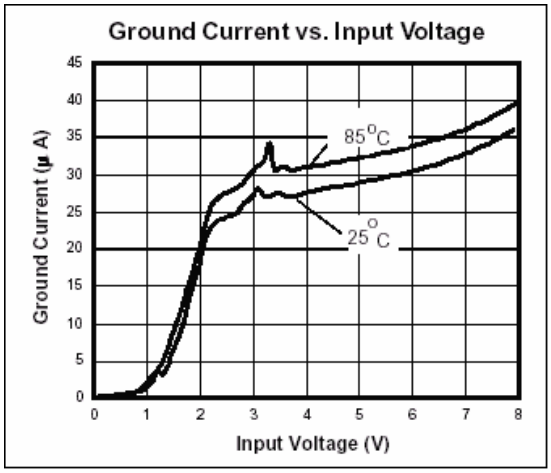
3: $V_{IN\,(MIN)}$ =V_{OUT}+$V_{DROPOUT}$

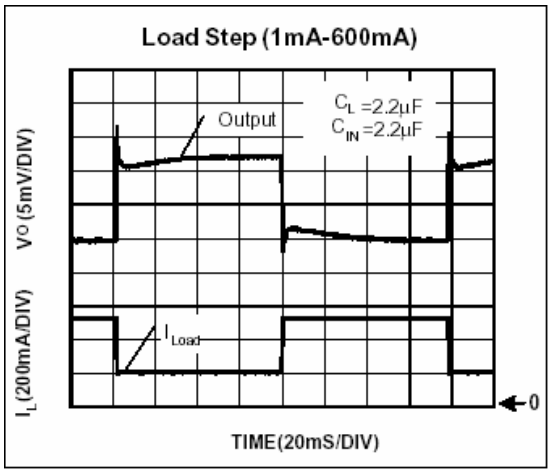
4: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.

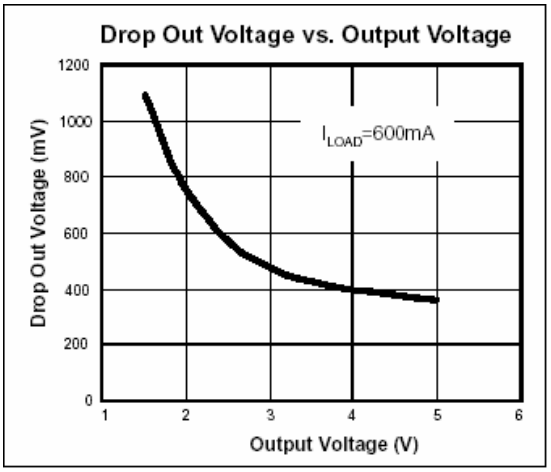
Ordering Information (contd.)

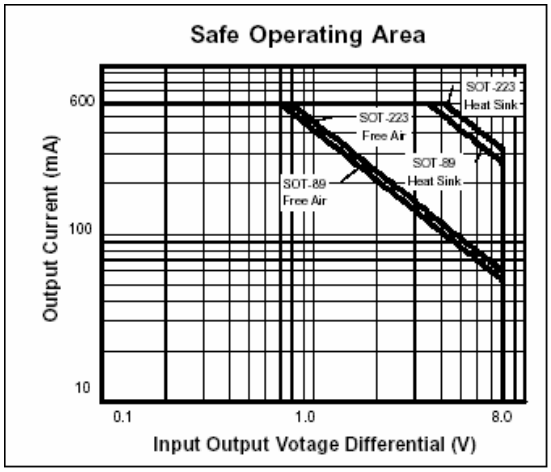
Part Number	Marking	Output Voltage	Part Number	Marking	Output Voltage
GL2136-13	6T132 XXXX	1.3V	GL2136-15	6T152 XXXX	1.5V
GL2136-18	6T182 XXXX	1.8V	GL2136-25	6T252 XXXX	2.5V
GL2136-27	6T272 XXXX	2.7V	GL2136-28	6T282 XXXX	2.8V
GL2136-29	6T292 XXXX	2.9V	GL2136-30	6T302 XXXX	3.0V
GL2136-31	6T312 XXXX	3.1V	GL2136-33	6T332 XXXX	3.3V
GL2136-34	6T342 XXXX	3.4V	GL2136-35	6T352 XXXX	3.5V
GL2136-36	6T362 XXXX	3.6V	GL2136-37	6T372 XXXX	3.7V
GL2136-38	6T382 XXXX	3.8V			

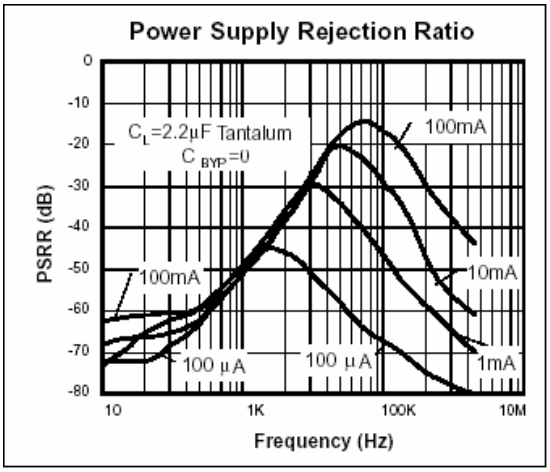
Characteristics Curve

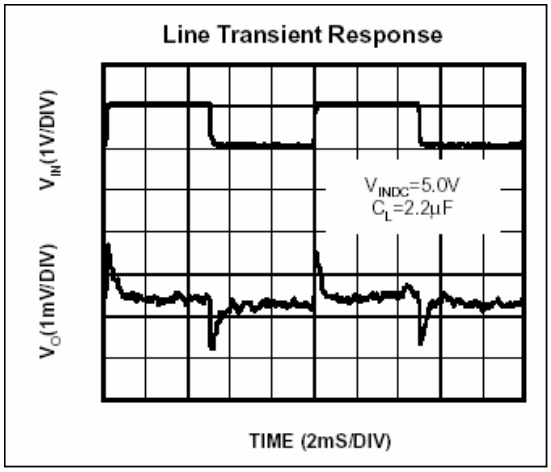


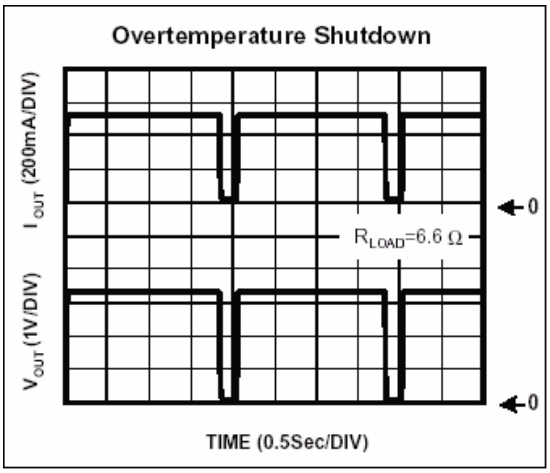


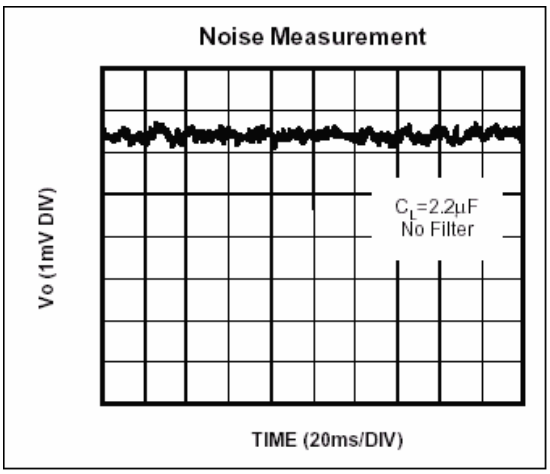


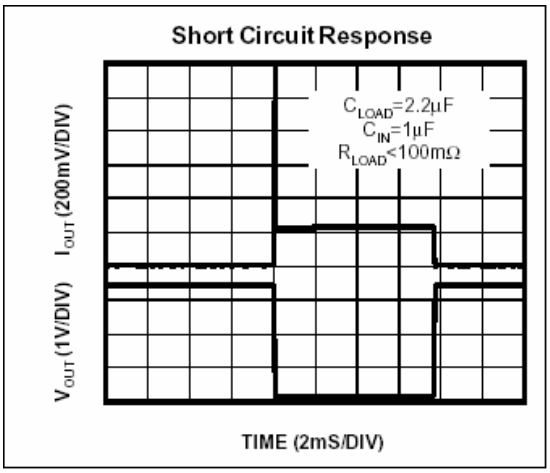


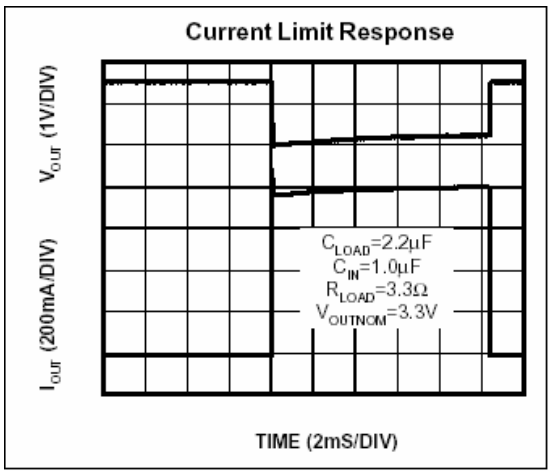












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