



Description

The GL6150 series is a low-dropout linear regulators. There are devices designed specifically for battery-operated systems. Ground current is very small (2uA-Typ.), That significantly extending battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 1.5V to 6.0V. The GL6150 consists of a high precision voltage reference, an error correction circuit, and a current limited output driver. With good transient responses, output remains stable even during load changes. The SHDN input enables the output to be turned off, resulting in reduced power consumption. Also the GL6150 having high ripple rejection ratios, the series can be used with power supply noise. A 470pF capacitor from the bypass input to ground reduces noise present on the internal reference, which in turn significantly reduces output noise. If output noise isn't a concern, this input may be left unconnected. Larger capacitor values can be used, but results in a longer time period to rated output voltage when power is initially applied. The GL6150 incorporates both OTP & OCP.

Features

- ◆ Maximum output current 150mA
- ◆ Output voltage 1.5V to 6.0V
- ◆ Output voltage $\pm 1.4\%$
- ◆ CMOS Low power consumption
- ◆ Ultra-low dropout voltage (typ. 0.165V at 150mA)
- ◆ SOT-25 (250mW) packages

Application

PDA's

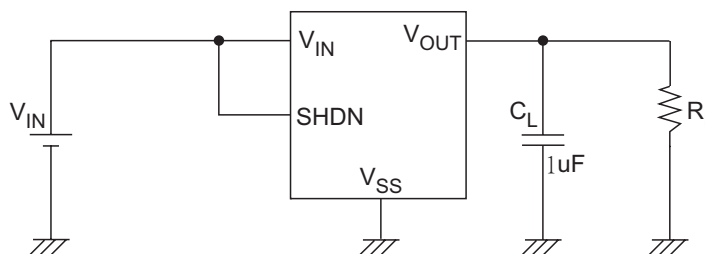
Cameras and camcorders

VCR's

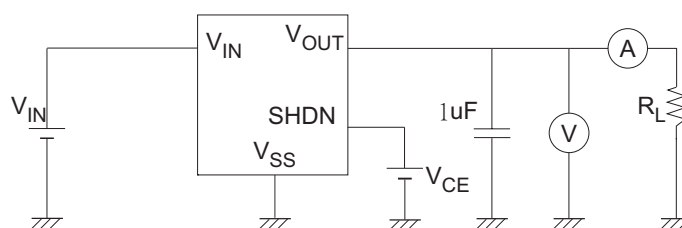
Battery Powered Equipment

Voltage Supply for Cellular Phones

STANDARD CIRCUIT



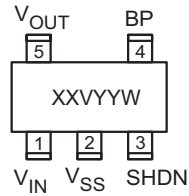
TYPICAL APPLICATION CIRCUITS





◆ MARKING INFORMATION & PIN CONFIGURATIONS (TOP VIEW)

SOT-25 (SOT-23-5)



XX = Marking Code (CA = GL6150)
V = Voltage Code
YY = Year
W = Weekly

◆ ORDERING INFORMATION

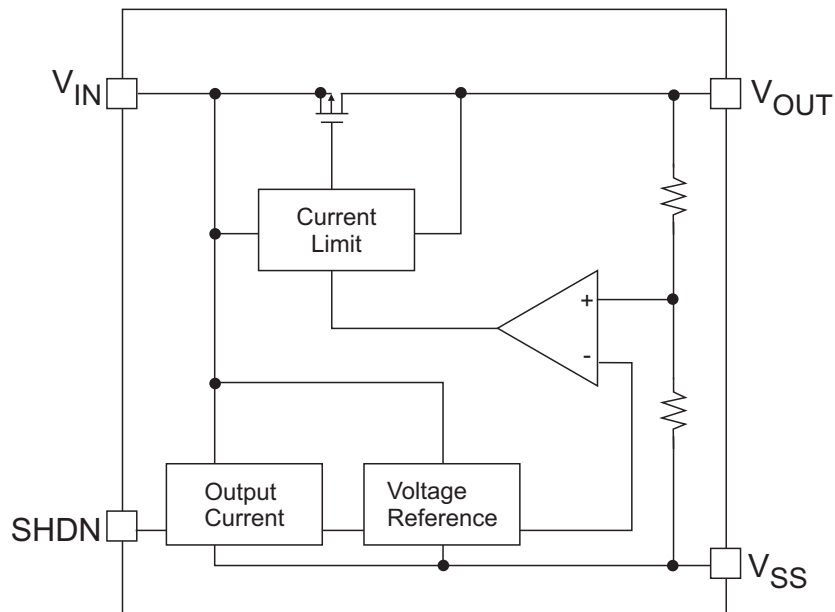
Ordering Number	Output Voltage	Voltage Code	Package	Shipping
GL6150-1.8ST25R	1.8	E	SOT-25	3,000 Units/ Tape & Reel
GL6150-2.4ST25R	2.4	Z	SOT-25	3,000 Units/ Tape & Reel
GL6150-2.5ST25R	2.5	G	SOT-25	3,000 Units/ Tape & Reel
GL6150-2.8ST25R	2.8	H	SOT-25	3,000 Units/ Tape & Reel
GL6150-3.0ST25R	3.0	J	SOT-25	3,000 Units/ Tape & Reel
GL6150-3.3ST25R	3.3	K	SOT-25	3,000 Units/ Tape & Reel
GL6150-4.0ST25R	4.0	M	SOT-25	3,000 Units/ Tape & Reel
GL6150-5.0ST25R	5.0	Q	SOT-25	3,000 Units/ Tape & Reel
GL6150-6.0ST25R	6.0	P	SOT-25	3,000 Units/ Tape & Reel

* For detail ordering number identification, please see last page.

◆ PIN DESCRIPTION

Pin Name	Pin Name	Function
SOT-25		
1	V _{SS}	Ground
2	V _{IN}	Supply Voltage Input
3	SHDN	Chip Shutdown
4	BP	By pass
5	V _{OUT}	Regulated Voltage Output

◆ BLOCK DIAGRAM



◆ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		V_{IN}	6.5	V
Output Current		I_{OUT}	150	mA
SHDN Input Voltage		V_{SHDN}	$V_{SS} - 0.3 \sim V_{IN} + 0.3$	V
Output Voltage		V_{OUT}	$V_{SS} - 0.3 \sim V_{IN} + 0.3$	V
Continuous Total Power Dissipation	SOT-25	P_D	250	mW
Operating Ambient Temperature		T_{OPR}	$-30 \sim +80$	°C
Storage Temperature		T_{STG}	$-40 \sim +125$	°C



150mA ULTRA - LOW DROPOUT POSITIVE VOLTAGE REGULATOR

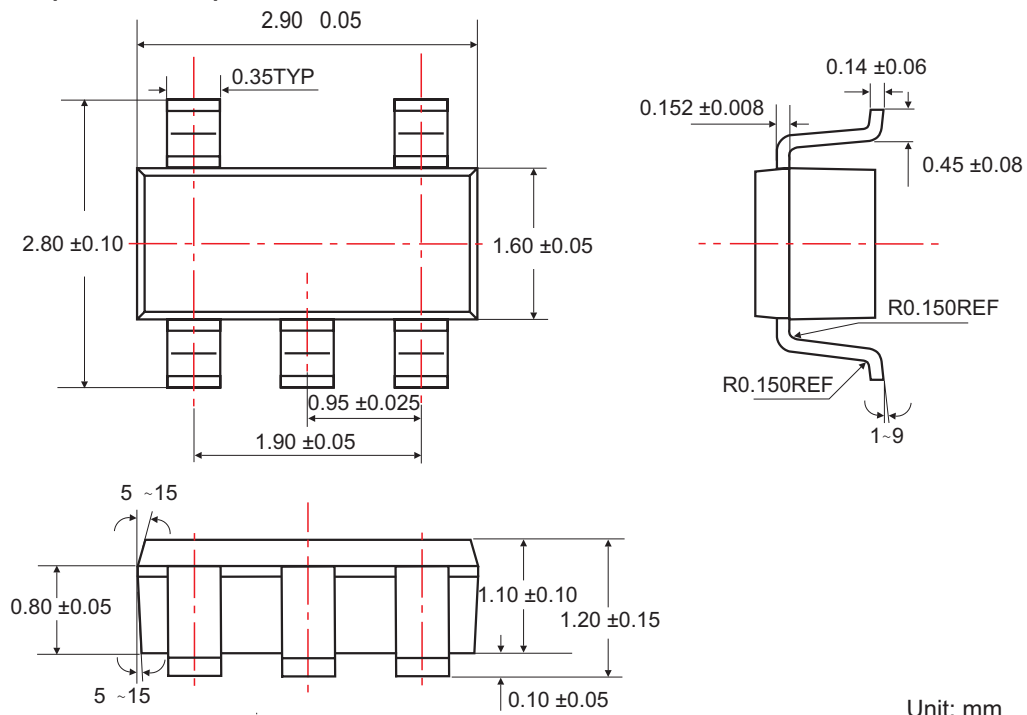
◆ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, V_{out} (nominal) + 0.5V, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Output Voltage Accuracy	V_{OUT}	$I_{\text{OUT}} = 1\text{mA}$, $I_{\text{OUT}} = 1\text{mA to } 150\text{mA}$	-1.4% -3 %		+1.4% +3%	%
Maximum Output Current	$I_{\text{OUT max}}$	$V_{\text{OUT}} > 0.96V_{\text{rating}}$	150			MA
Load Regulation	ΔV_{OUT}	$1\text{mA} \leq I_{\text{OUT}} \leq 120\text{mA}$, $C_{\text{out}} = 1\mu\text{F}$		0.0.1	0.05	%/mA
Line Regulation (Note1)	$\frac{\Delta V_{\text{OUT}}}{\Delta V_{\text{IN}} - \Delta V_{\text{OUT}}}$	$I_{\text{OUT}} = 1\text{mA}$, $(V_{\text{out}} + 0.1) < V_{\text{in}} < 6.5$		0.15	0.35	%/ V
Dropout Voltage for $V_{\text{out}} > 2.5\text{V}$ for $2.0\text{V} < V_{\text{out}} \leq 2.5\text{V}$ for $V_{\text{out}} \leq 2.0\text{V}$	V_{dorp}	$I_{\text{OUT}} = 150\text{mA}$		165	250	mV
	V_{dorp}	$I_{\text{OUT}} = 150\text{mA}$		220	350	mV
	V_{dorp}	$I_{\text{OUT}} = 150\text{mA}$		330	500	mV
Current Limit			160	500		mA
Power Supply Ripple Rejection Ratio	PSRR	$f = 1\text{KHz}$, $I_L = 1\text{mA}$, $C_{\text{BP}} = 470\text{pF}$		75		dB
Shutdown Exit Delay	V_{IN}	$C_{\text{BP}} = 0\mu\text{F}$, $C_{\text{OUT}} = 1\mu\text{F}$, $I_{\text{o}} = 100\text{mA}$		600		u sec
Shutdown Input Bias Current	I_{SDH}	$V_{\text{SHDN}} = V_{\text{IN}}$			100	nA
Shutdown Supply Current	I_{SDL}	$V_{\text{SHDN}} = \text{Gnd}$		0.01	1	uA
Shutdown Input Threshold Low	V_{SDL}	$V_{\text{IN}} = 2.5 \text{ to } 5.5\text{V}$			0.4	V
Shutdown Input Threshold High	V_{SDH}	$V_{\text{IN}} = 2.5 \text{ to } 5.5\text{V}$	2			V
Ground Pin Current	I_{CEL}	$I_{\text{out}} = 0\text{mA} \dots 150\text{mA}$		2	5	uA

Note:

1. Load Regulation is measured using pulse techniques with duty cycle <5%

◆ SOT-25(SOT-23-5) PACKAGE OUTLINE DIMENSIONS



◆ ORDERING NUMBER

GL6150 1.8 ST25 R

Circuit Type

Output Voltage

Shipping
R: Tape & Reel

Package
ST25: SOT-25