

300mA Low Dropout Linear Regulator

FEATURES

- Low dropout voltage of 470mV at an output current of 300mA (3.0V output version).
- Guaranteed 300mA output current.
- Low ground current of 55 μ A
- Output voltage accuracy of 2% at 1.8V/ 2.0V /2.5V /2.7V/ 3.0V/ 3.3V/ 3.5V/ 3.7V/ 3.8V/ 5.0V/5.2V
- Only needs 1 μ F output capacitor for stability.
- Current and thermal limiting.

 **Pb-free lead finish (second-level interconnect).**

APPLICATIONS

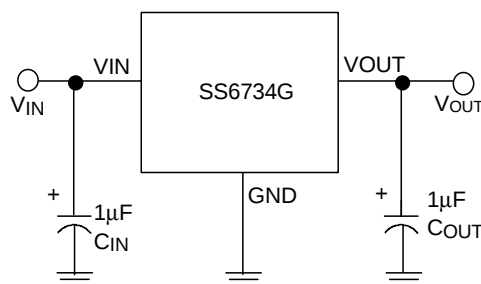
- CD-ROM Drivers.
- LAN Cards.
- Microprocessors.
- DRAM Modules.
- Wireless Communication Systems.
- Battery Powered Systems.

DESCRIPTION

The SS6734G is a 3-pin low-dropout linear regulator with superior characteristics, which include zero base current loss, very low drop-out voltage, and output voltage accuracy of 2%. Typical ground current remains approximately 55 μ A, for loads ranging from zero to maximum. Dropout voltage at an output current of 300mA is exceptionally low. Built-in output current limiting and thermal limiting provide maximum protection against fault conditions.

The SS6734G is available in SOT-23-3, SOT-89, and TO-92 packages.

TYPICAL APPLICATION CIRCUIT



Low Dropout Linear Regulator
(C_{IN} and C_{OUT} are electrolytic capacitor)

ORDERING INFORMATION

SS6734-XXGXX XX

Packing:
TR: Tape and reel

Package type:
U: SOT-23-3
XA: SOT-89
XT: SOT-89
ZT: TO-92
ZL: TO-92

G: Commercial, Pb-free lead finish

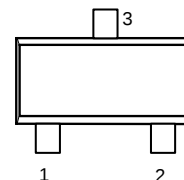
Output voltage:
18: 1.8V
20: 2.0V
25: 2.5V
27: 2.7V
30: 3.0V
33: 3.3V
35: 3.5V
37: 3.7V
38: 3.8V
50: 5.0V
52: 5.2V

Example: SS6734-18GXATR
→ 1.8V version, in SOT-89 package,
with Pb-free lead finish, shipped
on tape and reel.

PIN CONFIGURATION

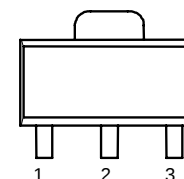
SOT-23 (GU)

1: GND
2: VOUT
3: VIN



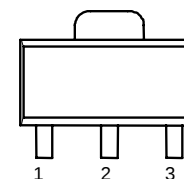
SOT-89 (GXA)
TOP VIEW

1: GND
2: VIN
3: VOUT



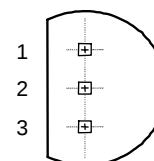
SOT-89 (GXT)
TOP VIEW

1: VOUT
2: GND
3: VIN



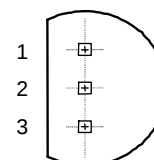
TO-92 (GZT)
TOP VIEW

1: GND
2: VIN
3: VOUT



TO-92 (GZL)
TOP VIEW

1: VIN
2: GND
3: VOUT



SOT-23 MARKING

Part No.	GU	Part No.	GU
SS6734-18GU	CD18P	SS6734-35GU	CD35P
SS6734-20GU	CD20P	SS6734-37GU	CD37P
SS6734-25GU	CD25P	SS6734-38GU	CD38P
SS6734-27GU	CD27P	SS6734-50GU	CD50P
SS6734-30GU	CD30P	SS6734-52GU	CD52P
SS6734-33GU	CD33P		

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, $C_{IN}=1\mu\text{F}$, $C_{OUT}=1\mu\text{F}$, unless otherwise specified.) (Note1)

PARAMETER	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	No Load				V
	SS6734-52 $V_{IN}=5.5\sim 12\text{V}$	5.100	5.200	5.300	
	SS6734-50 $V_{IN}=5.5\sim 12\text{V}$	4.900	5.000	5.100	
	SS6734-38 $V_{IN}=4.1\sim 12\text{V}$	3.725	3.800	3.875	
	SS6734-37 $V_{IN}=4.0\sim 12\text{V}$	3.625	3.700	3.775	
	SS6734-35 $V_{IN}=4.0\sim 12\text{V}$	3.430	3.500	3.570	
	SS6734-33 $V_{IN}=4.0\sim 12\text{V}$	3.235	3.300	3.365	
	SS6734-30 $V_{IN}=4.0\sim 12\text{V}$	2.940	3.000	3.060	
	SS6734-27 $V_{IN}=4.0\sim 12\text{V}$	2.646	2.700	2.754	
	SS6734-25 $V_{IN}=4.0\sim 12\text{V}$	2.450	2.500	2.550	
	SS6734-20 $V_{IN}=4.0\sim 12\text{V}$	1.960	2.000	2.040	
	SS6734-18 $V_{IN}=4.0\sim 12\text{V}$	1.764	1.800	1.836	
Output Voltage Temperature Coefficient	(Note 2)		50		PPM/ $^{\circ}\text{C}$
Line Regulation	$I_L=1\text{mA}$, $1.4\text{V}\leq V_{OUT}\leq 3.2\text{V}$ $V_{IN}=4\text{V}\sim 12\text{V}$		3	10	mV
	$3.3\text{V}\leq V_{OUT}\leq 5.2\text{V}$ $V_{IN}=5.5\text{V}\sim 12\text{V}$		3	10	
Load Regulation (Note 3)	$I_L=0.1\sim 300\text{mA}$ $1.4\text{V}\leq V_{OUT}\leq 3.9\text{V}$ $V_{IN}=5\text{V}$		7	20	mV
	$4.0\text{V}\leq V_{OUT}\leq 5.2\text{V}$ $V_{IN}=7\text{V}$		15	40	
Current Limit (Note 4)	$V_{IN}=7\text{V}$, $V_{OUT}=0\text{V}$	300			mA
Dropout Voltage (Note 5)	$I_L=300\text{mA}$ $4.0\text{V}\leq V_{OUT}\leq 5.2\text{V}$		400		mV
	$3.0\text{V}\leq V_{OUT}\leq 3.9\text{V}$		470		
	$2.5\text{V}\leq V_{OUT}\leq 2.9\text{V}$		570		
	$2.0\text{V}\leq V_{OUT}\leq 2.4\text{V}$		800		
	$1.4\text{V}\leq V_{OUT}\leq 1.9\text{V}$		1260		
Ground Current	$I_O=0.1\text{mA}\sim I_{MAX}$ $1.4\text{V}\leq V_{OUT}\leq 3.9\text{V}$ $V_{IN}=5\sim 12\text{V}$		55	80	μA
	$4.0\text{V}\leq V_{OUT}\leq 5.2\text{V}$ $V_{IN}=7\sim 12\text{V}$		55	80	

Note 1: Specifications are guaranteed by Statistical Quality Control (SQC), not by 100% production testing, over the operating temperature range from -40°C to 85°C .

Note 2: Guaranteed by design.

Note 3: Regulation is measured at constant junction temperature, using pulse testing with a low ON time.

Note 4: Current limit is measured by pulsing a short time.

Note 5: Dropout voltage is defined as the input to output differential at which the output voltage drops 100mV.

TYPICAL PERFORMANCE CHARACTERISTICS

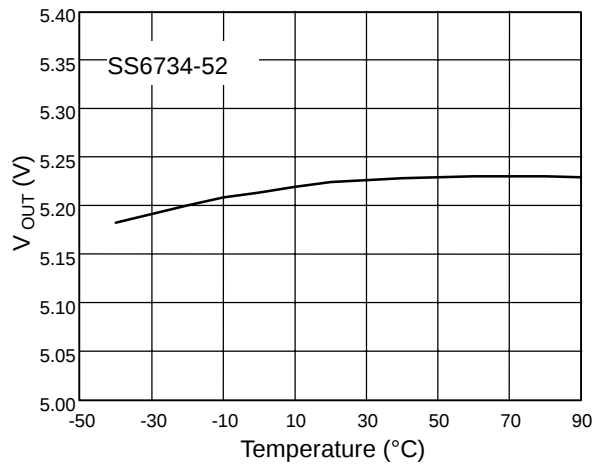


Fig. 1 V_{OUT} vs. Temperature

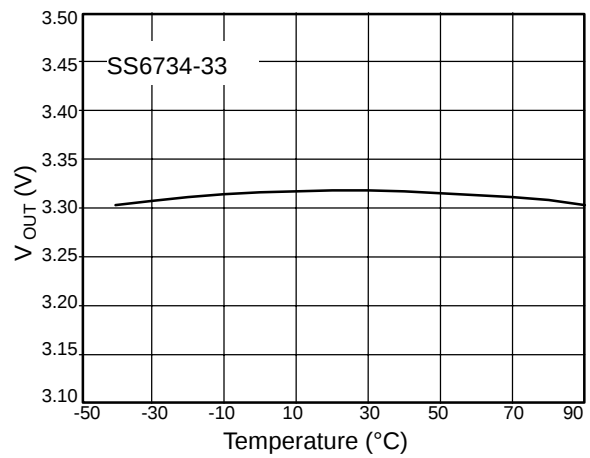


Fig. 2 V_{OUT} vs. Temperature

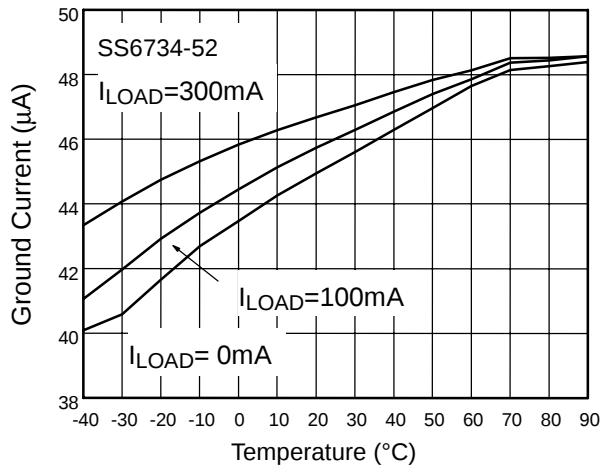


Fig. 3 Ground Current vs. Temperature

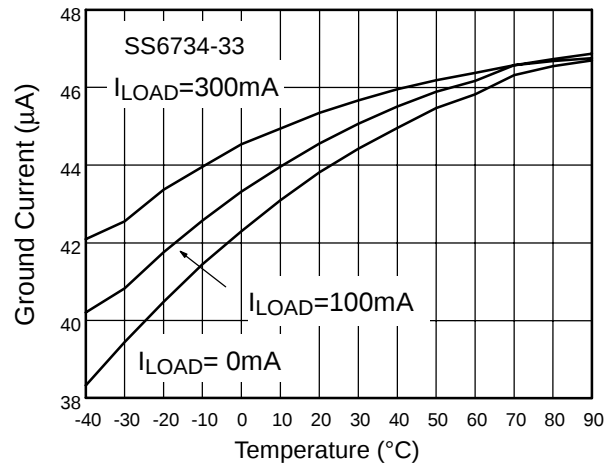


Fig. 4 Ground Current vs. Temperature

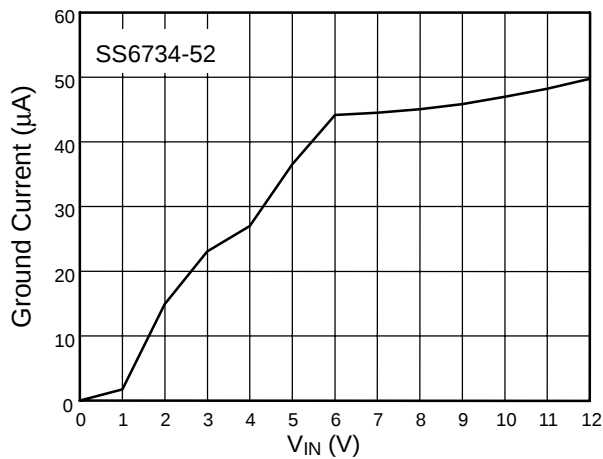


Fig. 5 Ground Current vs. V_{IN}

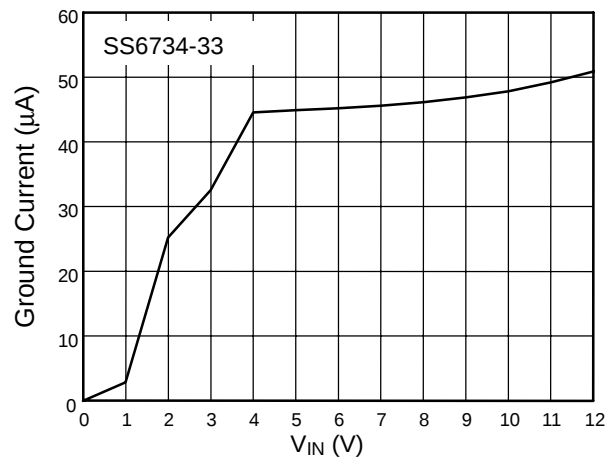


Fig. 6 Ground Current vs. V_{IN}

TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

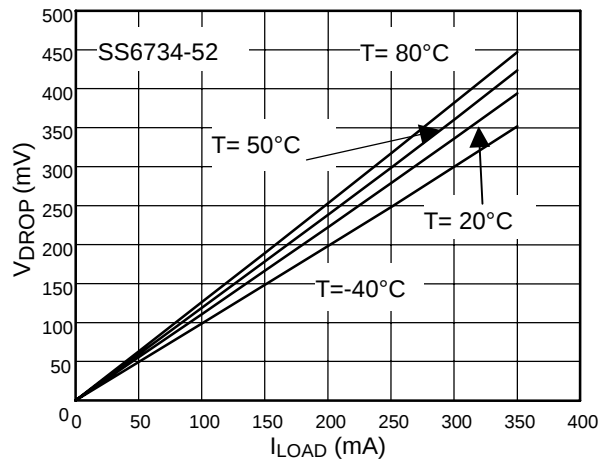


Fig. 7 V_{DROP} vs. I_{LOAD}

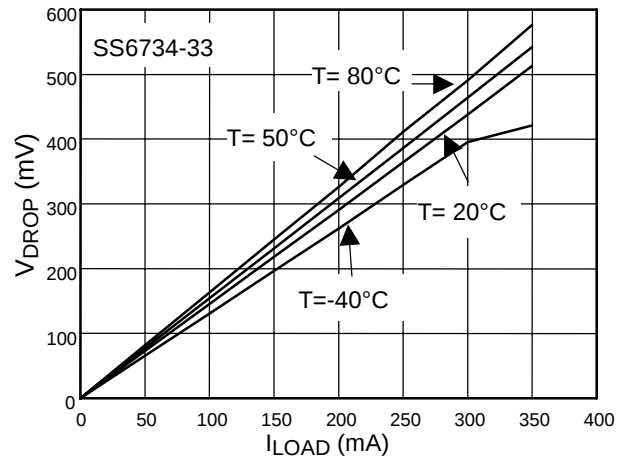


Fig. 8 V_{DROP} vs. I_{LOAD}

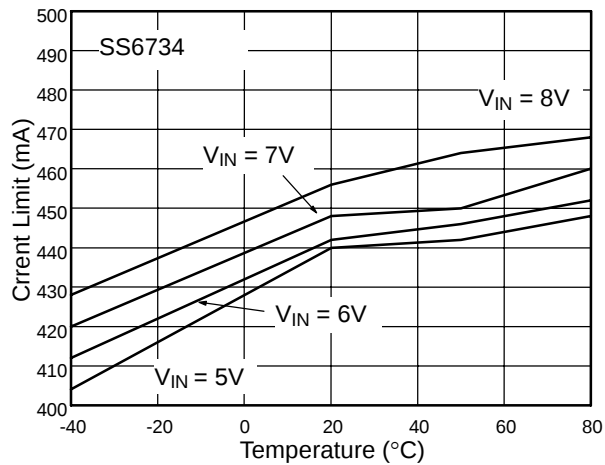
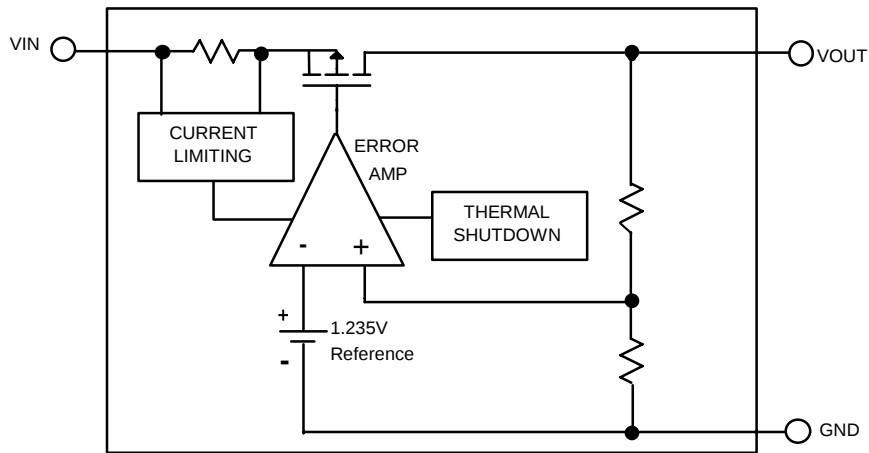


Fig. 9 Current Limit vs. Temperature

BLOCK DIAGRAM



PIN DESCRIPTIONS

VOUT PIN - Output pin.

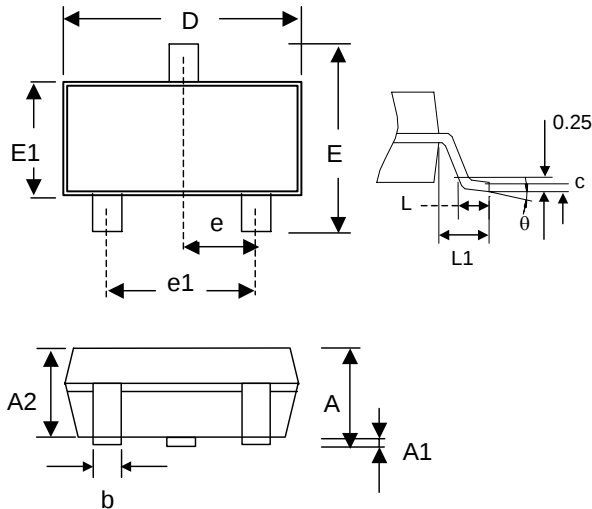
GND PIN - Power GND.

VIN PIN - Power Supply Input.

PHYSICAL DIMENSIONS (unit: mm)

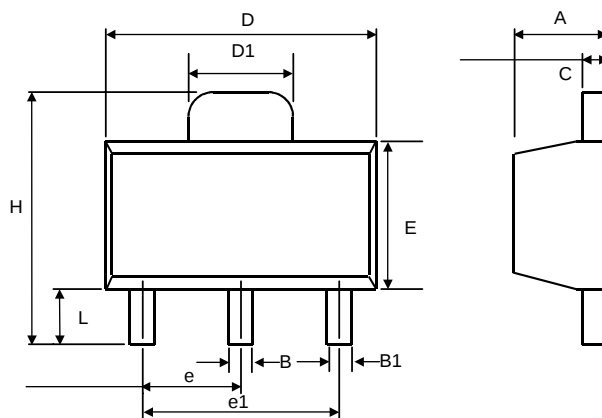
 Pb-free lead finish (second-level interconnect).

SOT-23 (GU)



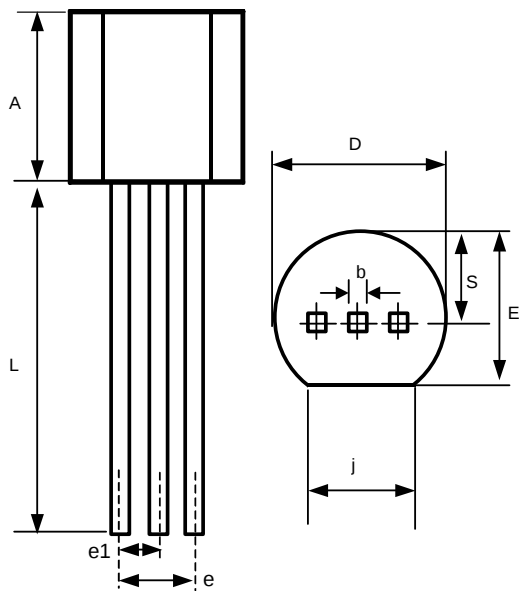
SYMBOL	MIN	MAX
A	0.95	1.45
A1	0.05	0.15
A2	0.90	1.30
b	0.30	0.50
c	0.08	0.22
D	2.80	3.00
E	2.60	3.00
E1	1.50	1.70
e	0.95 BSC	
e1	1.90 BSC	
L	0.30	0.60
L1	0.60 REF	
θ	0°	8°

SOT-89 (GXX)



SYMBOL	MIN	MAX
A	1.40	1.60
B	0.44	0.56
B1	0.36	0.48
C	0.35	0.44
D	4.40	4.60
D1	1.50	1.83
E	2.29	2.60
e	1.50 BSC	
e1	3.00 BSC	
H	3.94	4.25
L	0.89	1.20

TO-92 (GZX)



SYMBOL	MIN	MAX
A	4.32	5.33
b	0.36	0.47
D	4.45	5.20
E	3.18	4.19
e	2.42	2.66
e1	1.15	1.39
j	3.43	-
L	12.70	-
S	2.03	2.66

Information furnished by Silicon Standard Corporation is believed to be accurate and reliable. However, Silicon Standard Corporation makes no guarantee or warranty, express or implied, as to the reliability, accuracy, timeliness or completeness of such information and assumes no responsibility for its use, or for infringement of any patent or other intellectual property rights of third parties that may result from its use. Silicon Standard reserves the right to make changes as it deems necessary to any products described herein for any reason, including without limitation enhancement in reliability, functionality or design. No license is granted, whether expressly or by implication, in relation to the use of any products described herein or to the use of any information provided herein, under any patent or other intellectual property rights of Silicon Standard Corporation or any third parties.