DESCRIPTION

The A6151A series is a set of three-terminal middle current low voltage regulator implemented in CMOS technology. They can deliver 100mA output current and allow an input voltage as high as 18V. They are available with several fixed output voltages 3.0, 3.3, 3.6, 4.0 and 5.0V.

CMOS technology ensures low voltage drop and low quiescent current.

A6151A is available in SOT89-3 package.

ORDERING INFORMATION

Package Type	Part Number	
SOT89-3 SPQ: 1,000pcs/Reel	K3	A6151AK3R-30
		A6151AK3VR-30
		A6151AK3R-33
		A6151AK3VR-33
		A6151AK3R-36
		A6151AK3VR-36
		A6151AK3R-40
		A6151AK3VR-40
		A6151AK3R-50
		A6151AK3VR-50
Note	Output Voltage: 30=3.0V, 33=3.3V, 36=3.6V, 40=4.0V, 50=5.0V V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

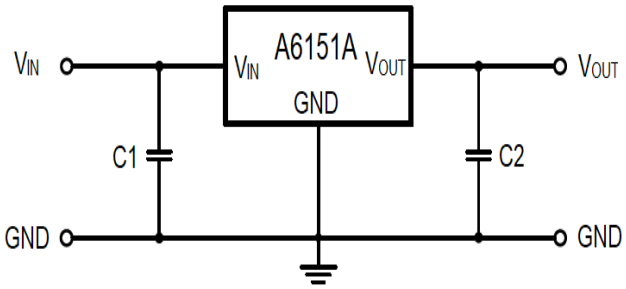
FEATURES

- Low power: 2uA (typ.)
- Low voltage drop: 100mV @ I_{OUT}=1mA
- Low temperature coefficient : < ±100ppm/℃
- High input voltage: 18V
- Maximum output current: 100mA
- Available in SOT89-3 Package

APPLICATION

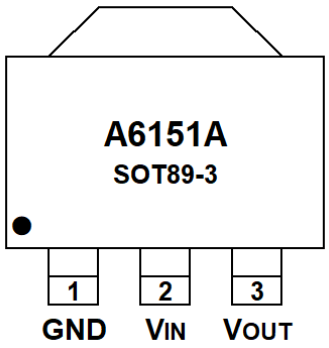
- Battery-powered equipment
- Communication equipment
- Audio/Video equipment

TYPICAL APPLICATION



Note: C_{IN}(C1)≥10μF; C_{OUT}(C2)≥10 μF.

PIN DESCRIPTION



SOT89-3, K3

Top View

Pin #	Symbol	Function
1	GND	Ground
2	V_{IN}	Power Input
3	V_{OUT}	Output

ABSOLUTE MAXIMUM RATINGS

V_{IN}, Input Voltage		-0.3V~18V
P_D, Power Dissipation	SOT89-3	500mW
T_{OPR}, Operating Ambient Temperature		-40℃ ~ +85℃
T_{STG}, Storage Temperature		-40℃ ~ +125℃

Stresses above may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

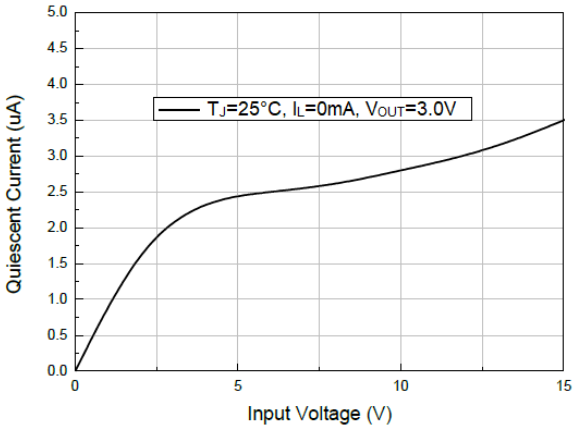
ELECTRICAL CHARACTERISTICS

T_A=25℃

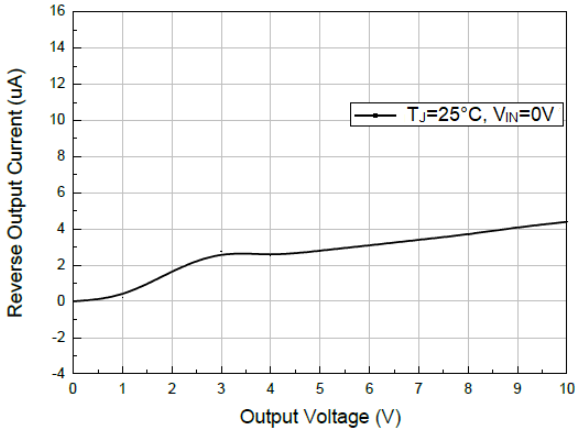
Parameter	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	V_{OUT}+2V	I_{OUT}=10mA	0.98× V_{OUT}	V_{OUT}	1.02× V_{OUT}	V
Output Current	I_{OUT}	V_{OUT}+2V		60	100	120	mA
Load Regulation	ΔV_{OUT}	V_{OUT}+2V	1mA≤I_{OUT}≤50mA	-	60	150	mV
Voltage Drop	V_{DROP}		I_{OUT}=1mA	-	100	-	mV
Current Consumption	I_{SS}	V_{OUT}+2V	No Load	-	2	4	uA
Output Shorted Current	I_{SHORT}	V_{OUT}+2V	V_{OUT} Connected to ground	20	-	80	mA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		V_{OUT}+2V≤V_{IN}≤18 I_{OUT}=1mA	-	0.2	-	%/V
Input Voltage	V_{IN}			-	-	18	V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T_A}$	V_{OUT}+2V	I_{OUT}=10mA -40℃≤T_A≤85℃	-	±0.45× $\frac{V_{OUT}}{3}$	-	$\frac{mV}{℃}$
Power Supply Ripple Rejection Rate	PSRR		f=1.0kHz	-	-	40	dB

TYPICAL PERFORMANCE CHARACTERISTICS

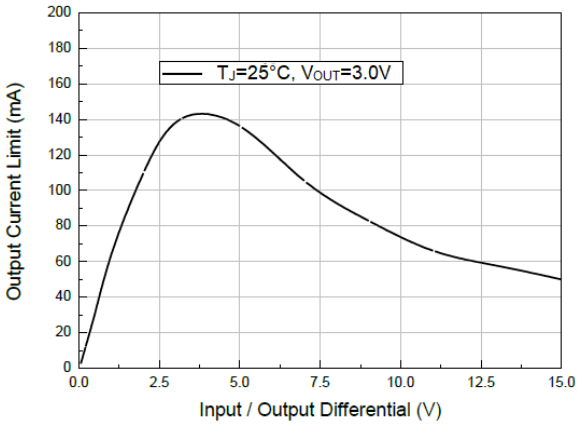
1. Quiescent Current vs. Input Voltage



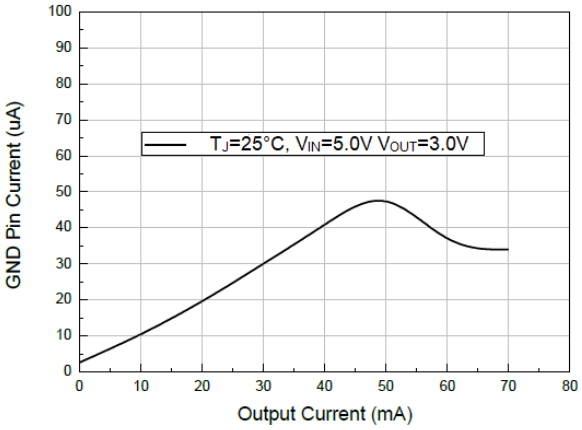
2. Reverse Output Current vs. Output Voltage



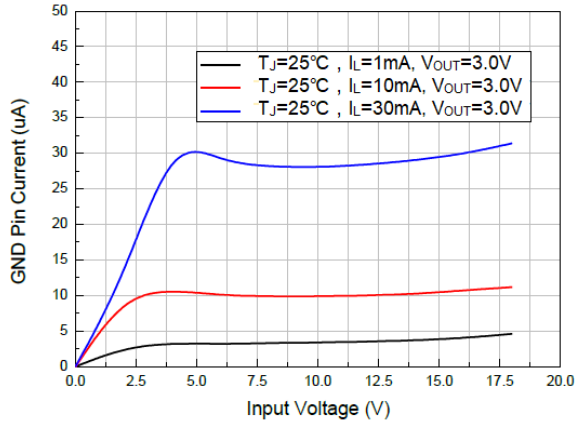
3. Current Limit vs. V_{IN}-V_{OUT}



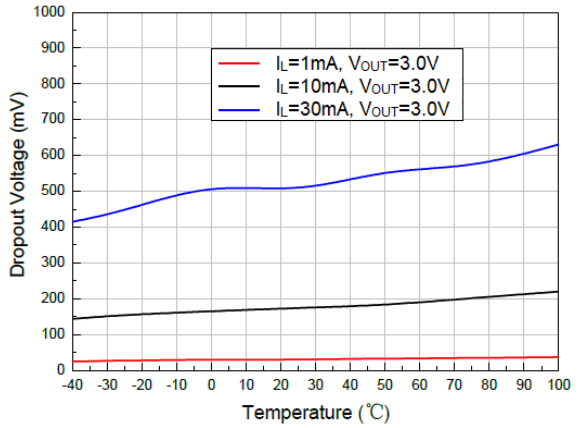
4. GND Pin Current vs. Output Current



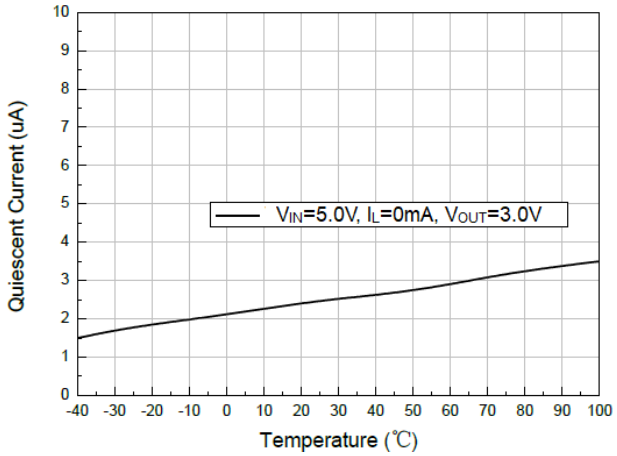
5. GND Pin Current vs. Input Voltage



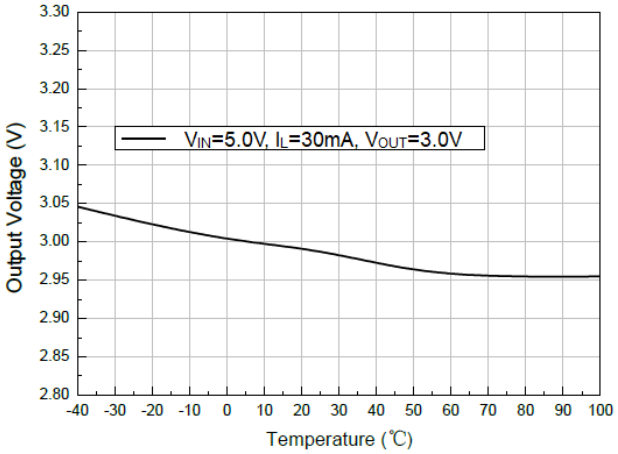
6. Dropout Voltage vs. Temperature



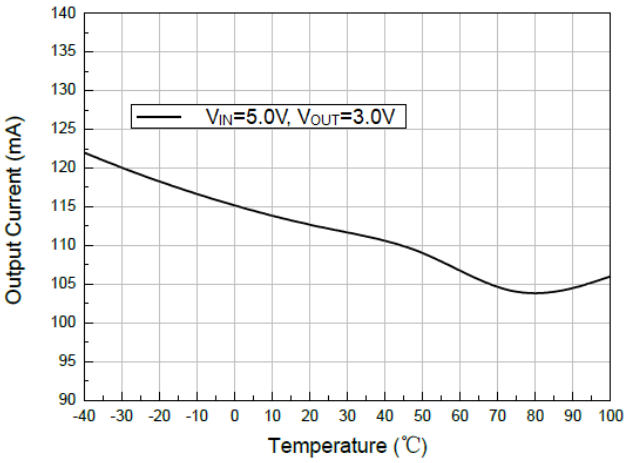
7. Quiescent Current vs. Temperature



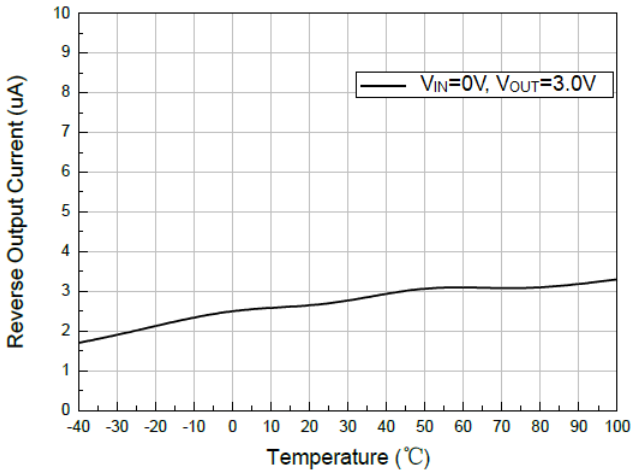
8. Output Voltage vs. Temperature



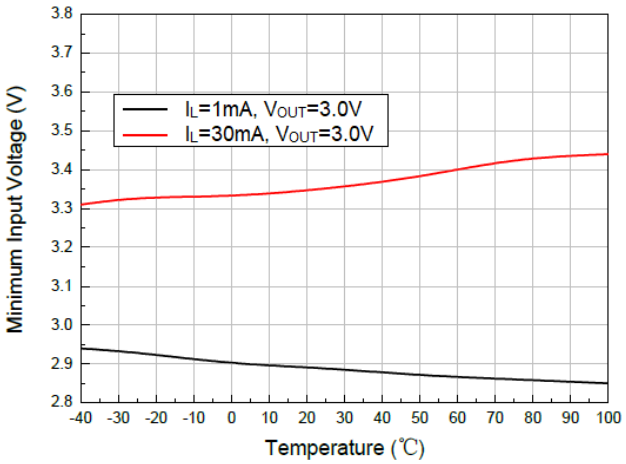
9. Output Current vs. Temperature



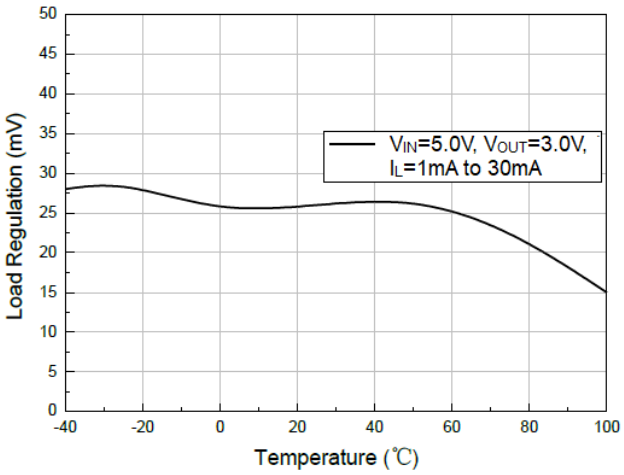
10. Reverse Output Current vs. Temperature



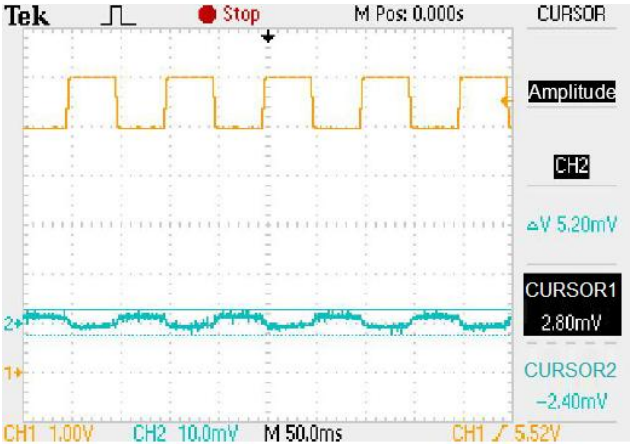
11. Minimum Input Voltage vs. Temperature



12. Load Regulation vs. Temperature

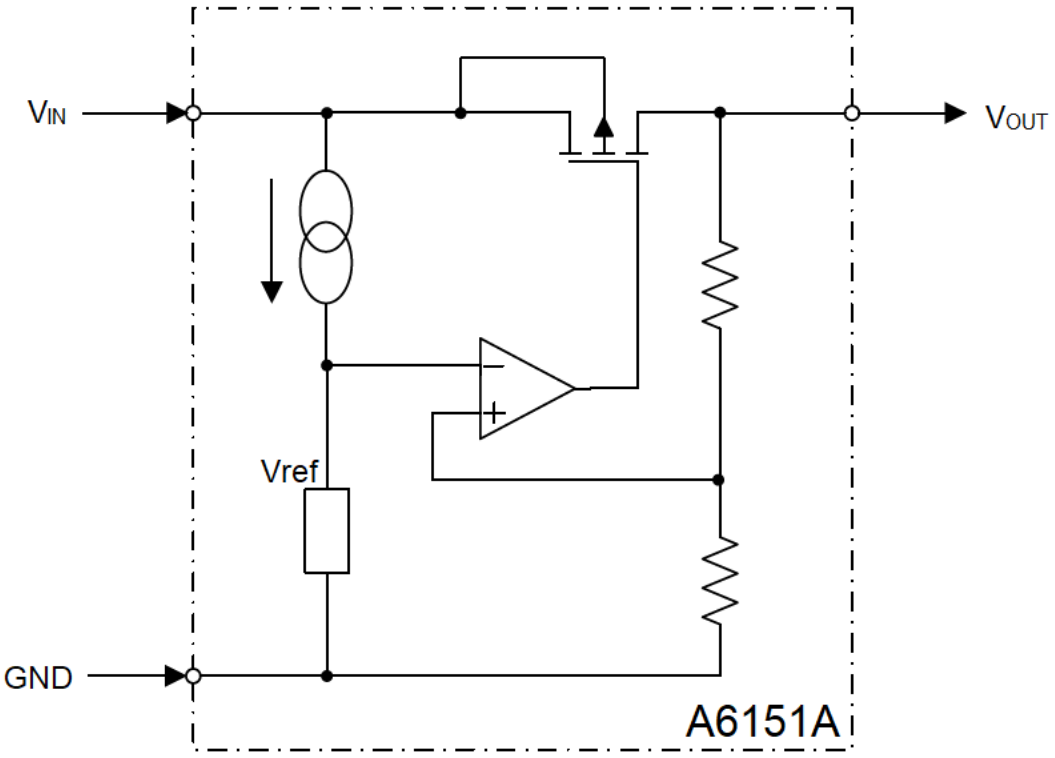


13. Input voltage transient response (I_L=10mA)



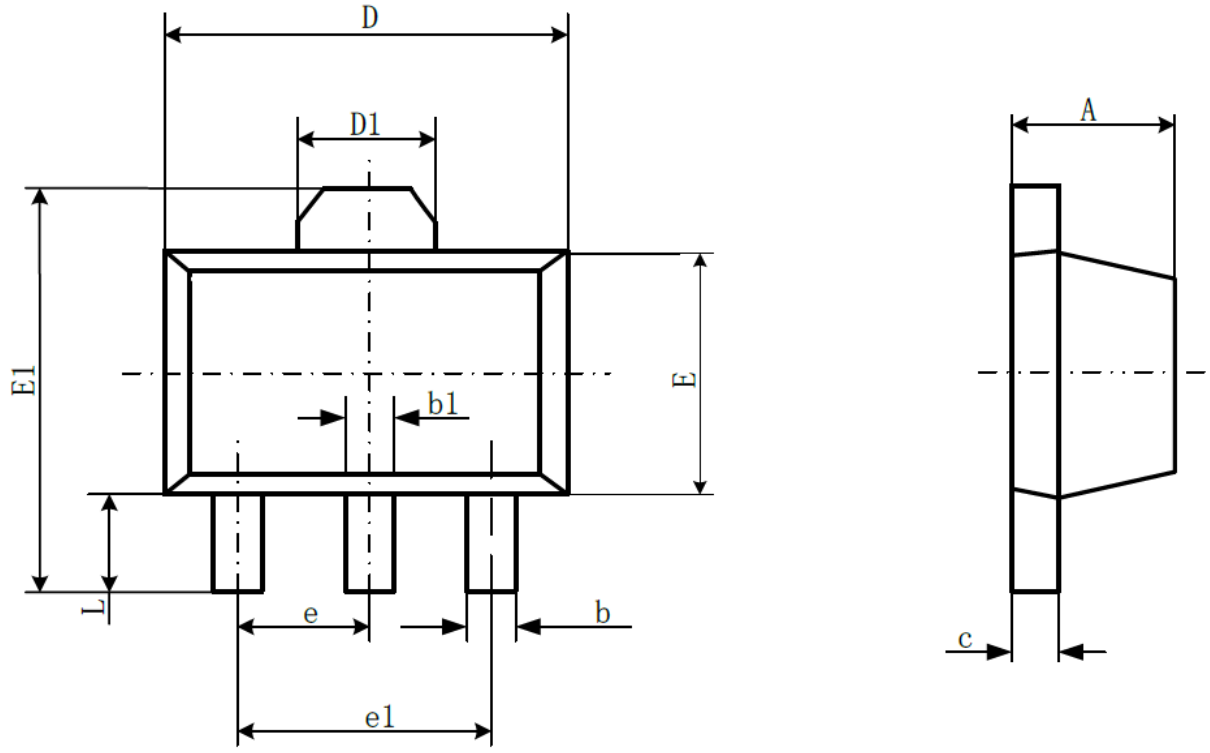
14. Load transient response (V_{IN}=4.3V, I_L=0-70-0mA)

BLOCK DIAGRAM



PACKAGE INFORMATION

Dimension in SOT89-3 (Unit: mm)



Symbol	Millimeters	
	Min	Max
A	1.400	1.600
b	0.320	0.520
b1	0.400	0.580
c	0.350	0.440
D	4.400	4.600
D1	1.550 REF	
E	2.300	2.600
E1	3.940	4.250
e	1.500 TYP	
e1	3.000 TYP	
L	0.900	1.200

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