DESCRIPTION

The A6151 series is a set of three-terminal middle current low voltage regulator implemented in CMOS technology.

A6151 can deliver 100mA output current and allow an input voltage as high as 20V.

A6151 is available with several fixed output voltages ranging from 3.0V to 8.0V. CMOS technology ensures low voltage drop and low quiescent current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain variable voltages and currents.

A6151 is available in SOT-89-3 package

ORDER INFORMATION

Package Type	Part Number	
SOT-89-3	K3	A6151K3R-XX
		A6151K3VR -XX
XX: Output Voltage, 30=3.0V, 33=3.3V, 36=3.6V, 50=5.0V, R: Tape & Reel V: Green Package		
AiT provides all Pb free products Suffix “V” means Green Package		

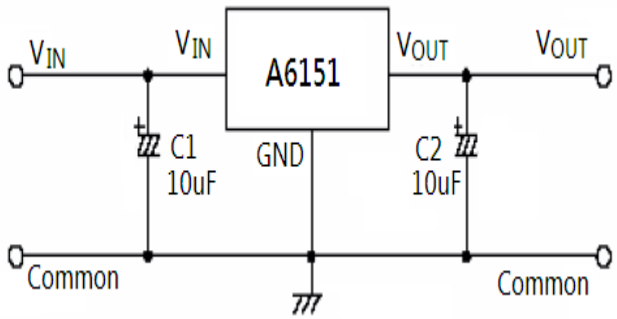
FEATURES

- Low power ：3.5uA (typ.)
- Highly Accurate: ± 2% (max)
- Low temperature coefficient： < ±100ppm/℃
- High input voltage：20V
- Internal protector: current limiter and short protector
- Middle output current：100mA
- Available in SOT-89-3 Package

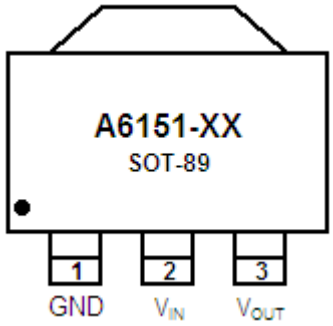
APPLICATION

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

Typical Application



PIN DESCRIPTION



Pin	Symbol	Function
SOT-89-3		
1	GND	Ground
2	V_{IN}	Power input
3	V_{OUT}	Fixed Voltage Output

ABSOLUTE MAXIMUM RATINGS

Input Voltage, V_{IN}	-0.3 ~ 22V
Power consumption, P_D	500mW
Operation Temperature, T_{OPR}	-40 ~ +85℃
Storage Temperature, T_{STG}	-40 ~ +125℃

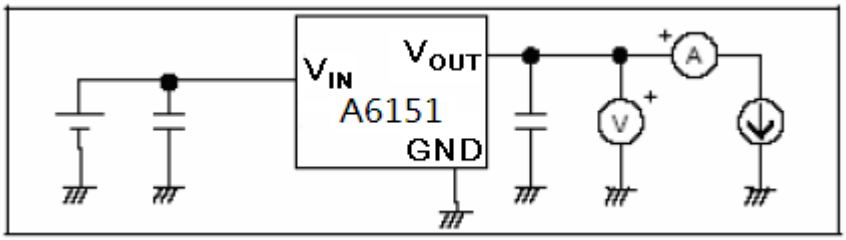
Stresses above may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics is not implied. Exposure to absolute maximum rating conditions for extended periods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

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Conditions		MIN	TYP	MAX	unit
		V_{IN}	Conditions				
Output Voltage Tolerance	V_{OUT}	V_{OUT}+2V	I_{OUT}=10mA	0.97× V_{OUT}	V_{OUT}[1]	1.03× V_{OUT}	V
Output Current	I_{OUT}	V_{OUT}+2V	-	60	100		mA
Load Regulation	$\triangle V_{OUT}$	V_{OUT}+2V	1mA≤I_{OUT}≤50mA		60	150	mV
Voltage Drop	V_{DIF}		I_{OUT}=1mA		100		mV
Current Consumption	I_{SS}	V_{OUT}+2V	No Load		3.5	10	uA
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \times V_{OUT}}$		V_{OUT}+2V≤V_{IN}≤18 I_{OUT}=1mA		0.2		%/V
Input Voltage	V_{IN}		-		-	22	V
Temperature Coefficient	$\frac{\triangle V_{OUT}}{\triangle T_A}$	V_{OUT}+2V	I_{OUT}=10mA -40℃≤Ta≤85℃		±0.45× $\frac{V_{OUT}}{3}$		$\frac{mV}{℃}$

TEST CIRCUITS

1.



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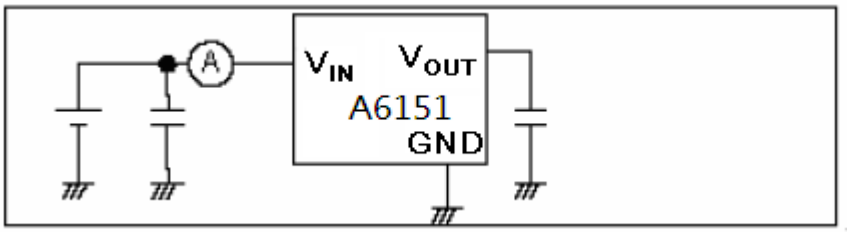

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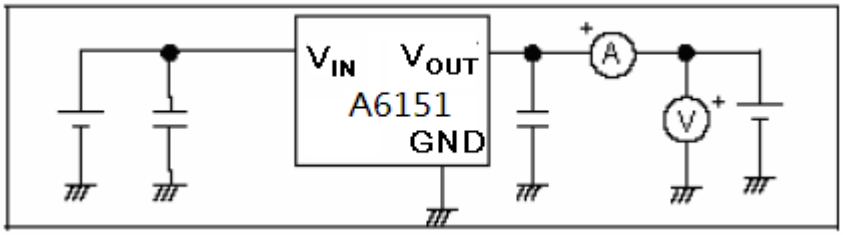
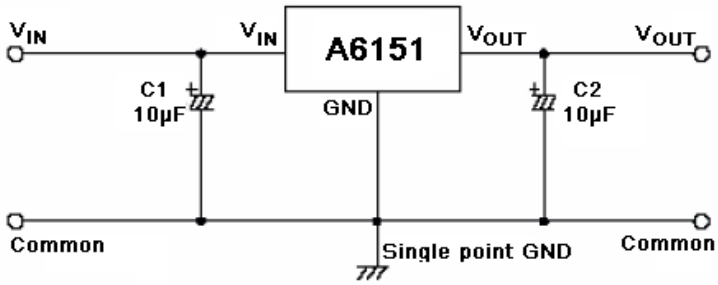
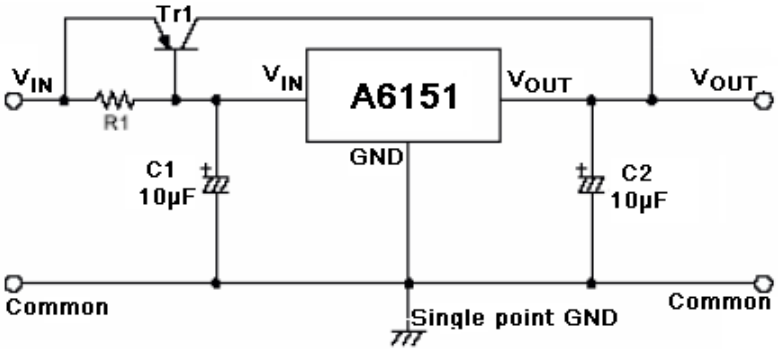


APPLICATION CIRCUITS

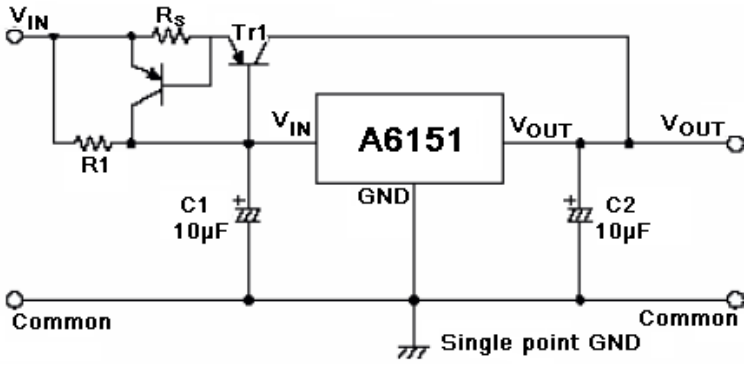
1. Basic circuit



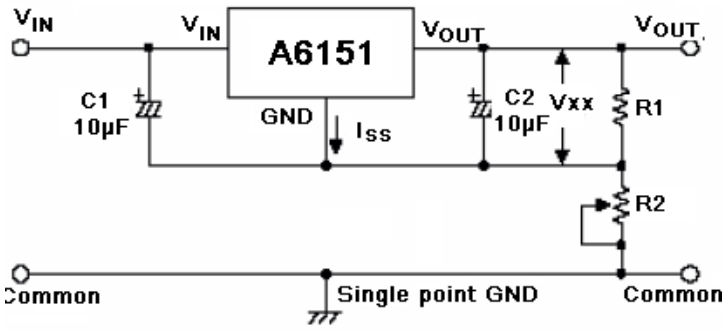
2. High output current positive voltage regulator



3. Short-circuit protection for Tr1

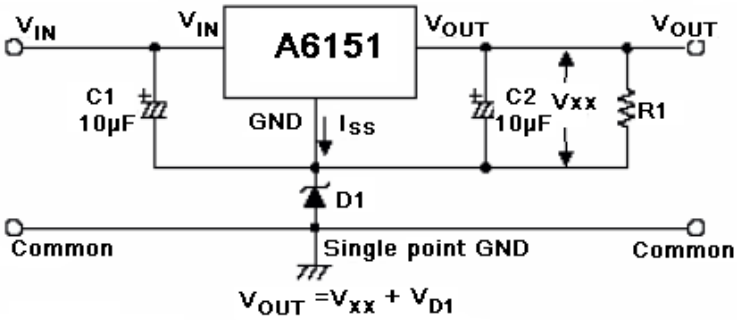


4. Circuit A for increasing output voltage



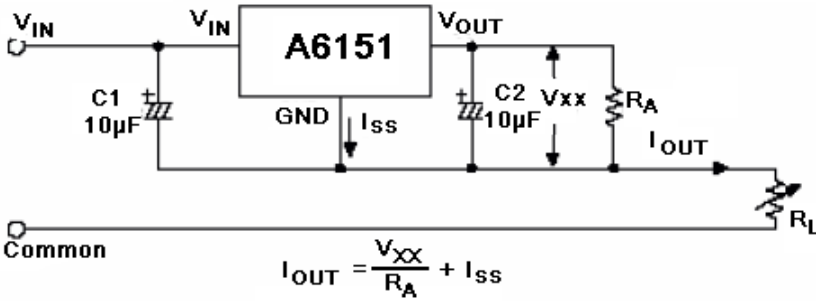
$$V_{OUT} = Vxx\ (1+\frac{R2}{R1}) + I_{SS}R2$$

5. Circuit B for increasing output voltage



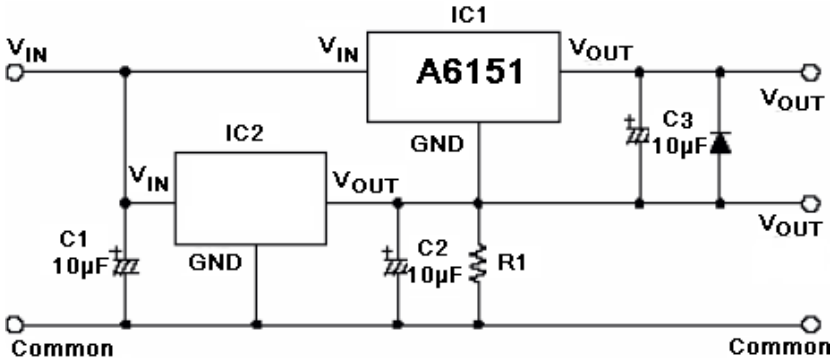
$$V_{OUT} = V_{xx} + V_{D1}$$

6. Circuit for increasing output voltage

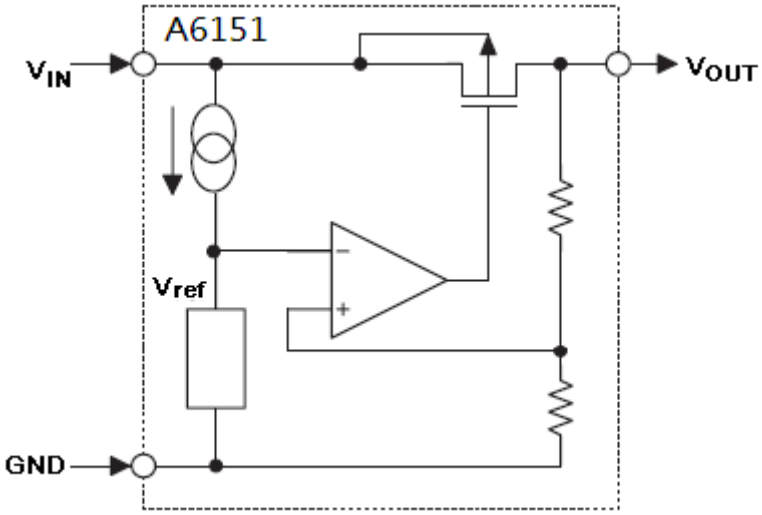


$$I_{OUT} = \frac{V_{XX}}{R_A} + I_{SS}$$

7. Circuit for increasing output voltage

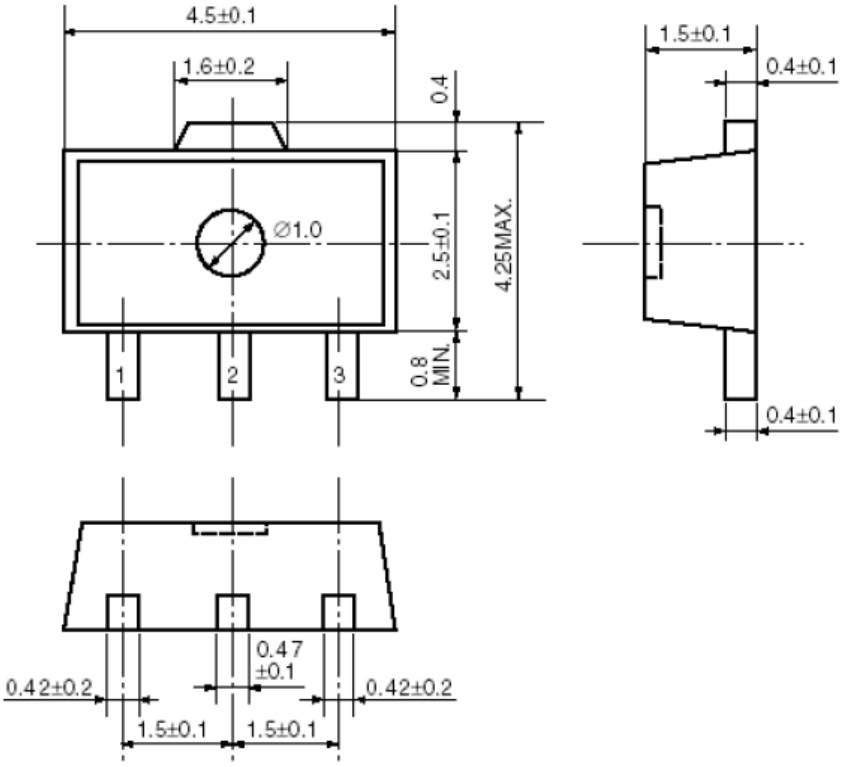


BLOCK DIAGRAM

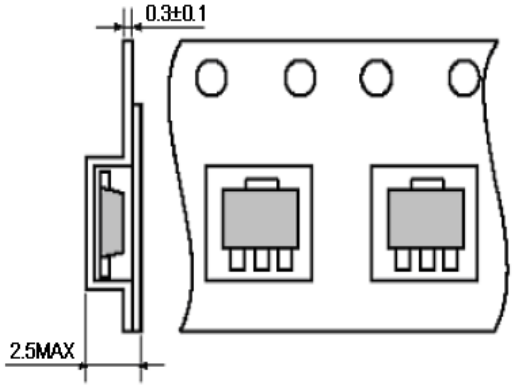


PACKAGE INFORMATION

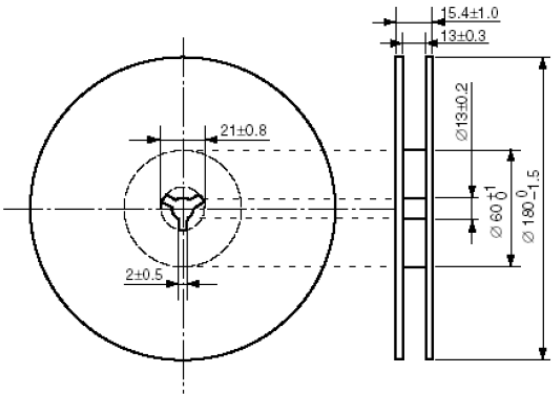
Dimension in SOT-89-3 Package (Unit: mm)



Tape Dimension



Reel Dimension



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