DESCRIPTION

The A6251 series are a group of positive voltage output, three–pin regulator, that provide a high current even when the input/output Voltage differential is small. Low power consumption and high accuracy is achieved through CMOS technology. They allow input voltages as high as 18V.

The A6251 is available in SOT-23 and SOT-89-3 packages.

FEATURES

- Ultra low quiescent current: 3.0uA(typ.)
- High input voltage (up to 18V)
- Low dropout voltage :80mV@I_{OUT}=40mA (V_{OUT}=3.3V)
- Output voltage accuracy : ±2%
- Maximum output current : 250mA (within max. power dissipation, V_{OUT}=3.3V)
- Low temperature coefficient
- Available in SOT-23 and SOT-89-3 packages

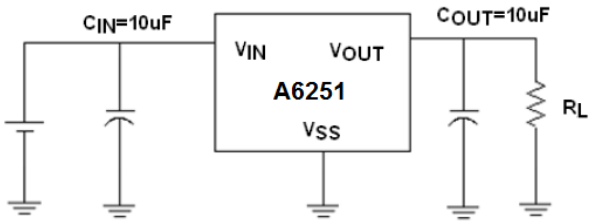
ORDERING INFORMATION

Package Type	Part Number	
SOT-23	E3	A6251E3R-XX
		A6251E3VR-XX
SOT-89-3	K3	A6251K3R-XX
		A6251K3VR-XX
Note	XX: Output Voltage V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS free products Suffix " V " means Halogen free Package		

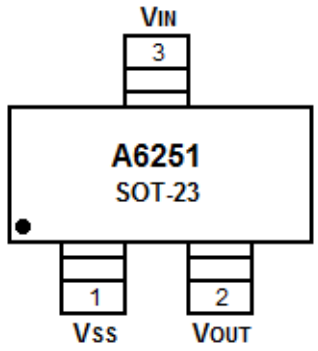
APPLICATION

- Cameras, video recorders
- Voltage regulator for microprocessor
- Voltage regulator for LAN cards
- Wireless communication equipment
- Audio/Video equipment

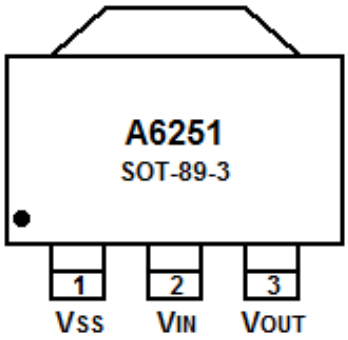
TYPICAL APPLICATION



PIN DESCRIPTION



Top View



Top View

Pin #		Symbol	Function
SOT-23	SOT-89-3		
1	1	V_{SS}	Ground
2	3	V_{OUT}	Input
3	2	V_{IN}	Output

ABSOLUTE MAXIMUM RATINGS

V_{IN}, Input Voltage		18V
V_{OUT}, Output Voltage		V_{SS}-0.3V ~ V_{IN} +0.3V
I_{OUT}, Output Current		500mA
T_{OPR}, Operating Temperature Range		-40°C ~85°C
T_{STG}, Storage Temperature Range		-40°C ~125°C
P_D, Power Dissipation	SOT-23	300mW
	SOT-89-3	500mW

Stress beyond above listed “Absolute Maximum Ratings” may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

V_{IN}= V_{OUT}+1.0V, C_{IN}=C_L=10uF, T_A=25°C, unless otherwise noted

Parameter	Symbol	Conditions		Min	Typ.	Max	Unit
Output Voltage	$V_{OUT(E)}$ NOTE2	I_{OUT}=40mA, V_{IN}=V_{OUT}+1V		x0.98	$V_{OUT(T)}$ NOTE1	x1.02	V
Input Voltage	V_{IN}					18	V
Maximum Output Voltage	I_{OUT_MAX}	V_{IN}=V_{OUT}+1V		250			mA
Load Regulation	ΔV_{OUT}	V_{IN}=V_{OUT}+1V, 1mA≤I_{OUT}≤60mA			15	40	mV
Dropout Voltage NOTE 3	V_{DIF}	I_{OUT}=40mA	A6251-33		80		mV
			A6251-40		70		
Supply Current	I_{SS}	V_{IN}=V_{OUT}+1V			3	4	uA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I_{OUT}=40mA V_{OUT}+1V≤V_{IN}≤18V			0.1	0.2	%/V
$\Delta V_{OUT}/\Delta T_A$	Temperature Coefficient	V_{IN}=V_{OUT}+1V, I_{OUT}=40mA -40°C<T_A<85°C			±0.7		mV/°C

NOTE1: $V_{OUT\ (T)}$: Specified Output Voltage

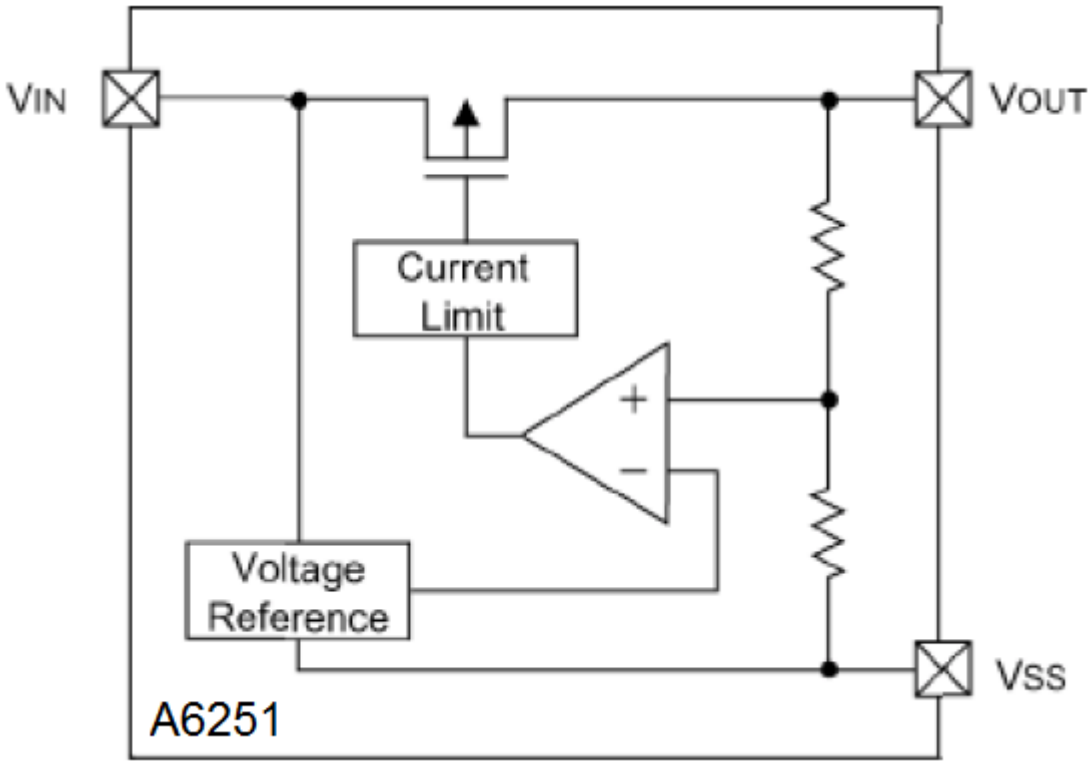
NOTE2: $V_{OUT\ (E)}$: Effective Output Voltage (ie. The output voltage when "$V_{OUT\ (T)}$+1.0V"is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.)

NOTE3: V_{DIF}: V_{IN1} –$V_{OUT\ (E)}$'

V_{IN1}: The input voltage when $V_{OUT(E)}$' appears as input voltage is gradually decreased.

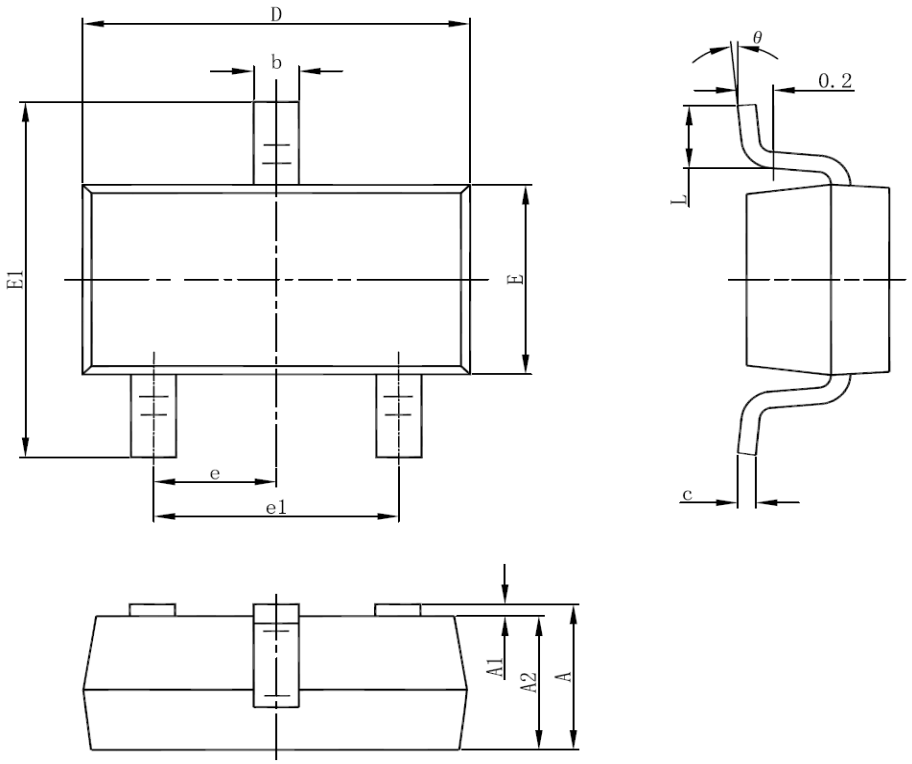
$V_{OUT\ (E)}$'=A voltage equal to 98% of the output voltage whenever an amply stabilized I_{OUT} and {$V_{OUT\ (T)}$+1.0V} is input.

BLOCK DIAGRAM



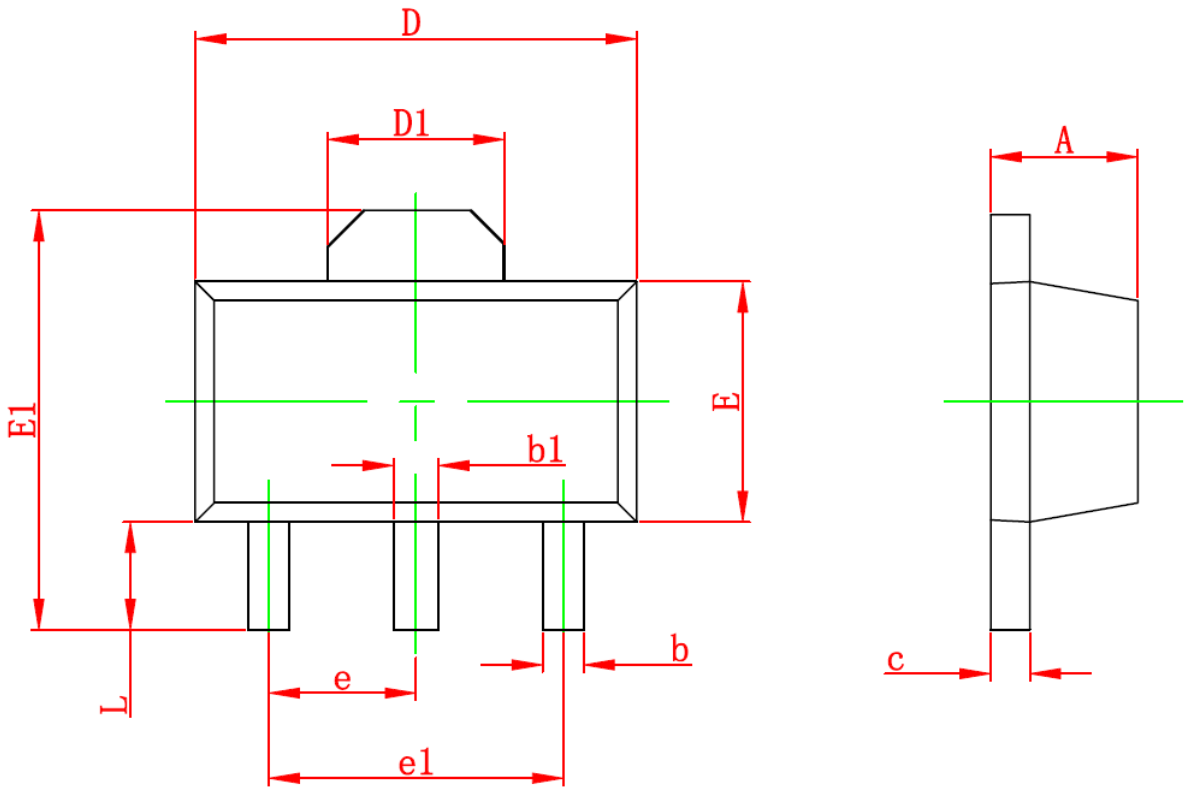
PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



SYMBOL	MIN	MAX
A	-	1.300
A1	0.000	0.100
A2	1.000	1.200
b	0.350	0.500
c	0.100	0.250
D	2.700	3.100
E	1.500	1.800
E1	2.600	3.000
e	0.950(BSC)	
e1	1.700	2100
L	0.200	-
θ	0°	8°

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



Symbol	Min	Max
A	1.400	1.600
b	0.360	0.480
b1	0.410	0.530
c	0.380	0.430
D	4.400	4.600
D1	1.400	1.750
E	2.400	2.600
E1	-	4.250
e	1.400	1.600
e1	2.800	3.200
L	0.800	-

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