



DESCRIPTION

A6156H series is a group of positive voltage output, three-pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

The A6156H consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver. Transient response to load variations have improved in comparison to the existing series.

The A6156H is available in SOT-23 SOT-25 and SOT89-3 packages.

APPLICATION

- Battery-powered equipment
- Home Appliance
- Smoke detector and sensor
- Microcontroller Applications

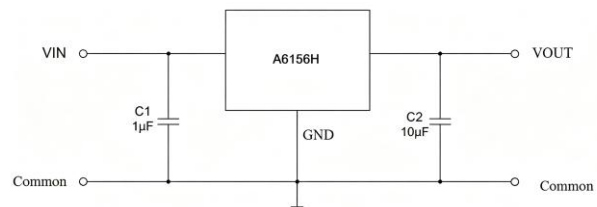
ORDERING INFORMATION

Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	A6156HE3R-XX
		A6156HE3VR-XX
SOT-25 SPQ: 2,500pcs/Reel	E5	A6156HE5R-XX
		A6156HE5VR-XX
SOT89-3 SPQ: 1,000pcs/Reel	K3	A6156HK3R-XX
		A6156HK3VR-XX
Note	XX: Output Voltage, 25=2.5V, 27= 2.7V, 30=3.0V, 33=3.3V 36=3.6V, 40=4.0V 44=4.4V, 50=5.0V V: Halogen Free R: Tape & Reel	
	AiT provides all RoHS products	

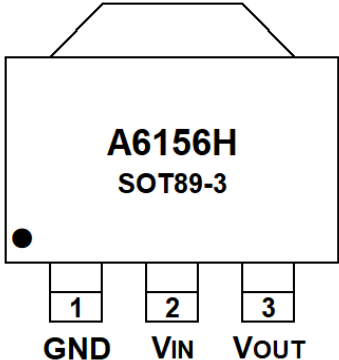
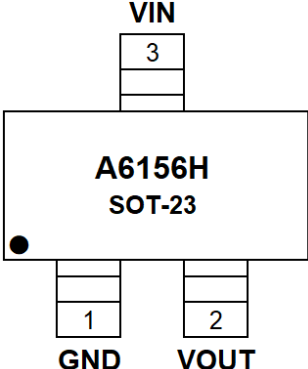
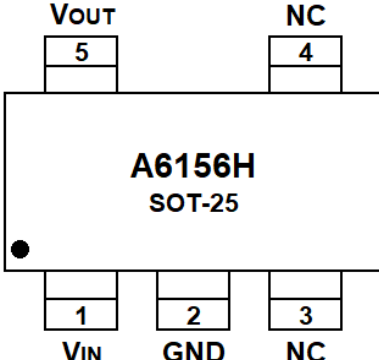
FEATURES

- High input voltage: 60V
- Low temperature coefficient
- Integrated Short-Circuit Protection
- High PSRR : 70dB at 1KHz
- Good Transient Response
- Large Output Current: 150mA
- Low Quiescent Current: 2uA
- Output voltage accuracy: tolerance $\pm 2\%$
- Built-in current limiter
- Dropout Voltage:
70mV@10mA/700mV@100mA
- High Input Voltage Rating : Up to 80V
- Available in SOT-23 SOT-25 and SOT89-3 Packages.

TYPICAL APPLICATION



**PIN DESCRIPTION**

 A6156H SOT89-3 1 2 3 GND VIN VOUT SOT89-3, K3 Top View	 A6156H SOT-23 1 2 3 GND VOUT VIN SOT-23, E3 Top View	 A6156H SOT-25 1 2 3 4 5 VIN GND NC NC VOUT SOT-25, E5 Top View		
Pin #			Symbol	Function
SOT-23	SOT-25	SOT89-3		
1	1	1	GND	Ground
2	5	3	V _{OUT}	Output Voltage Pin
3	2	2	V _{IN}	Input Voltage Pin
-	4	-	NC	Not Connected
-	3	-	NC	Not Connected

ABSOLUTE MAXIMUM RATINGS

Voltage	VIN Pin to GND Pin	-0.3V ~ 80V
	VOUT Pin to GND pin	-0.3V ~ 6V
	VOUT Pin to VIN Pin	-35V ~ 0.3V
Peak Output Current		Internally limited
T _J , Max Operating Virtual Junction Temperature		150°C
T _S , Storage Temperature		-40°C ~ +150°C
T _A , Operating Ambient Temperature		-40°C ~ +85°C
Package Thermal Resistance (Junction to Ambient)	SOT89-3	180°C/W
	SOT-23	380°C/W
	SOT-25	300°C/W
Power Dissipation	SOT89-3	600mW
	SOT-23	300mW
	SOT-25	400mW
Electrostatic Discharge Rating	Human Body Model (HBM)	4kV
	Charged Device Model (MM)	100V

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

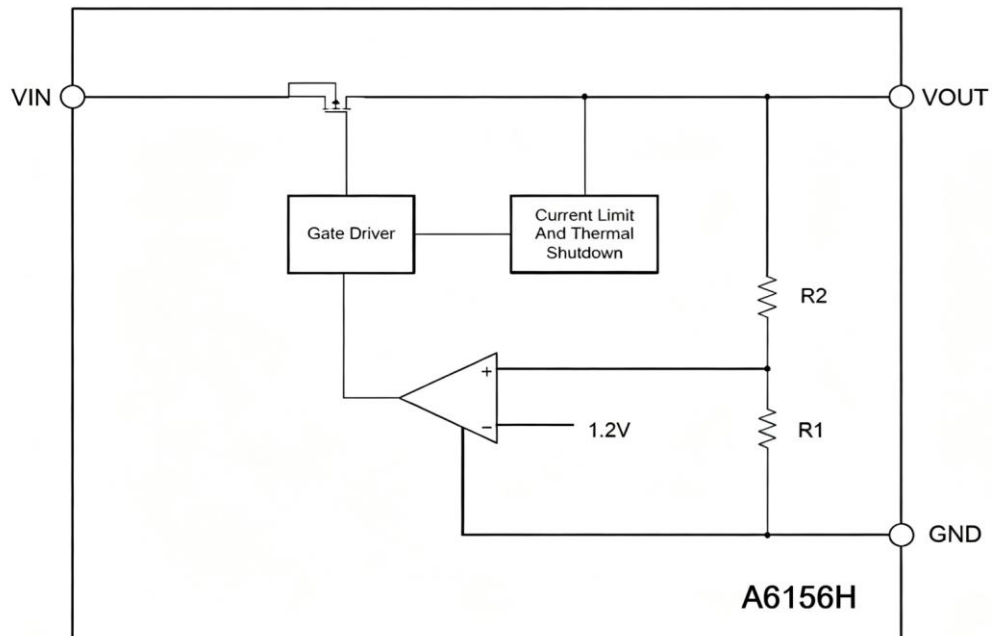
T_A = 25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Voltage	V _{IN}	-	5	-	60	V
Quiescent Current	I _{GND}	V _{IN} =12V, No load	-	2	-	uA
Output Voltage Accuracy	V _{OUT}	V _{IN} =12V, I _{OUT} =10mA	V _{OUTNO} M*0.98	V _{OUTNOM}	V _{OUTNOM} *1.02	V
Output Current	I _{OUT_MAX}		-	150	-	mA
Dropout Voltage *	V _{DROP}	I _{OUT} = 10mA, V _{IN} =V _{OUTNOM} -0.1V	-	70	-	mV
		I _{OUT} = 100mA, V _{IN} =V _{OUTNOM} -0.1V	-	700	-	
Load Regulation	ΔV _{OUT} (ΔI _{OUT})	V _{IN} = V _{OUT} +2V ~24V, V _{IN} = 5V~24V if V _{OUT} < 3V	-	0.02	-	mV
Line Regulation	ΔV _{OUT} (ΔV _{IN})	I _{OUT} = 1mA~150mA	-	0.01	-	%/V
Current Limit	I _{LIMIT}	-	-	250	-	mA
Thermal Shutdown Temperature	T _{SHDN}	Shutdown, temperature increasing	-	150	-	°C
		Reset, temperature increasing	-	140	-	
-	PSRR	V _{IN} =12V, I _{OUT} = 10mA, f=1KHz, V _{OUT} =3.3V	-	70	-	dB

*Dropout Voltage is the voltage difference between the input and the output at which the output voltage drops 2% below its nominal value.

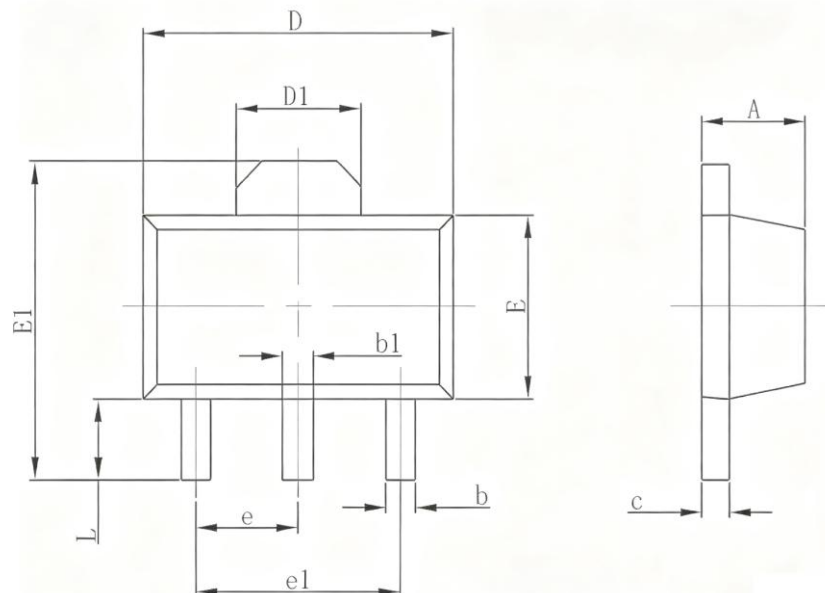


BLOCK DIAGRAM



**PACKAGE INFORMATION**

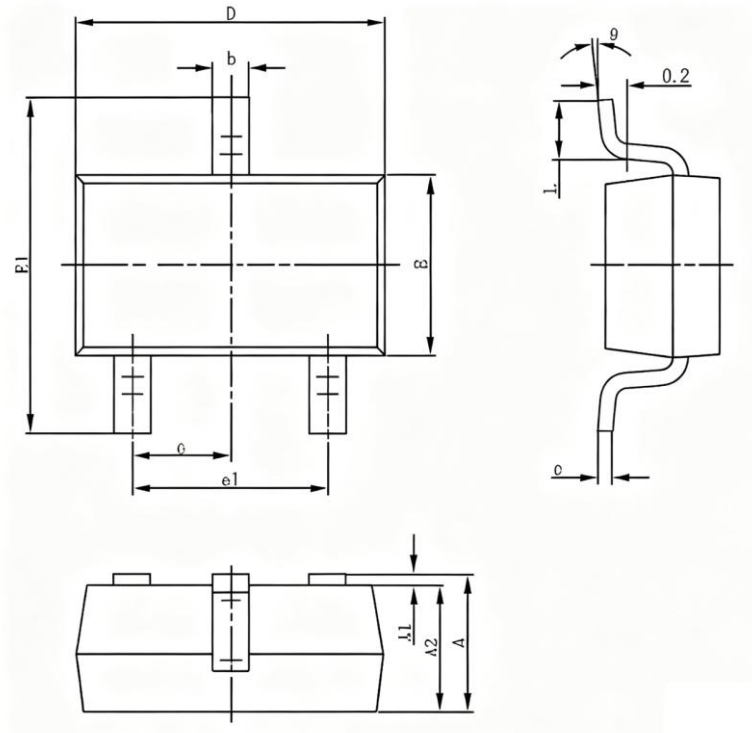
Dimension in SOT89-3 (Unit: mm)



Symbol	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



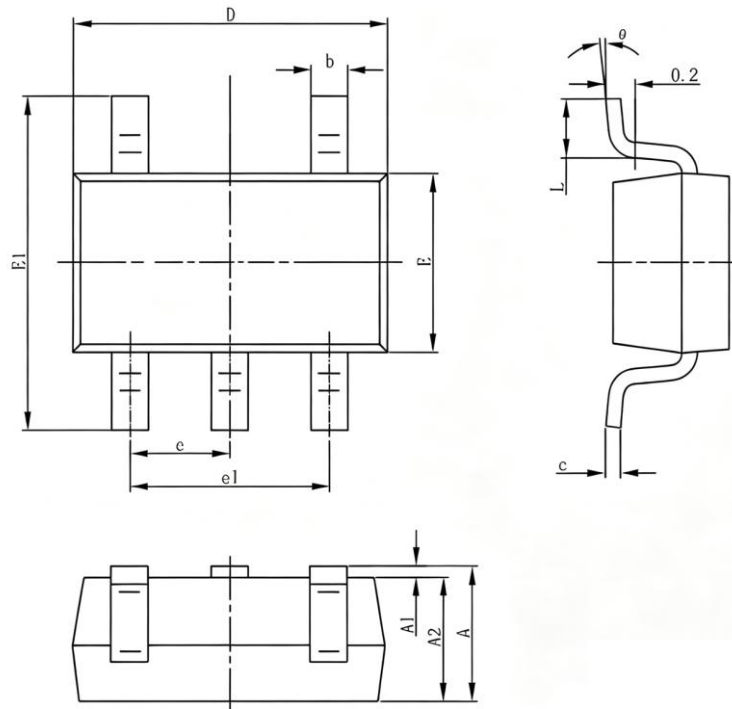
Dimension in SOT-23 Package (Unit: mm)



Symbol	Min	Max
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950 BSC.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°



Dimension in SOT-25 Package (Unit: mm)



Symbol	Min	Max
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950 BSC.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°



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