

Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- High input voltage (up to +18~24V)
- High output current : 300mA
- Output voltage accuracy: tolerance $\pm 2\%$
- TO-92, SOT-89 and SOT-23 package

Applications

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

General Description

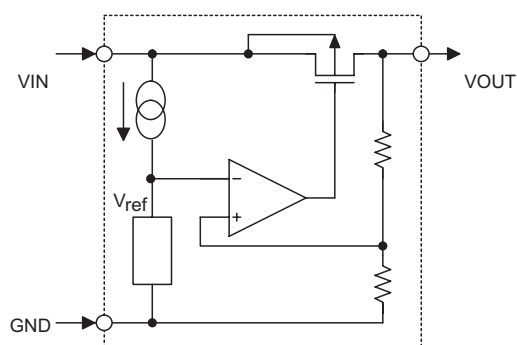
The AMS73XX series is a set of three-terminal high current low voltage regulator implemented in CMOS technology. They can deliver 300mA output current and allow an input voltage as high as 20V. They are available with several fixed output voltages ranging from 1.5V to 5.0V. CMOS technology ensures low 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.

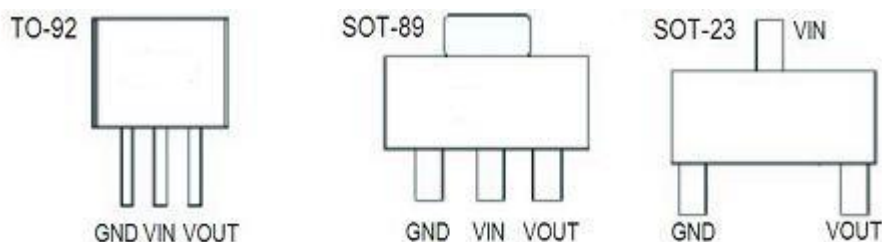
Selection Table

Part No.	Output Voltage	Package	
7315	1.5V	TO-92 SOT-89 SOT-23	
7318	1.8V		
7325	2.5V		
7333	3.3V		
7350	5.0V		

Block Diagram



Pin Assignment



Absolute Maximum Ratings

Supply Voltage	-0.3V to 24V	Storage Temperature	-50°C to 125°C
Power Consumption (*1)	300mW	Operating Temperature	-40°C to 85°C
Power Consumption (*2)	250mW		

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

*1: applied to SOT-89

*2: applied to TO-92

Electrical Characteristics

+1.5V Output Type

Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V _{IN}	Conditions				
V _{OUT}	Output Voltage Tolerance	3.5V	I _{OUT} =10mA	1.47	1.5	1.53	V
I _{OUT}	Output Current	3.5V	—	100	—	—	mA
ΔV _{OUT}	Load Regulation	3.5V	1mA ≤ I _{OUT} ≤ 100mA	—	45	90	mV
V _{DIF}	Voltage Drop	—	I _{OUT} =5mA	—	120	—	mV
I _{SS}	Current Consumption	20V	No load	—	3	5	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	—	4V ≤ V _{IN} ≤ 24V I _{OUT} =1mA	—	0.05	—	%/V
V _{IN}	Input Voltage	—	—	—	—	20	V
—	Temperature Coefficient	3.5V	I _{OUT} =1mA -40°C ≤ Ta ≤ 85°C	—	±50	—	ppm/°C



+1.8V Output Type

Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V _{IN}	Conditions				
V _{OUT}	Output Voltage Tolerance	3.8V	I _{OUT} =10mA	1.764	3.3	1.836	V
I _{OUT}	Output Current	3.8V	—	200	—	—	mA
ΔV _{OUT}	Load Regulation	3.8V	1mA ≤ I _{OUT} ≤ 150mA	—	45	90	mV
V _{DIF}	Voltage Drop	—	I _{OUT} =10mA	—	120	—	mV
I _{SS}	Current Consumption	20V	No load	—	1.2	2.5	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	—	2.5V ≤ V _{IN} ≤ 24V I _{OUT} =1mA	—	0.05	—	%/V
V _{IN}	Input Voltage	—	—	—	—	20	V
$\frac{\Delta V_{OUT}}{\Delta T_a}$	Temperature Coefficient	3.8V	I _{OUT} =1mA -40°C < Ta < 85°C	—	±50	—	ppm/°C

+2.5V Output Type

Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V _{IN}	Conditions				
V _{OUT}	Output Voltage Tolerance	4.5V	I _{OUT} =50mA	2.45	2.5	2.55	V
I _{OUT}	Output Current	4.5V	—	250	—	—	mA
ΔV _{OUT}	Load Regulation	4.5V	1mA ≤ I _{OUT} ≤ 250mA	—	45	90	mV
V _{DIF}	Voltage Drop	—	I _{OUT} =50mA	—	150	—	mV
I _{SS}	Current Consumption	20V	No load	—	1.2	2.5	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	—	3.5V ≤ V _{IN} ≤ 20V I _{OUT} =1mA	—	0.05	—	%/V
V _{IN}	Input Voltage	—	—	—	—	20	V
$\frac{\Delta V_{OUT}}{\Delta T_a}$	Temperature Coefficient	4.5V	I _{OUT} =10mA -40°C < Ta < 85°C	—	±50	—	ppm/°C

+3.3V Output Type

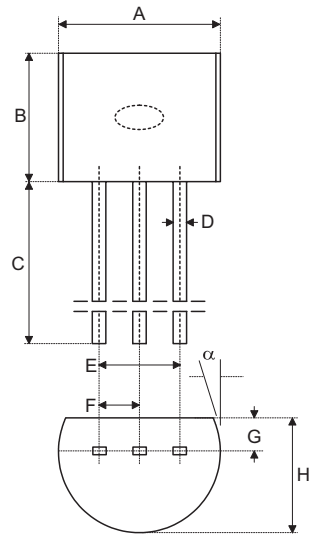
Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V _{IN}	Conditions				
V _{OUT}	Output Voltage Tolerance	5.3V	I _{OUT} =10mA	3.234	3.3	3.366	V
I _{OUT}	Output Current	5.3V	—	120	—	—	mA
ΔV _{OUT}	Load Regulation	5.3V	1mA ≤ I _{OUT} ≤ 300mA	—	60	100	mV
V _{DIF}	Voltage Drop	—	I _{OUT} =100mA	—	220	—	mV
I _{SS}	Current Consumption	20V	No load	—	1.2	2.5	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	—	4.3V ≤ V _{IN} ≤ 20V I _{OUT} =1mA	—	0.05	—	%/V
V _{IN}	Input Voltage	—	—	—	—	20	V
$\frac{\Delta V_{OUT}}{\Delta T_a}$	Temperature Coefficient	5.3V	I _{OUT} =10mA -40°C < Ta < 85°C	—	±50	—	ppm/°C

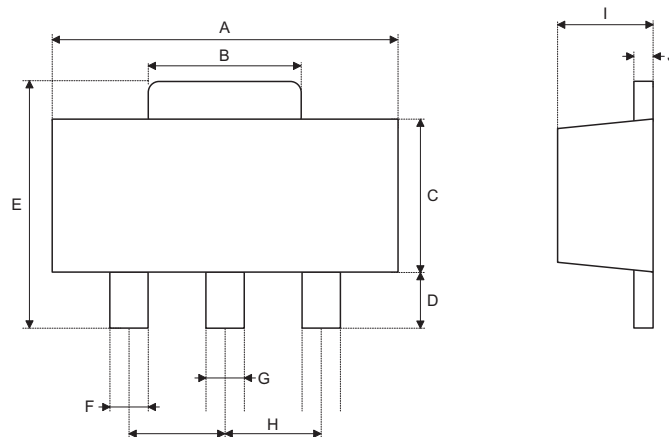


Package Information

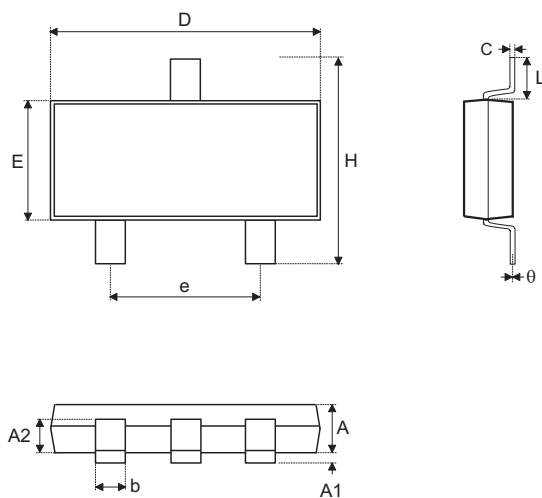
TO-92 Outline Dimensions



Symbol	Dimensions in mil		
	Min.	Nom.	Max.
A	170	—	200
B	170	—	200
C	500	—	—
D	11	—	20
E	90	—	110
F	45	—	55
G	45	—	65
H	130	—	160
I	8	—	18
α	4°	—	6°



Symbol	Dimensions in mil		
	Min.	Nom.	Max.
A	173	—	181
B	64	—	72
C	90	—	102
D	35	—	47
E	155	—	167
F	14	—	19
G	17	—	22
H	—	59	—
I	55	—	63
J	14	—	17



Symbol	Dimensions in mm		
	Min.	Nom.	Max.
A	1.00	—	1.30
A1	—	—	0.10
A2	0.70	—	0.90
b	0.35	—	0.50
C	0.10	—	0.25
D	2.70	—	3.10
E	1.40	—	1.80
e	—	1.90	—
H	2.60	—	3
L	0.37	—	—
θ	1°	—	9°