

1.0A Adjustable and Fixed Voltage LDO Linear Regulator

GENERAL DESCRIPTION

The **ME6100** is a low-dropout linear regulator that operates the input voltage from $\pm 2.5V$ to $\pm 7.0V$ and delivers 1.0A load current.

The **ME6100** is available in two types, either fixed or adjustable output voltage. The output voltage of the fixed types is preset at an internally trimmed voltage 1.8V, 2.5V 3.3V or can be made with options of the output range from 1.3V to 4.5V in 100mV increments. The output range of the adjustable types is from 1.25V to 5V.

The **ME6100** consists of a 1.25V reference, an error amplifier, and a P-channel pass transistor allows the low 65uA(Typ.) Ground pin current. Other features include short-circuit protection and thermal shutdown protection.

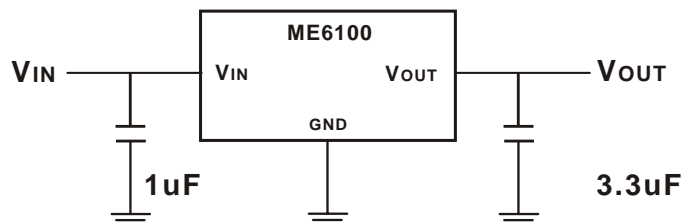
FEATURES

1. Low dropout voltage 700mV at 1.0A typ.
2. Adjustable output voltage or fixed output voltage (ME6100-xx) present at 1.8V, 2.5V, 3.3V
3. High output voltage accuracy
Fixed output voltage: $\pm 35mV$
Adjustable output voltage: $\pm 50mV$
4. Small output capacitor
5. Output current limit
6. Thermal overload shutdown protection
7. SOT-223, TO-252, and TO-263 Package

APPLICATIONS

1. Active SCSI Terminators
2. High Efficiency Linear Regulator
3. Monitor Microprocessor
4. Low Voltage Micro-Controllers
5. Post Regulator for Switching Power

TYPICAL APPLICATION



Absolute Maximum Ratings			
Parameter	Symbol	Typical	Units
Input Voltage V_{IN} to GND		9	V
Output Current limit	I(LIMIT)	1.3	A
Power Dissipation Continuous	SOT-223	1.8	W
	TO-252	2.0	
	TO-263	2.2	
Operating Junction Temperature	T_J	-40 to 125	$^{\circ}C$
Operating Ambient Temperature Range		-40 to 85	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$
Lead Temperature		260	$^{\circ}C$
ESD	(HBM)	4000	V
	(MM)	400	

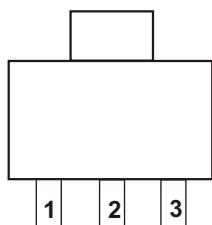
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ELECTRICAL CHARACTERISTICS ($C_{IN}=10\mu F$, $C_{OUT}=10\mu F$, $T_A=25^\circ C$, unless otherwise noted.)

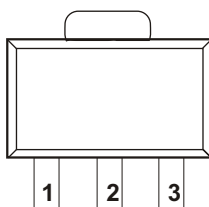
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input Voltage		2.5		7.0	V
Output Voltage	Fixed Voltage Type $V_{IN}=V_{OUT}+1.0V$, $I_{OUT}=1mA$	$V_{OUT}-0.035$	V_{OUT}	$V_{OUT}+0.035$	V
	Adjustable Voltage Type $V_{IN}=V_{OUT}+1.2V$, $I_{OUT}=1mA$	1.20	1.25	1.30	V
Output Voltage Accuracy	$V_{IN} > V_{OUT}+1.0V$, $V_{IN} \leq 7V$ (Fixed Voltage Type)	-35		35	mV
	$V_{IN} > V_{OUT}+1.2V$, $V_{IN} \leq 7V$ (Adjustable Voltage Type)	-50		50	mV
Maximum Load Current		1			A
Current Limit				1.3	A
Short-Circuit Current	$V_{OUT}=0V$ $V_{IN} > V_{OUT}+1.0V$ (Fixed Voltage Type) $V_{IN} > V_{OUT}+1.2V$ (Adjustable Voltage Type)		650	760	mA
Ground Pin Current	$I_{LOAD}=0mA$ to $1A$, $V_{IN}=V_{OUT}+1.0V$		65	90	μA
ADJ Pin Current	$I_{LOAD}=0mA$ to $1A$, $V_{IN}=V_{OUT}+1.2V$		65	90	μA
Dropout Voltage (Fixed Output Voltage Version)	$I_O=100mA$		60	100	mV
	$I_O=500mA$		300	500	mV
	$I_O=1.0A$		700	1000	mV
Line Regulation	$V_{OUT}+1.0V < V_{IN} < 7V$, $I_{LOAD}=1mA$ (Fixed Voltage Type)		0.2	0.3	%/V
	$V_{OUT}+1.2V < V_{IN} < 7V$, $I_{LOAD}=1mA$ (Adjustable Voltage Type)		0.2	0.3	%/V
Load Regulation	$I_{OUT}=0mA$ to $1.0A$ (Fixed Voltage Type)		0.02	0.03	%/mA
	$I_{OUT}=0mA$ to $1.0A$ (Adjustable Voltage Type)		0.1	0.15	%/mA
Output Noise	$F=1Hz$ to $10KHz$, $C_{OUT}=10\mu F$		80		μV_{RMS}
PSRR	$F=10KHz$, $C_{OUT}=10\mu F$		75		dB
Thermal Shutdown Temperature			170		$^\circ C$
Thermal Shutdown Hysteresis			20		$^\circ C$
Thermal Resistance θ_{JA}	SOT-223			80	$^\circ C/W$
	TO-252			70	$^\circ C/W$
	TO-263			65	$^\circ C/W$

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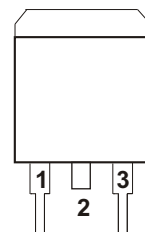
PIN CONNECTIONS



SOT-223



TO-252



TO-263

ORDERING INFORMATION

ME6100XXX XX

PACKAGE	PIN OUT		
STA: SOT-223	1.OUT	2.GND	3.IN
STB: SOT-223	1.GND	2.OUT	3.IN
STC: SOT-223	1.GND	2.IN	3.OUT
STD: SOT-223	1.IN	2.GND	3.OUT
DTB: TO-252	1.GND	2.OUT	3.IN
DTD: TO-252	1.IN	2.GND	3.OUT
D2TA: TO-263	1.GND	2.OUT	3.IN
D2TB: TO-263	1.GND	2.IN	3.OUT
D2TC: TO-263	1.IN	2.GND	3.OUT

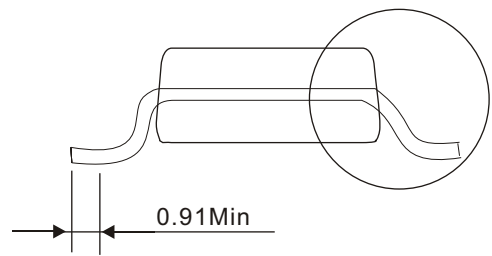
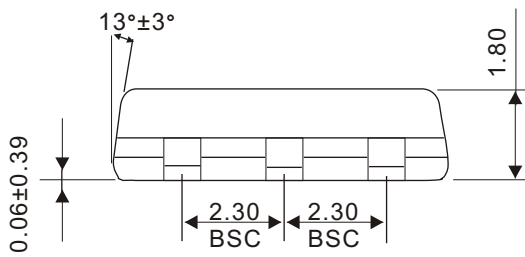
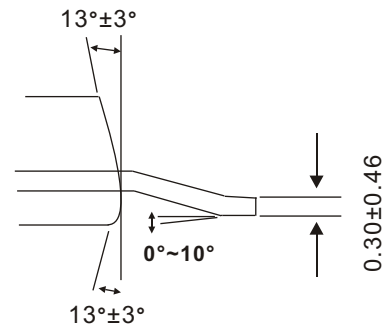
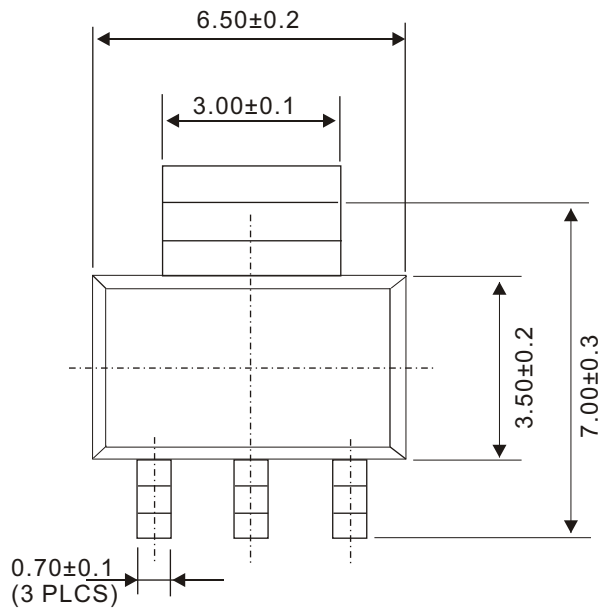
OUTPUT VOLTAGE

15:1.5V
 18:1.8V
 25:2.5V
 29:2.85V
 30:3.0V
 33:3.3V
 36:3.6V
 A :ADJ

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Physical Dimensions inches(millimeters) unless otherwise noted

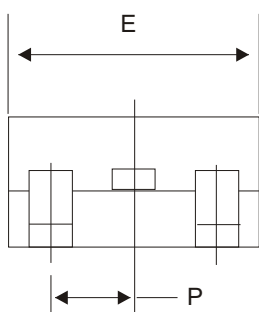
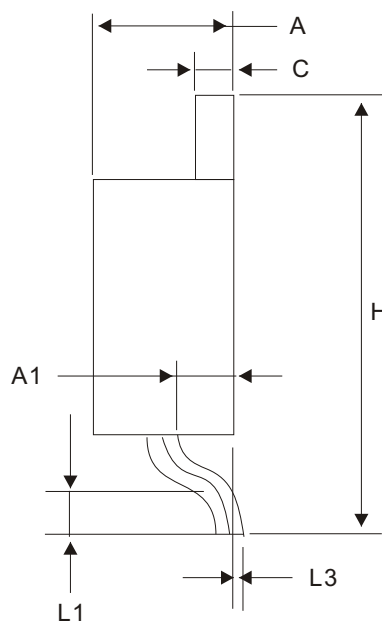
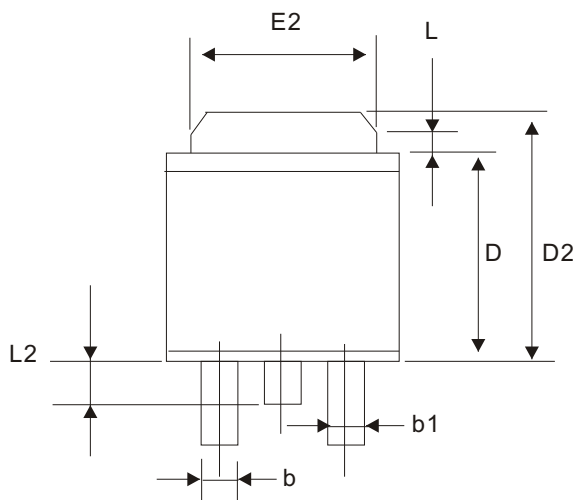
SOT-223



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TO-252



SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.250	2.350	0.089	0.093
A1	0.950	1.050	0.037	0.041
C	0.490	0.530	0.019	0.021
E	6.400	6.600	0.252	0.260
E2	5.300	5.450	0.209	0.215
D	6.000	6.200	0.236	0.244
D2	7.100	7.300	0.280	0.287
H	9.700	10.100	0.382	0.398
L	0.600	Ref	0.024	Ref
L1	1.425	1.625	0.056	0.064
L2	0.650	0.850	0.026	0.033
L3	0.020	0.120	0.001	0.005
b	0.770	0.850	0.030	0.033
b1	0.840	0.940	0.033	0.037
P	2.290	BSC	0.090	BSC

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TO-263

