Three-Terminal Positive Voltage Regulator

LM78L10

SOT-89   Unit:mm

4.50±0.1
1.70±0.1
1.50 ±0.1
2.50±0.1
4.00±0.1
1 2 3
0.42±0.1   0.46±0.1
0.80±0.1
0.4±0.1

3.00±0.1

1.OUT
2.GND
3.IN
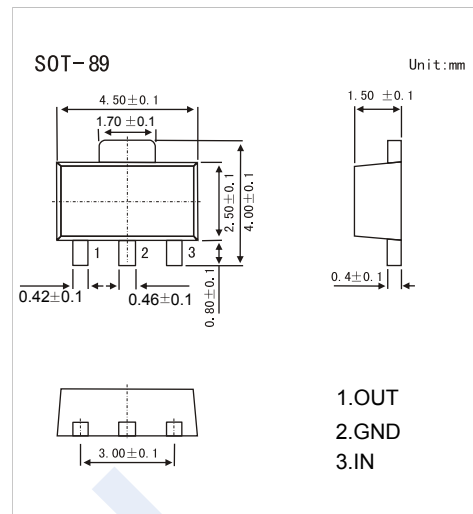
■ Features

● Maximum Output current I_O: 0.1A

● Output Voltage V_O: 10V

● Continuous Total Dissipation P_D: 0.5W (T_a = 25℃)

■ Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Rating	Unit
Input Voltage	V_I	30	V
Operating Junction Temperature Range	T_{OPR}	-55 ～ +125	℃
Storage Temperature Range	T_{STG}	-55 ～ +150	℃

■ Electrical Characteristics (V_I=17V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_O	T_J = 25℃	9.6	10	10.4	V
		T_J = 0～125℃, 13V≤V_I≤25V, I_O=1mA～40mA	9.5	10	10.5	V
		T_J = 0～125℃, I_O=1mA～70mA	9.5	10	10.5	V
Load Regulation	$\triangle V_O$	T_J = 25℃, I_O=1mA～100mA		20	90	mV
		T_J = 25℃, I_O=1mA～40mA		11	40	mV
Line Regulation	$\triangle V_O$	T_J = 25℃, 13V≤V_I≤25V		51	175	mV
		T_J = 25℃, 14V≤V_I≤25V		42	125	mV
Quiescent Current	I_Q	T_J = 25℃		4.2	6.0	mA
Quiescent current Change	$\triangle I_Q$	T_J = 0～125℃, 14V≤V_I≤25V			1.5	mA
		T_J = 0～125℃, 1mA≤I_O≤40mA			0.1	
Output Noise Voltage	V_N	T_J = 25℃, 10Hz≤f≤100KHz		62		μV
Ripple Rejection	RR	T_J = 0～125℃, 15V≤V_I≤25V, f = 120Hz	37	44		dB
Dropout Voltage	V_D	T_J = 25℃		1.7		V

■ Typical Application

V_I 3   LM78L10   1 V_O

C_I 2 C_O
0.33μF   0.1μF
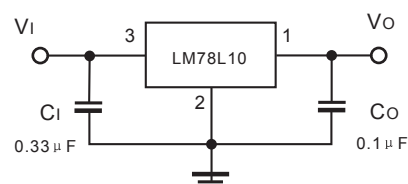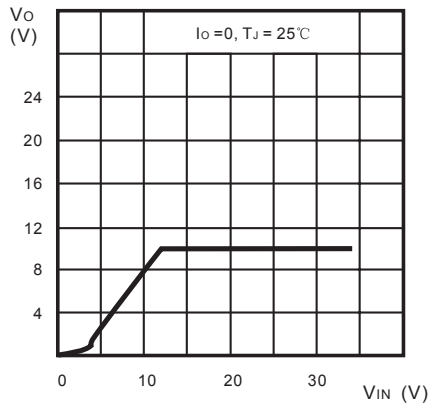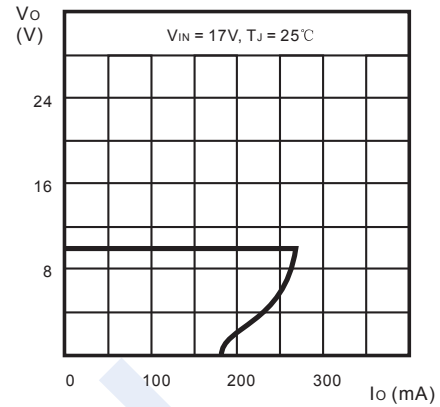
Note:Bypass capacitors are recommended
for optimum stability and transient
response and should be located as
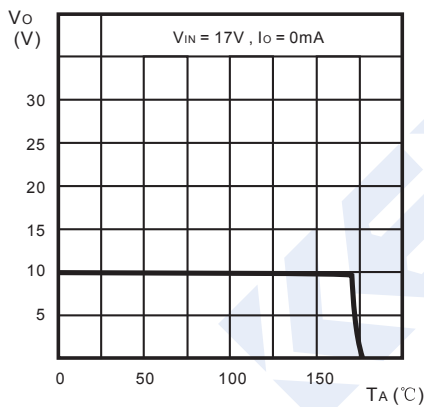close as possible to the regulators.
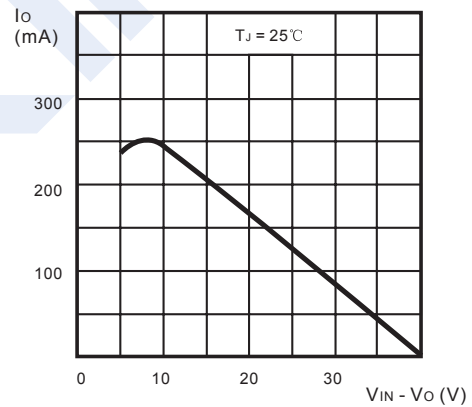
LM78L10

■ Typical Characteristics
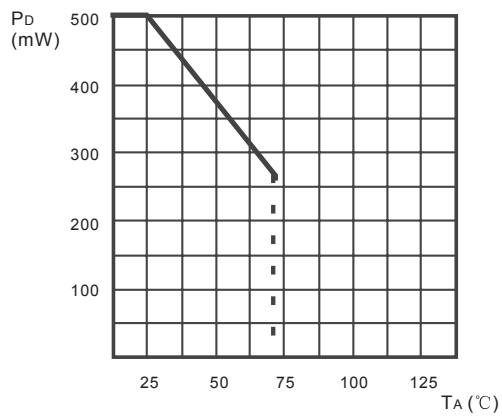
Output Characteristics

Load Characteristics

Thermal Shutdown

Short Circuit Output Current

Power Dissipation vs. Ambient Temperature