Three-Terminal Positive Voltage Regulator

LM78L06

SOT-89   Unit: mm

1.OUT
2.GND
3.IN
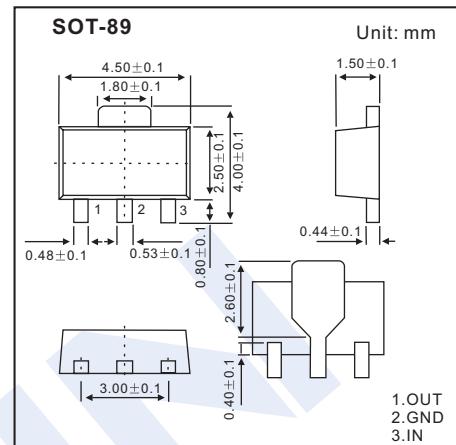
■ Features

● Maximum Output current Io: 0.1A

● Output Voltage Vo: 6V

● Continuous Total Dissipation PD: 0.5W (Ta = 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=12V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified)

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Output Voltage	V_O	T_J = 25℃	5.75	6.0	6.25	V
		T_J = 0～125℃, 8V≤V_I≤20V, Io=1mA～40mA	5.7	6.0	6.3	V
		T_J = 0～125℃, Io=1mA～70mA	5.7	6.0	6.3	V
Load Regulation	△V_O	T_J = 25℃, Io=1mA～100mA		16	80	mV
		T_J = 25℃, Io=1mA～40mA		9	40	mV
Line Regulation	△V_O	T_J = 25℃, 8V≤V_I≤20V		35	175	mV
		T_J = 25℃, 9V≤V_I≤20V		29	125	mV
Quiescent Current	I_Q	T_J = 25℃		3.9	6.0	mA
Quiescent current Change	△I_Q	T_J = 0～125℃, 9V≤V_I≤20V			1.5	mA
		T_J = 0～125℃, 1mA≤Io≤40mA			0.1	
Output Noise Voltage	V_N	T_J = 25℃, 10Hz≤f≤100KHz		16		μV
Ripple Rejection	RR	T_J = 0～125℃, 9V≤V_I≤19V, f = 120Hz	40	48		dB
Dropout Voltage	V_D	T_J = 25℃		1.7		V

■ Typical Application
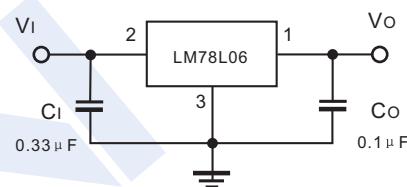
Note:Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

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■ Typical Characteristics

V$_O$ (V), I$_O$ = 0, T$_J$ = 25℃, V$_{IN}$ (V)
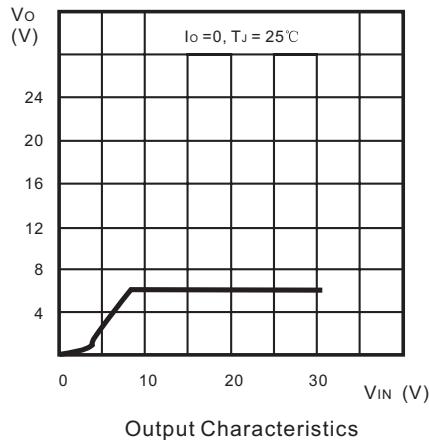
Output Characteristics

V$_O$ (V), V$_{IN}$ = 12V, T$_J$ = 25℃, I$_O$ (mA)

Load Characteristics

V$_O$ (V), V$_{IN}$ = 12V , I$_O$ = 0mA, T$_A$ (℃)

Thermal Shutdown

I$_O$ (mA), T$_J$ = 25℃, V$_{IN}$ - V$_O$ (V)
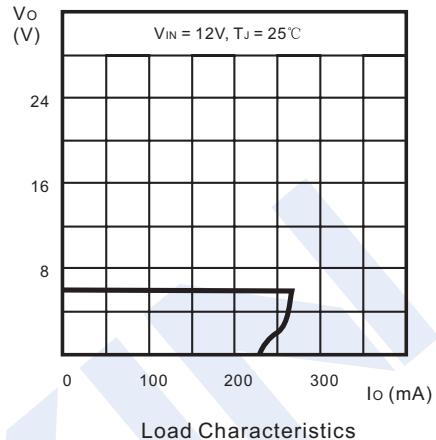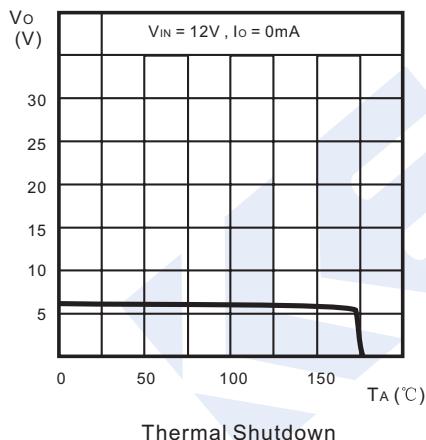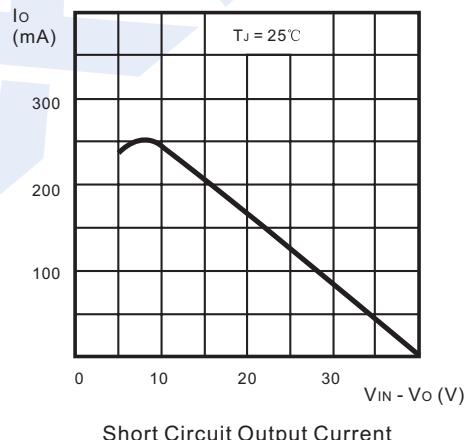
Short Circuit Output Current

P$_D$ (mW), T$_A$ (℃)
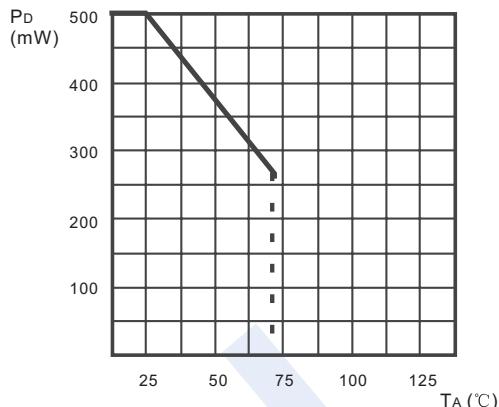
Power Dissipation vs. Ambient Temperature