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**78L06** Three-terminal positive voltage regulator

TO-92 Encapsulate Three Terminal Voltage Regulator

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客户确认：

公司签章：

部门	工程部	品保部	采购部
签名			
日期			



TO-92 Encapsulate Three-terminal Voltage Regulator

**78L06** Three-terminal positive voltage regulator

**FEATURES**

Maximum Output current

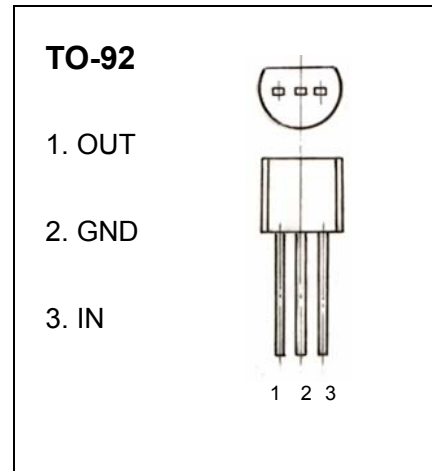
$$I_{OM}: 0.1 \text{ A}$$

Output voltage

$$V_o: 6 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55^\circ\text{C to } +150^\circ\text{C}$$



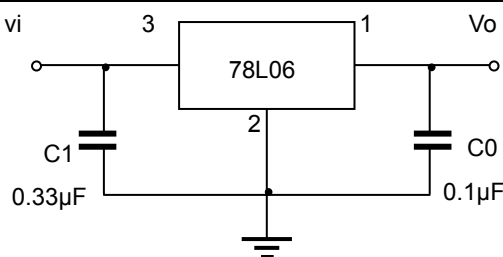
**ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)**

Parameter Symbol		Value	Units
Input Voltage	$V_I$	30	V
Operating Junction Temperature Range	$T_{OPR}$	0~+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~+150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $V_I=11\text{V}, I_o=40\text{mA}, 0^\circ\text{C}<T_J<125^\circ\text{C}, C_1=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified)**

Parameter Sy	mbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_o$	$T_J=25^\circ\text{C}$	5.75	6.0	6.25	V
		$8\text{V}\leq V_I\leq 20\text{V}, I_o=1\text{mA}\sim 40\text{mA}$	5.7	6.0	6.3	V
		$8\text{V}\leq V_I\leq V_{MAX}, I_o=1\text{mA}\sim 70\text{mA}$	5.7	6.0	6.3	V (note)
Load Regulation	$\Delta V_o$	$T_J=25^\circ\text{C}, I_o=1\text{mA}\sim 100\text{mA}$		16	80	mV
		$T_J=25^\circ\text{C}, I_o=1\text{mA}\sim 40\text{mA}$		9	40	mV
Line regulation	$\Delta V_o$	$8\text{V}\leq V_I\leq 20\text{V}, T_J=25^\circ\text{C}$		35	175	mV
		$9\text{V}\leq V_I\leq 20\text{V}, T_J=25^\circ\text{C}$		29	125	mV
Quiescent Current	$I_q$			3.9	6.0	mA
Quiescent Current Change	$\Delta I_q$	$9\text{V}\leq V_I\leq 20\text{V}$			1.5	mA
	$\Delta I_q$	$1\text{mA}\leq V_I\leq 40\text{mA}$			0.1	mA
Output Noise Voltage	$V_N$	$10\text{Hz}\leq f\leq 100\text{KHz}$		46		$\mu\text{V}$
Ripple Rejection	RR	$9\text{V}\leq V_I\leq 19\text{V}, f=120\text{HZ}, T_J=25^\circ\text{C}$	40	48		dB
Dropout Voltage	$V_d$	$T_J=25^\circ\text{C}$		1.7		V

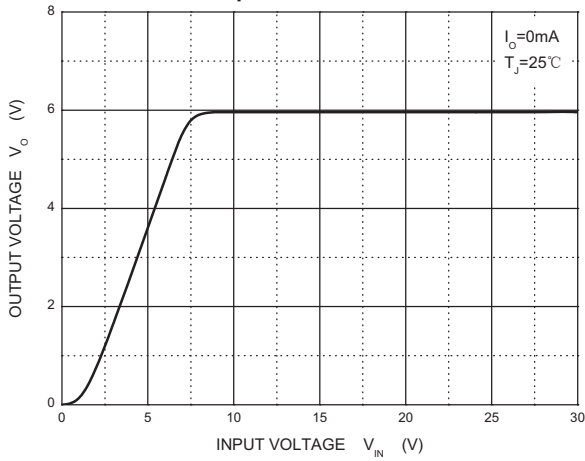
**TYPICAL APPLICATION**



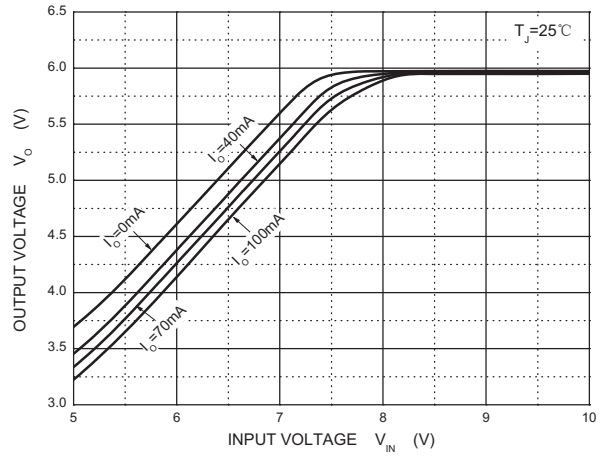
Note 1: Bypass capacitors are recommended for optimum stability and transient response and should be located as close possible to the regulators.

# Typical Characteristics

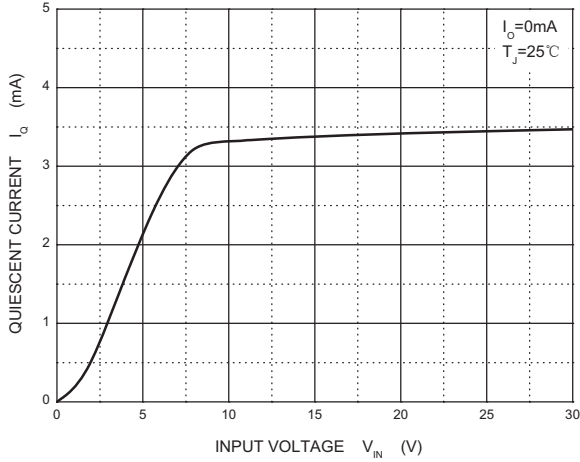
**Output Characteristics**



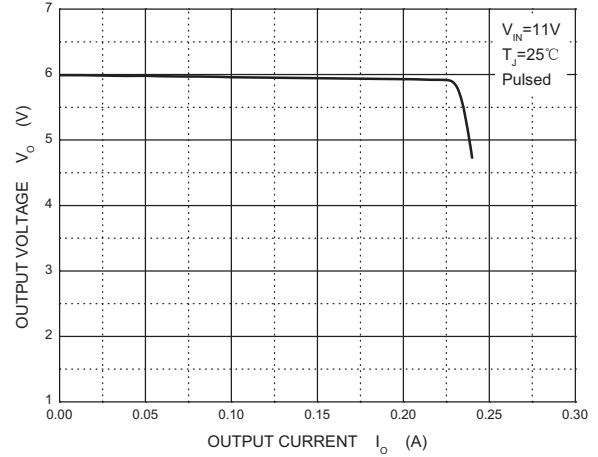
**Dropout Characteristics**



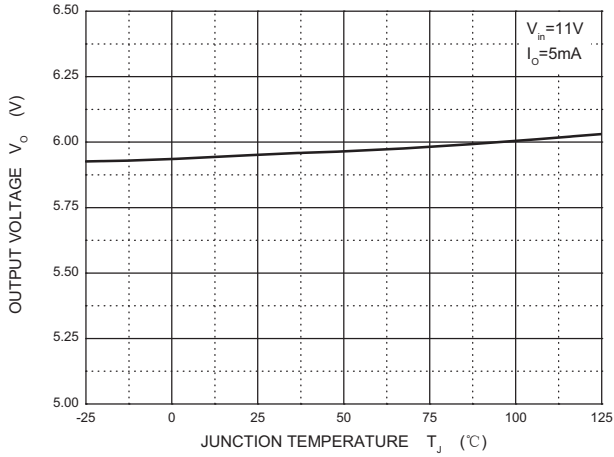
**Quiescent Current**



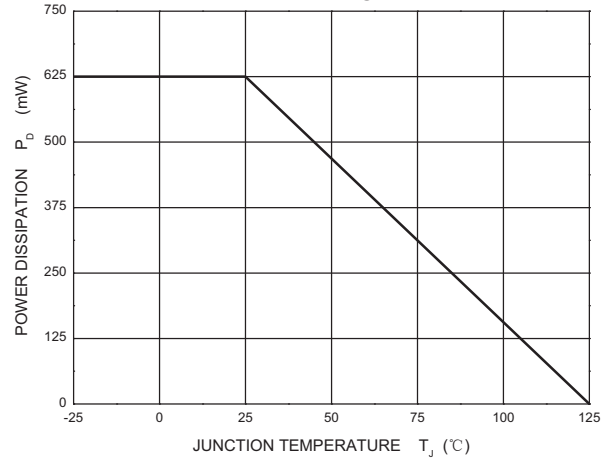
**Current Cut-off Grid Voltage**



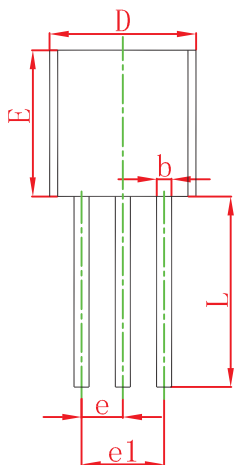
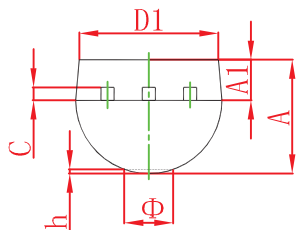
**Output Voltage vs Junction Temperature**



**Power Derating Curve**

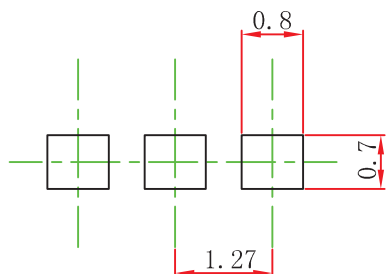


## TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

## TO-92 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.