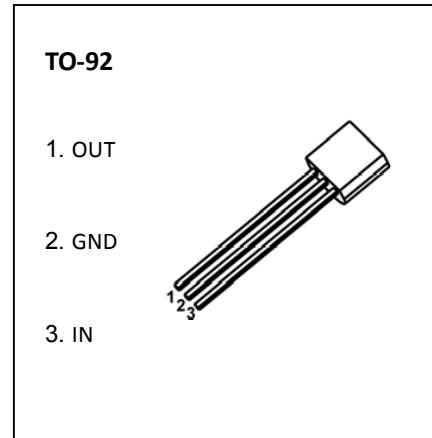


TO-92 Plastic-Encapsulate Voltage Regulators

■ Features

- Maximum Output Current I_o : 0.1 A
- Output Voltage V_o : 5 V
- Continuous Total Dissipation
 P_D : 0.6 W ($T_a = 25\text{ }^\circ\text{C}$)



■ Absolute Maximum Ratings

(Operating temperature range applies unless otherwise specified)

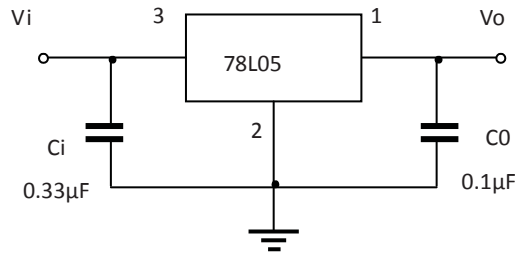
Parameter	Symbol	Value	Unit
Input Voltage	V_I	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	TOPR	-40~+125	$^\circ\text{C}$
Storage Temperature Range	TSTG	-65~+150	$^\circ\text{C}$

■ Electrical Characteristics at Specified Virtual Junction Temperature

($V_i=10\text{V}$, $I_o=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output voltage	V_o	25°C	4.8	5.0	5.2	V	
		$7\text{V} \leq V_i \leq 20\text{V}$, $I_o=1\text{mA} \sim 40\text{mA}$	$0 \sim 125^\circ\text{C}$	4.75	5.0	5.25	V
			$I_o=1\text{mA} \sim 70\text{mA}$	4.75	5.0	5.25	V
Load Regulation	ΔV_o	$I_o=1\text{mA} \sim 100\text{mA}$, 25°C		15	60	mV	
		$I_o=1\text{mA} \sim 40\text{mA}$, 25°C		8	30	mV	
Line regulation	ΔV_o	$7\text{V} \leq V_i \leq 20\text{V}$		32	150	mV	
		$8\text{V} \leq V_i \leq 20\text{V}$, 25°C		26	100	mV	
Quiescent Current	I_q	25°C		3.8	6	mA	
Quiescent Current Change	ΔI_q	$8\text{V} \leq V_i \leq 20\text{V}$, $0 \sim 125^\circ\text{C}$			1.5	mA	
	ΔI_q	$1\text{mA} \leq I_o \leq 40\text{mA}$, $0 \sim 125^\circ\text{C}$			0.1	mA	
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, 25°C		42		μV	
Ripple Rejection	RR	$8\text{V} \leq V_i \leq 20\text{V}$, $f=120\text{Hz}$, $0 \sim 125^\circ\text{C}$	41	49		dB	
Dropout Voltage	V_d	25°C		1.7		V	

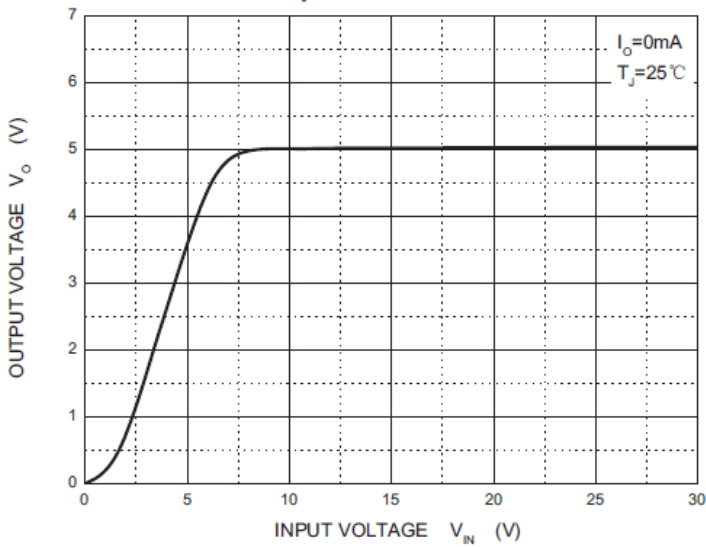
■ Typical Application



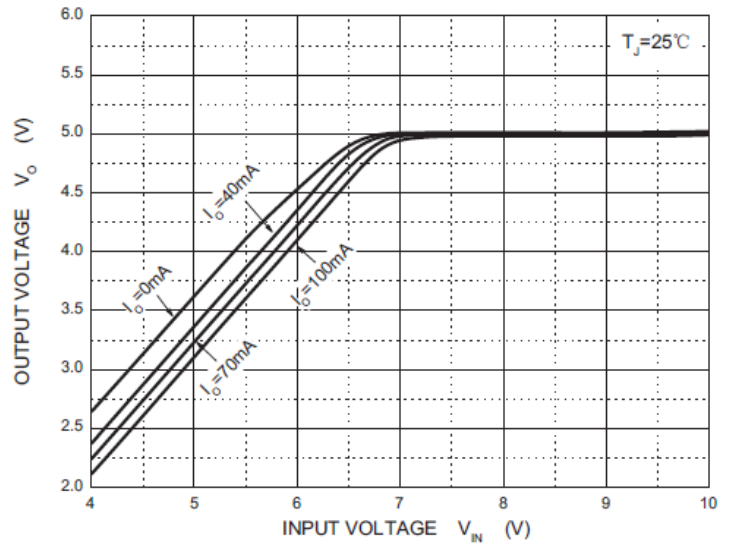
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

■ Typical Characteristics

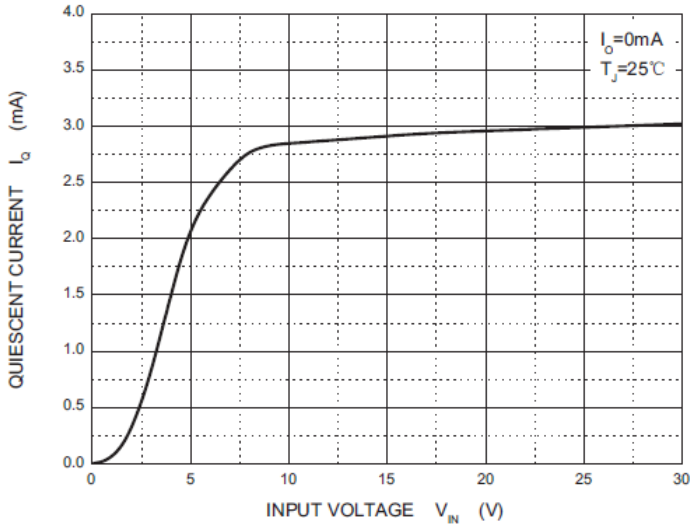
Output Characteristics



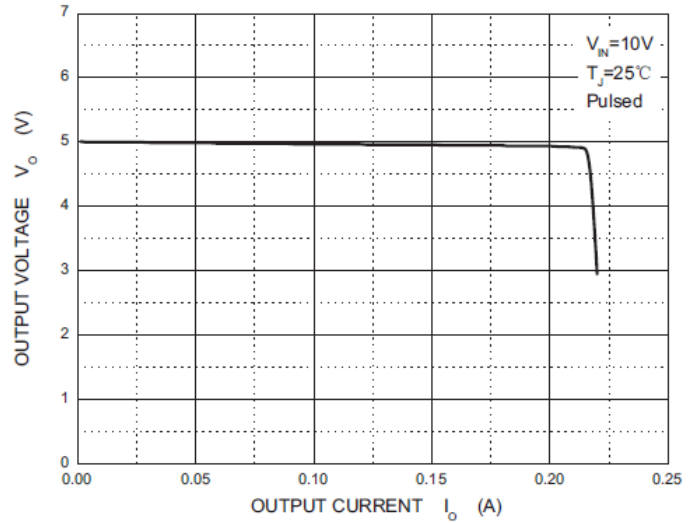
Dropout Characteristics

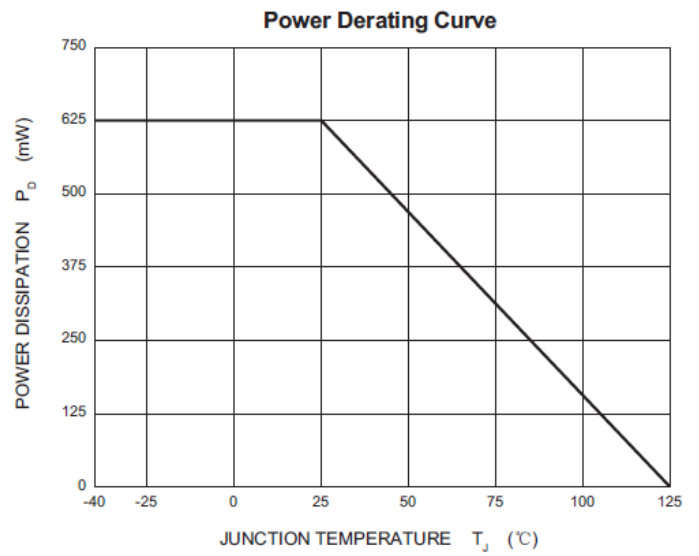
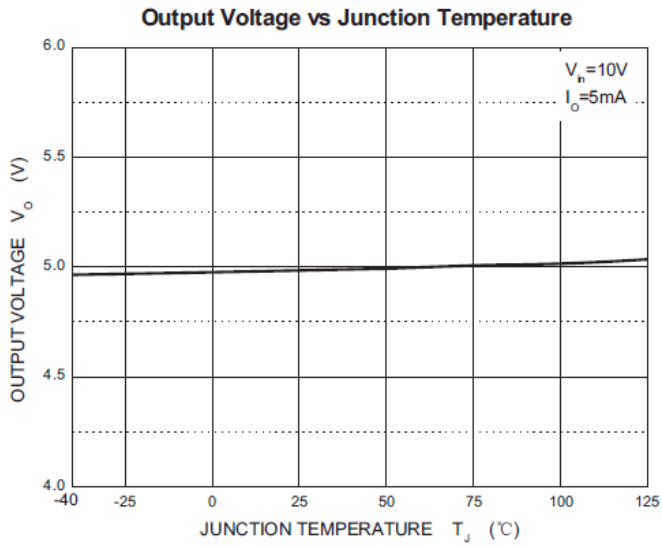
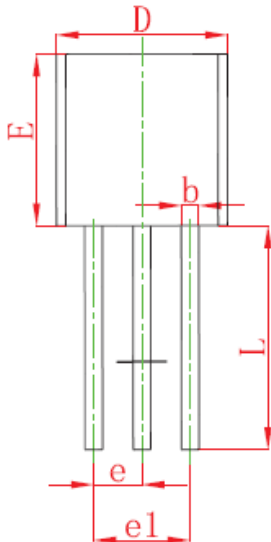
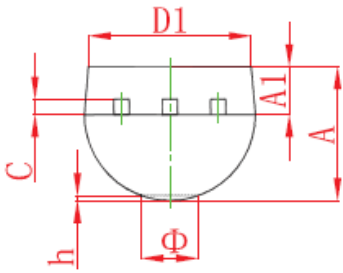


Quiescent Current vs Input Voltage

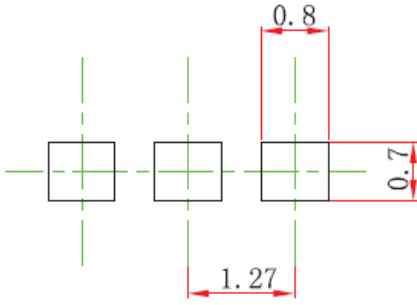


Current Cut-off Grid Voltage



Typical Characteristics

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.