

TO-92 Encapsulate Three-terminal Voltage Regulator

CJ78L05 Three-terminal positive voltage regulator

FEATURES

Maximum Output Current I_O : 0.1 A

Output Voltage V_O : 5 V

Continuous Total Dissipation

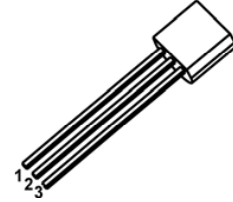
P_D : 0.625W ($T_a=25^\circ\text{C}$)

TO-92

1. OUT

2. GND

3. IN



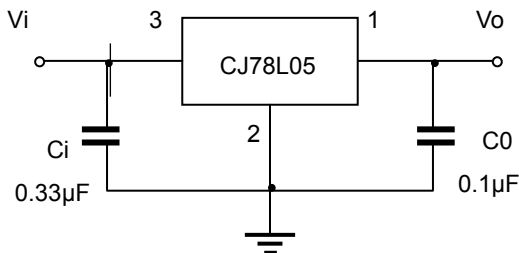
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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

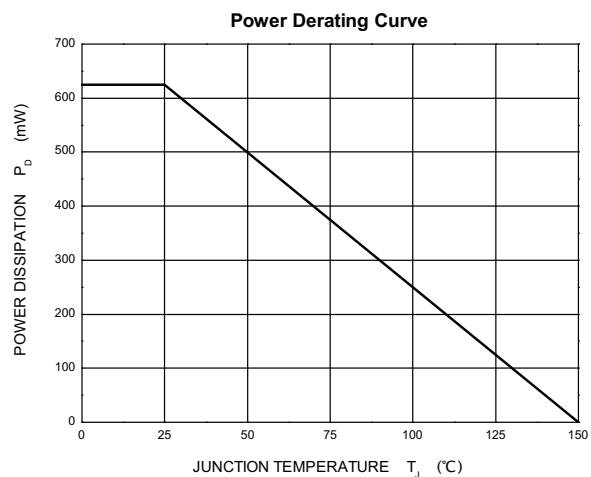
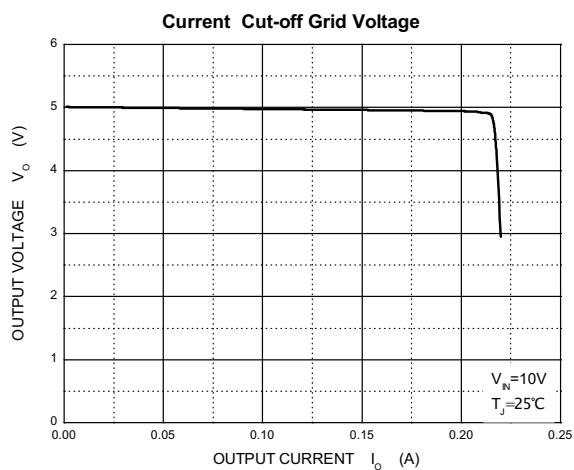
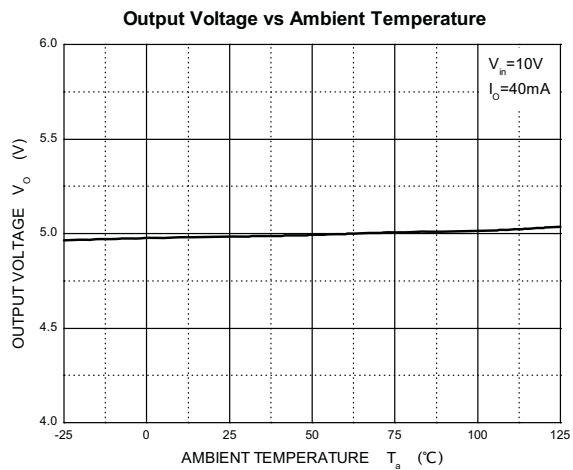
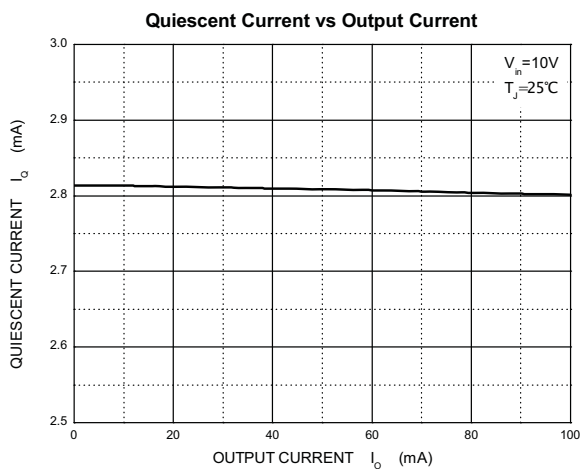
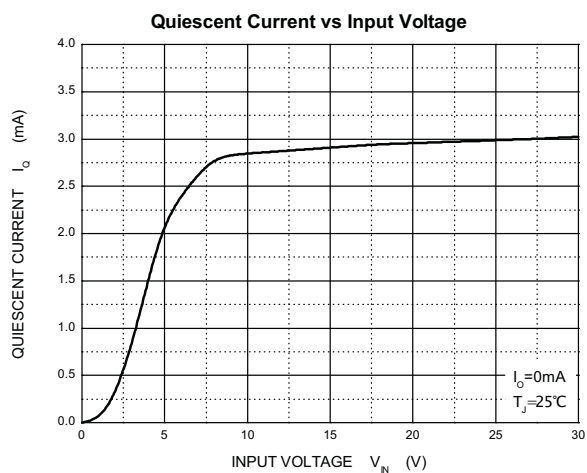
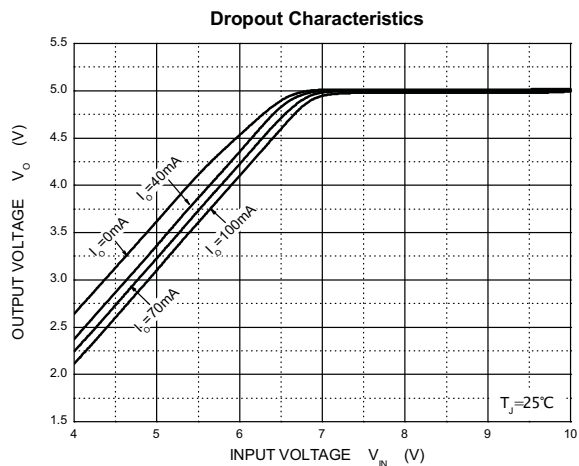
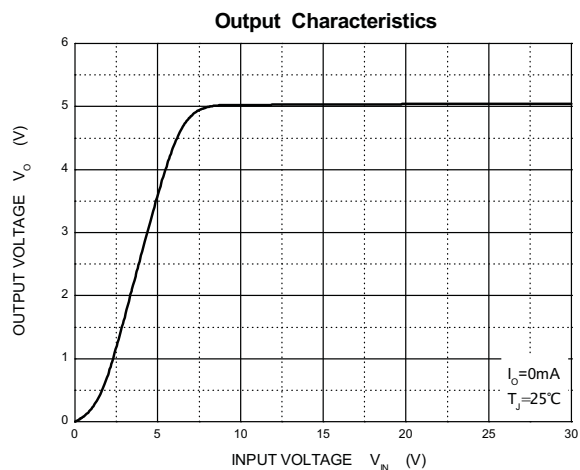
Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output voltage	V_O		25 $^\circ\text{C}$	4.8	5.0	5.2	V
		7V $\leq V_I \leq 20\text{V}$, $I_O=1\text{mA} \sim 40\text{mA}$	0-125 $^\circ\text{C}$	4.75	5.0	5.25	V
		$I_O=1\text{mA} \sim 70\text{mA}$		4.75	5.0	5.25	V
Load Regulation	ΔV_O	$I_O=1\text{mA}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

TYPICAL APPLICATION

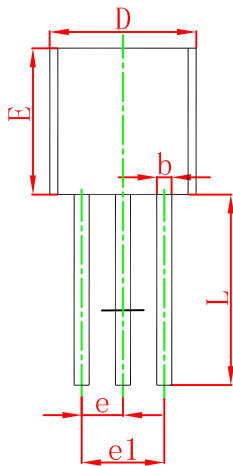
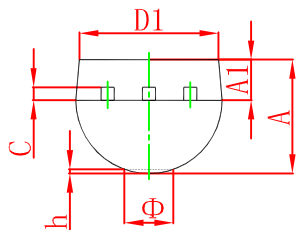


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

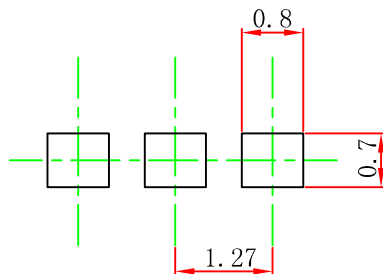


TO-92 Package Outline Dimensions



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

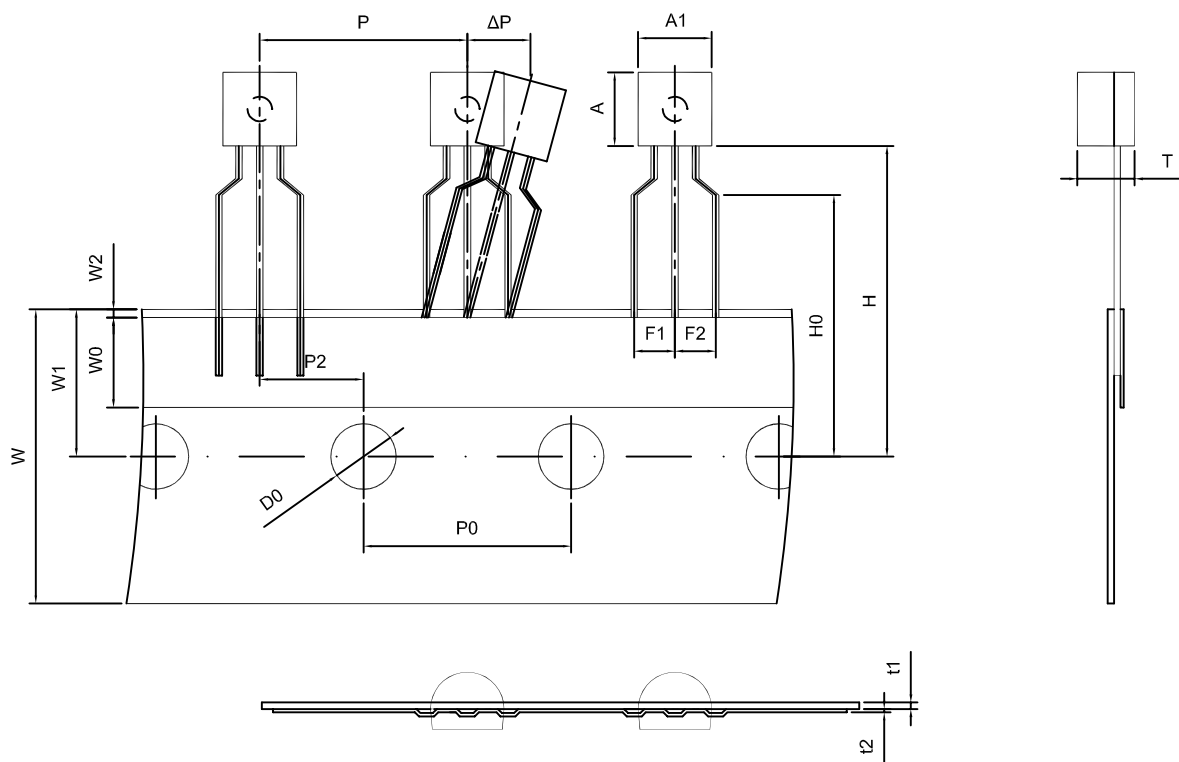


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

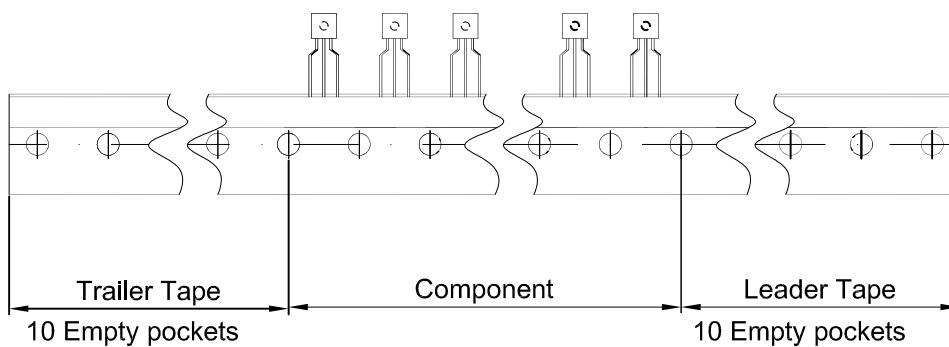
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TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.5±0.2	4.5±0.2	3.5±0.2	12.7±0.3	12.7±0.2	6.35±0.3	2.5±0.3	2.5±0.3	18.0+1.0/-0.5
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0±0.5	9.0±0.5	1.0 MAX.	19.0±1.0	16.0±0.5	4.0±0.5	0.4±0.05	0.2±0.05	0 ± 1.0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250