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78L05 Three-terminal positive voltage regulator

SOT-89 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			

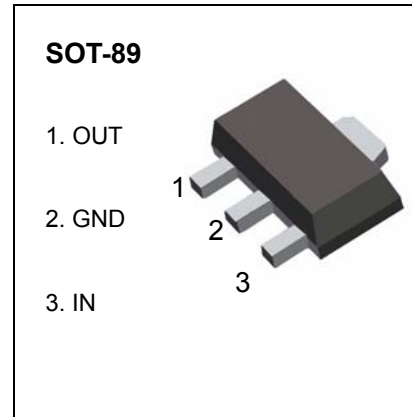


SOT-89 Encapsulate Three Terminal Voltage Regulator

78L05 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 : 0.5 W ($T_a = 25^\circ\text{C}$)



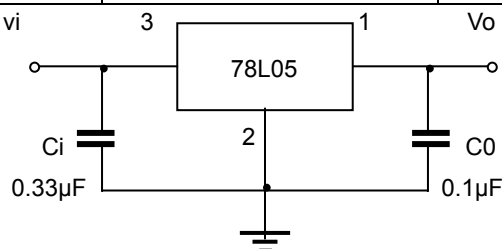
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=10V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

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

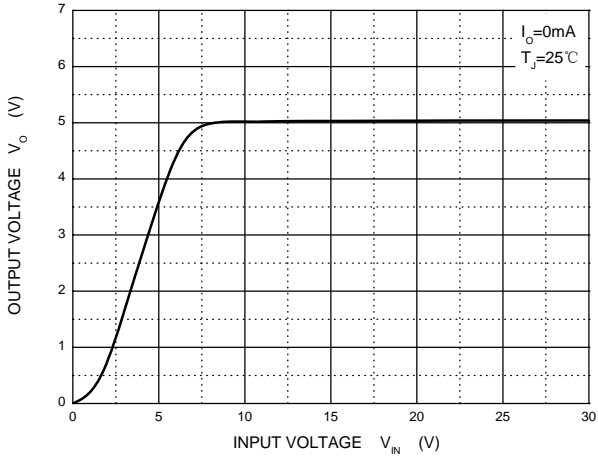
TYPICAL APPLICATION



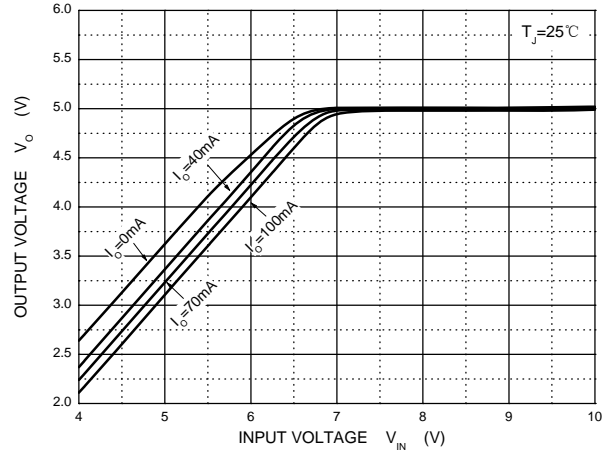
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

Typical Characteristics

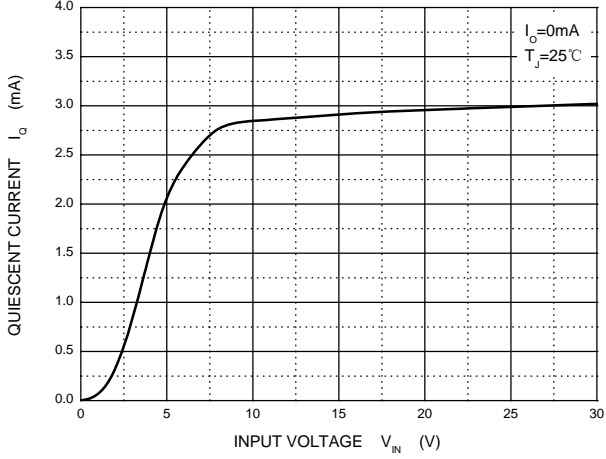
Output Characteristics



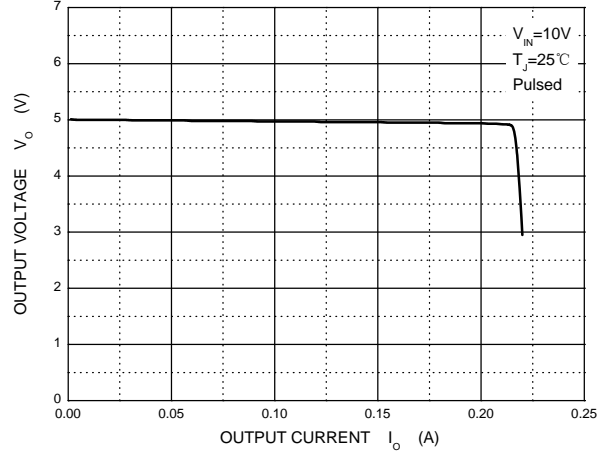
Dropout Characteristics



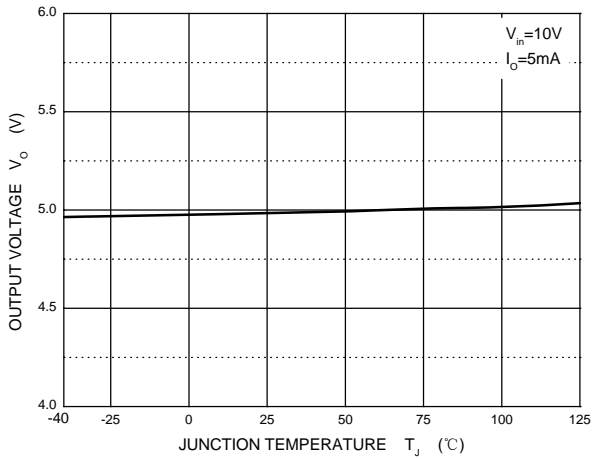
Quiescent Current vs Input Voltage



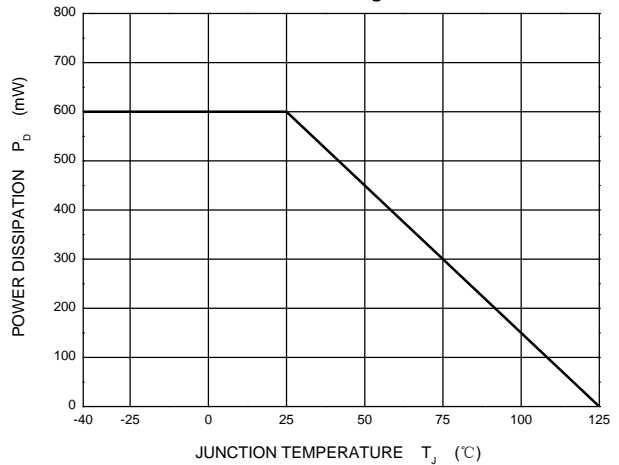
Current Cut-off Grid Voltage



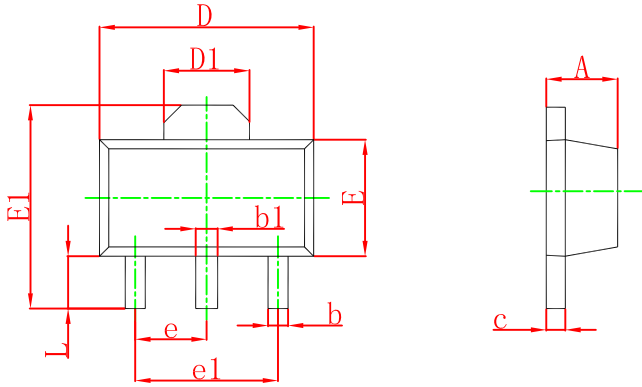
Output Voltage vs Junction Temperature



Power Derating Curve

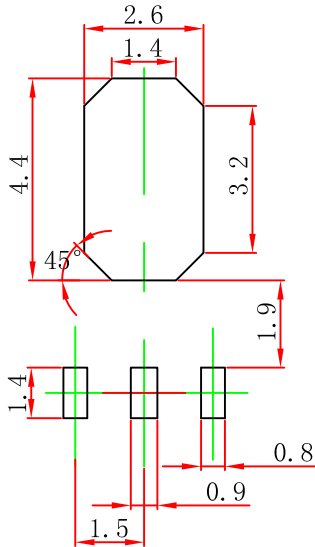


SOT-89-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT-89-3L 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.