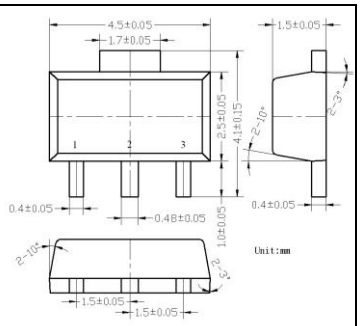
HUIZHOU JINSANE ELECTRONICS CO., LTD

SOT-89 Encapsulate Three Terminal Voltage Regulators

78L05 Three-terminal positive voltage regulator



1. OUT
2. GND
3. IN

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 ℃)

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	℃
Storage Temperature Range	T_{STG}	-55~+150	℃

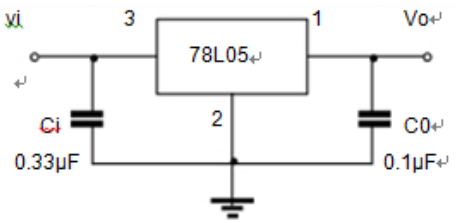
ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (Vi=10V,Io=40mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Characteristic	Symbol	Test conditions		Min	Typ	Max	Unit
7V≤Vi ≤20V, Io=1mA-40mA	V_O	Vi=10V,Io=40mA	25℃	4.95	5.0	5.05	V
		7V≤Vi ≤20V, Io=1mA-40mA	0-125℃	4.75	5.0	5.25	V
		Io=1mA-70mA		4.75	5.0	5.25	V
Load Regulation	ΔV_O	Io=1mA-100mA	25℃		15	60	mV
		Io=1mA-40mA	25℃		8	30	mV
Line regulation	ΔV_O	7V≤V ≤20V			32	150	mV
		8V≤V I≤20V	25℃		26	100	mV
Quiescent Current	I_q		25℃		3.8	6	mA
Quiescent Current Change	ΔI_q	8V≤V ≤20V	0-125℃			1.5	mA
		1mA≤I_O≤40mA	0-125℃			0.1	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		42		uV
Ripple Rejection	RR	8V≤Vi ≤20V,f=120Hz	0-125℃	41	49		dB
Dropout Voltage	Vd		25℃		1.7		V

CLASSIFICATION of V_{OUT}:

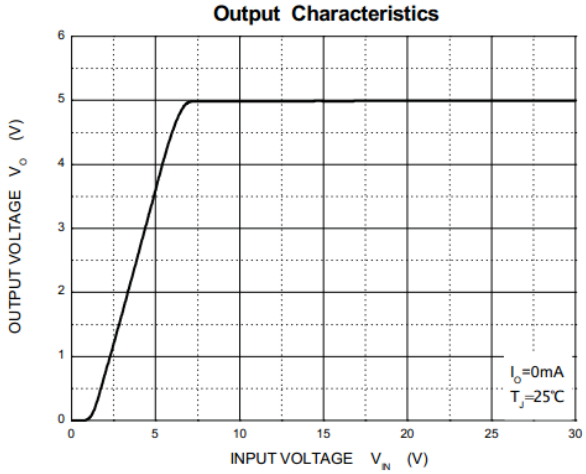
Rank	1%
Range	4.95-5.05

TYPICAL APPLICATION

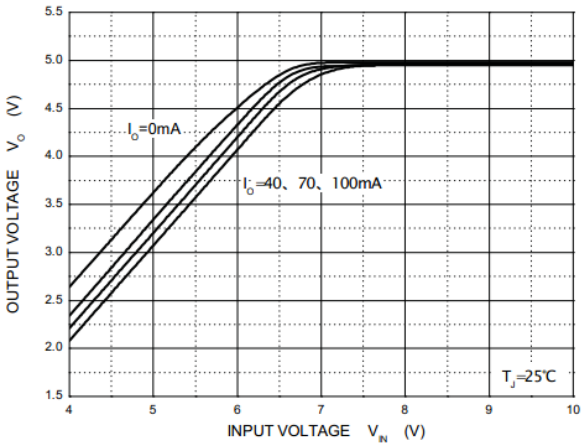


Typical Characterisitics 78L05

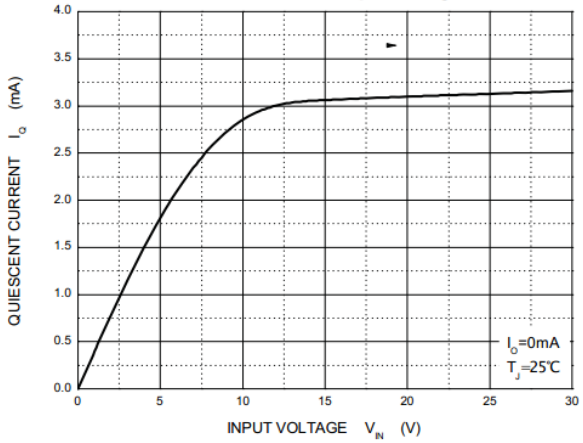
Output Characteristics



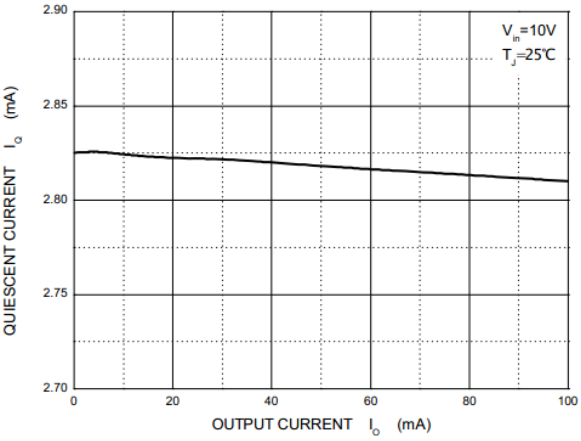
Dropout Characteristics



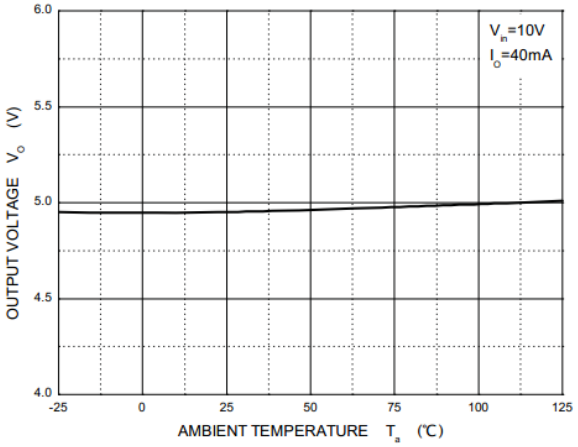
Quiescent Current vs Input Voltage



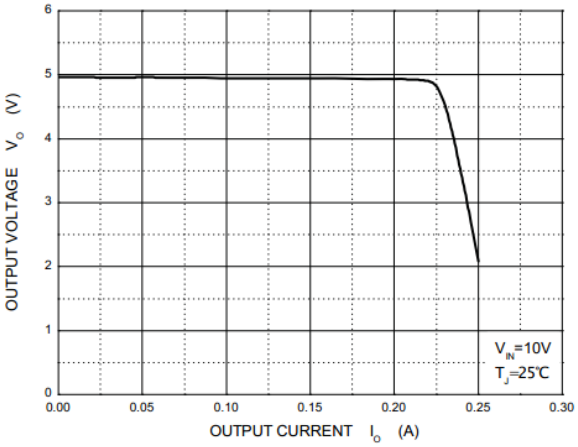
Quiescent Current vs Output Current

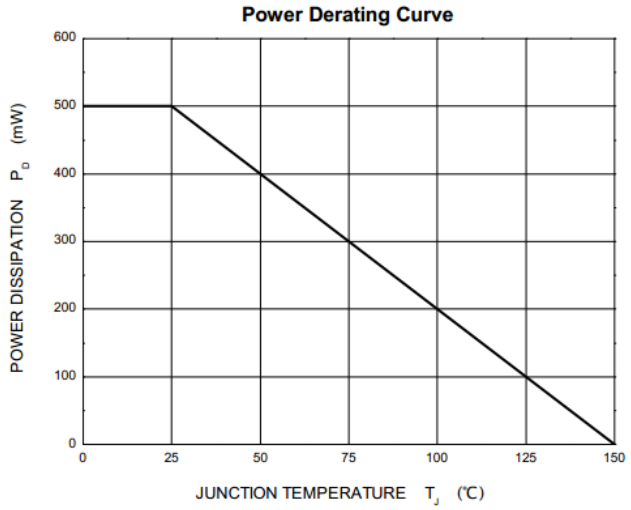


Output Voltage vs Ambient Temperature



Current Cut-off Grid Voltage




Power Derating Curve
POWER DISSIPATION P_D (mW)
600
500
400
300
200
100
0
0
25
50
75
100
125
150
JUNCTION TEMPERATURE T_J (℃)