# SHENZHEN HAOCHANG SEMICONDUCTOR CO.,LTD.

SOT-23 Encapsulate Three Terminal Voltage Regulator

78L05

● Features

● Maximum Output current Io: 0.1A

● Output Voltage Vo: 5V

● Continuous Total Dissipation P_D: 0.35W (T_a = 25℃)

SOT-23   Unit: mm

1.OUT
2.IN
3.GND
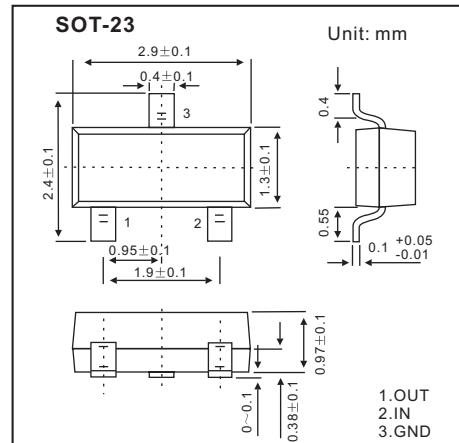
■ Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Rating	Unit
Input Voltage	V_I	30	V
Operating Junction Temperature Range	T_{OPR}	-55 ～ +125	℃
Storage Temperature Range	T_{STG}	-55 ～ +150	℃

■ Electrical Characteristics (V_I=10V, I_O=40mA, C_I=0.33μF, C_O=0.1μF, unless otherwise specified)

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Output Voltage	V_O	T_J = 25℃	4.8	5.0	5.2	V
		T_J = 0～125℃, 7V≤V_I≤20V, I_O=1mA～40mA	4.75	5.0	5.25	V
		T_J = 0～125℃, I_O=1mA～70mA	4.75	5.0	5.25	V
Load Regulation	△V_O	T_J = 25℃, I_O=1mA～100mA		15	60	mV
		T_J = 25℃, I_O=1mA～40mA		8	30	mV
Line Regulation	△V_O	7V≤V_I≤20V		32	150	mV
		T_J = 25℃, 8V≤V_I≤20V		26	100	mV
Quiescent Current	I_Q	T_J = 25℃		3.8	6	mA
Quiescent current Change	△I_Q	T_J = 0～125℃, 8V≤V_I≤20V			1.5	mA
		T_J = 0～125℃, 1mA≤I_O≤40mA			0.1	
Output Noise Voltage	V_N	T_J = 25℃, 10Hz≤f≤100KHz		42		μV
Ripple Rejection	RR	T_J = 0～125℃, 8V≤V_I≤20V, f = 120Hz	41	49		dB
Dropout Voltage	V_D	T_J = 25℃		1.7		V

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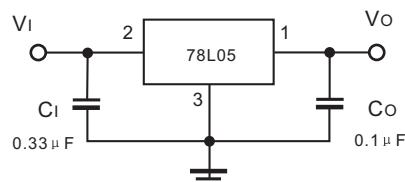
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

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■ Typical Characteristics
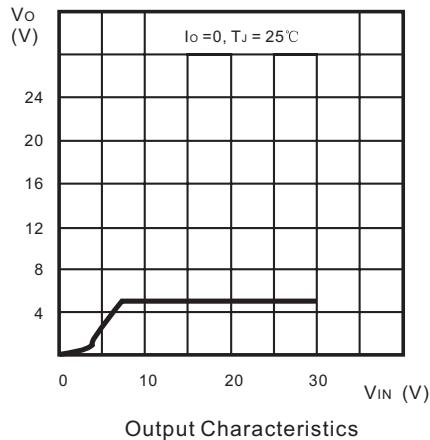
Output Characteristics
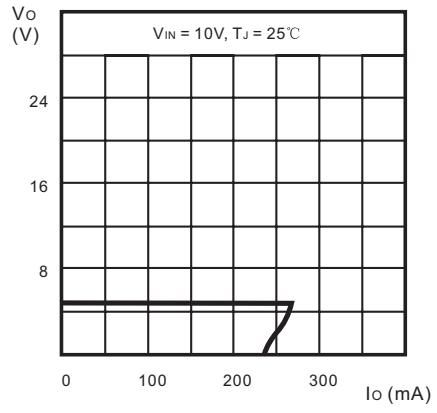
Load Characteristics
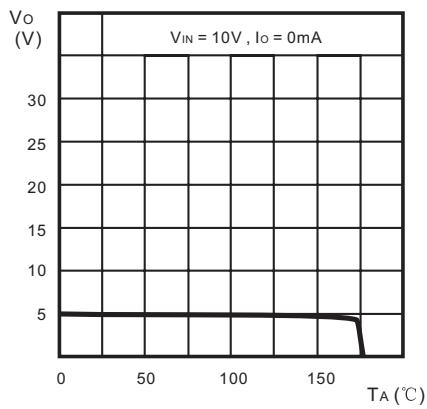
Thermal Shutdown
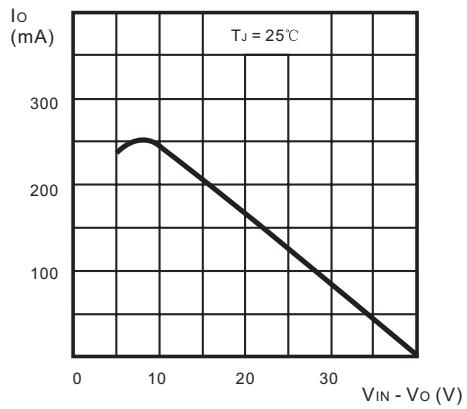
Short Circuit Output Current
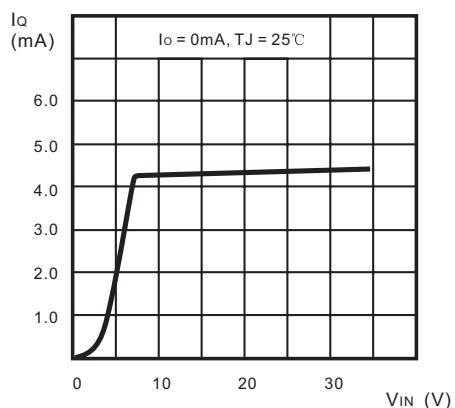
Quiescent Current vs Input Voltage