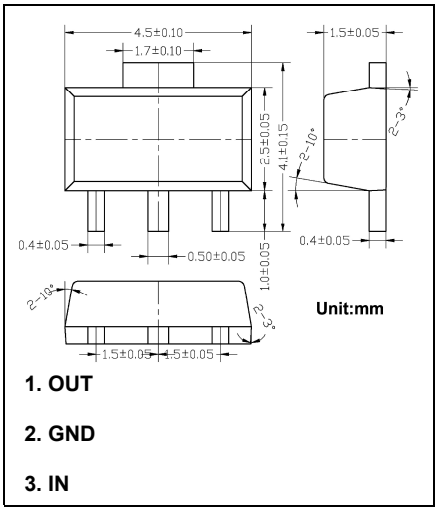
SHENZHEN LONG JING MICRO-ELECTRONICS CO., LTD.

SOT-89 Plastic-Encapsulate Regulators

78L05

Three-terminal positive voltage regulator



Features:

Maximum Output current I_{OM}: 0.1A

Output voltage V_O: 5V

Continuous total dissipation

P_D: 0.8W (T_a= 25°C)

Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

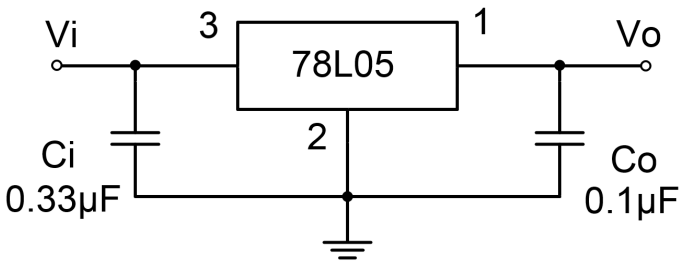
Symbol	Parameter	Value	Unit
V_I	Input Voltage	30	V
T_{OPR}	Operating Junction Temperature Range	-40 to +125	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

Electrical Characteristics at Specified Virtual Junction Temperature

(Vi=10V, Io=40mA, Ci=0.33μF, Co=0.1μF, unless otherwise specified)

Symbol	Parameter	Test conditions		Min	Typ	Max	Unit
Vo	Output Voltage		25°C	4.8	5.0	5.2	V
		7V≤ Vi ≤20V, I_O=1mA - 40mA	0-125°C	4.75	5.0	5.25	V
		I_O=1mA - 70mA		4.75	5.0	5.25	V
ΔVo	Load Regulation	I_O=1mA - 100mA	25°C		15	60	mV
		I_O=1mA - 40mA	25°C		8	30	mV
ΔVo	Line Regulation	7V≤ Vi ≤20V	25°C		32	150	mV
		8V≤ Vi ≤20V	25°C		26	100	mV
Iq	Quiescent Current		25°C		3.8	6	mA
ΔIq	Quiescent Current Change	8V≤ Vi ≤20V	0-125°C			1.5	mA
		1mA≤I_O≤40mA	0-125°C			0.1	mA
V_N	Output Noise Voltage	f =10Hz to 100KHz	25°C		42		μV
RR	Ripple Rejection	f =120Hz, 8V≤ V_i ≤20V	0-125°C	41	49		dB
Vd	Dropout Voltage		25°C		1.7		V

Typical Application

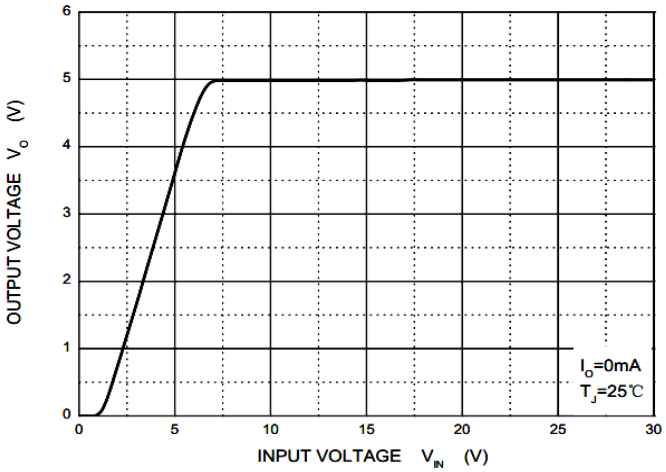


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

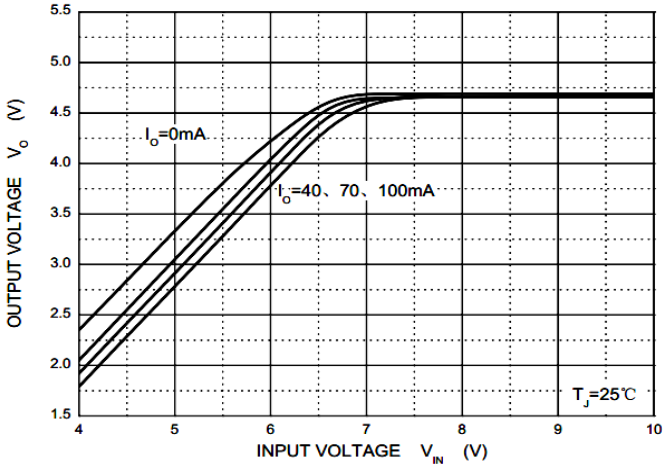
B Jun. 2015

Typical Characteristics

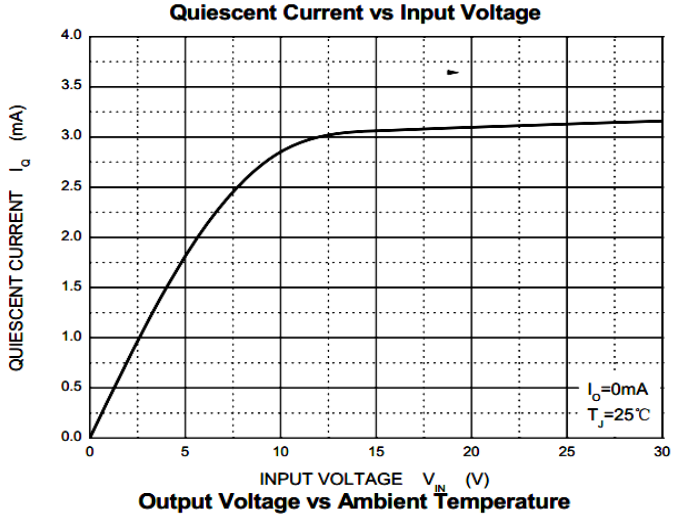
Output Characteristics



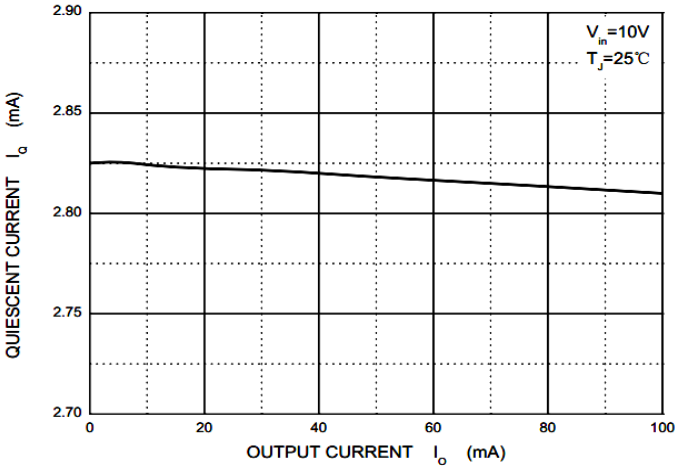
Dropout Characteristics



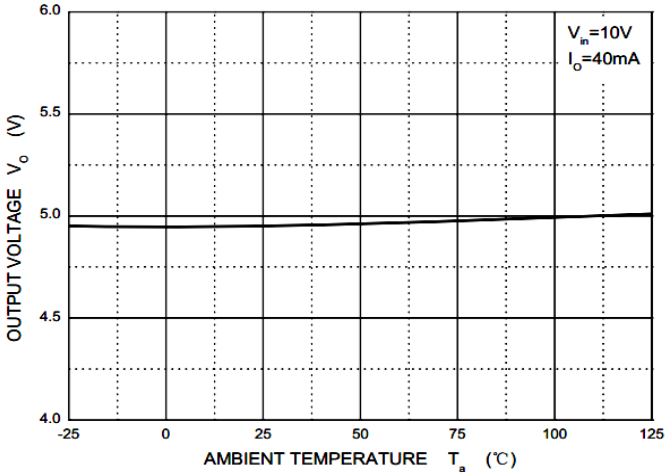
Quiescent Current vs Input Voltage



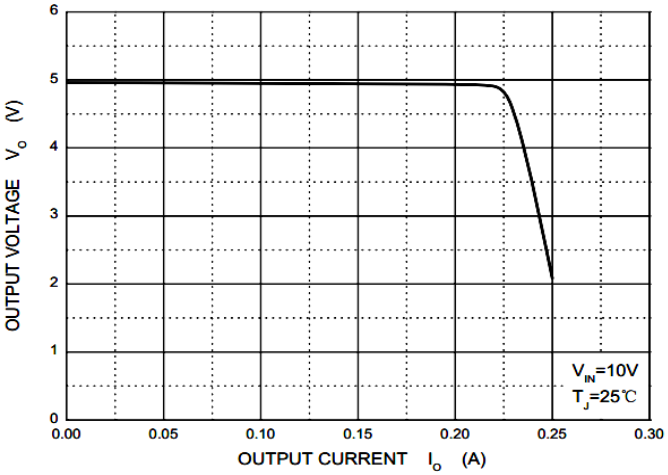
Quiescent Current vs Output Current



Output Voltage vs Ambient Temperature



Current Cut-off Grid Voltage



Power Derating Curve