蓝彩电子
BLUECOLOUR

SOT-23 D`UghWEncapsulate Voltage Regulators

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:0.35 W (Ta =25 ℃)

78L05

3

2

1

1.OUT

2.IN   SOT-23

3.GND

ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies)

Parameter	Symbol	Value	Unit
Input Voltage	V_I	30	V
Operating Junction Temperature Range	T_{OPR}	0-125	℃
Storage Temperature Range	T_{STG}	-65-150	℃

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

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output voltage	Vo		25℃	4.8	5.0	5.2	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	Vo	Io=1mA~100mA	25℃		15	60	mV
		Io=1mA~40mA	25℃		8	30	mV
Line regulation	Vo	7V Vi₁ 20V	25℃		32	150	mV
		8V Vi 20V	25℃		26	100	mV
Quiescent Current	Iq		25℃		3.8	6	mA
Quiescent Current Change	Iq	8V Vi 20V	0-125℃			1.5	mA
	Iq	1mA V₁ 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

* Pulse test.

TYPICAL APPLICATION

Vi   2   78L05   1   Vo

3

Ci
0.33μF

C0
0.1μF
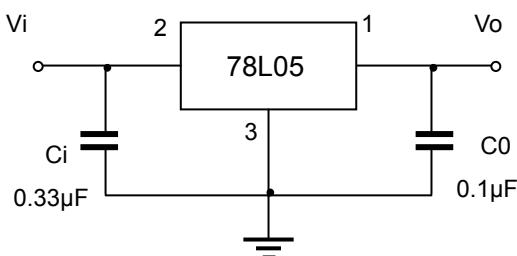
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as

Possible to the regulators.

## Typical Characteristics

Output Characteristics

$I_O=0mA$
$T_J=25℃$

OUTPUT VOLTAGE V_O (V)

INPUT VOLTAGE V_{IN} (V)

Dropout Characteristics

$T_J=25℃$

OUTPUT VOLTAGE V_O (V)

$I_O=40mA$
$I_O=0mA$
$I_O=70mA$
$I_O=100mA$
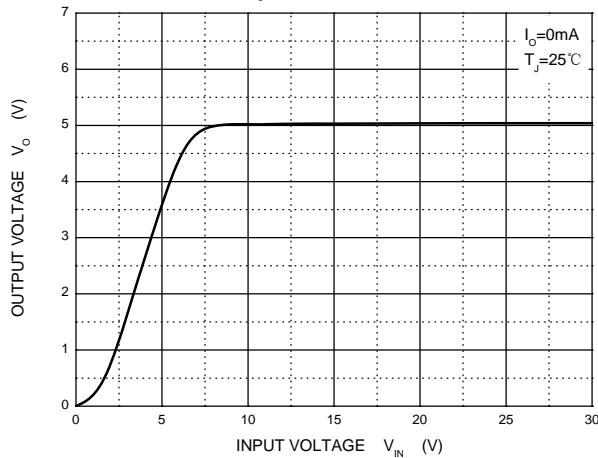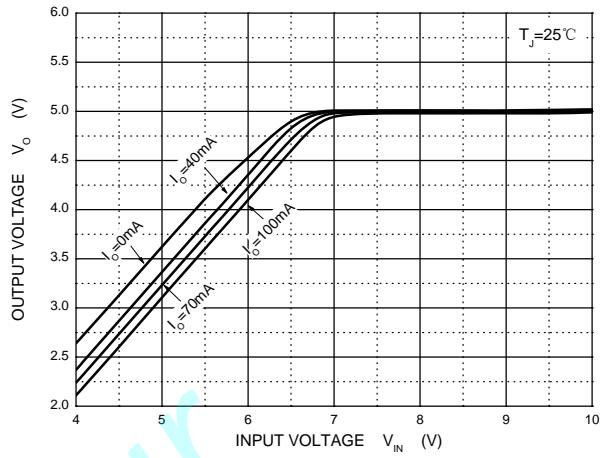
INPUT VOLTAGE V_{IN} (V)

Quiescent Current vs Input Voltage

$I_O=0mA$
$T_J=25℃$

QUIESCENT CURRENT I_Q (mA)
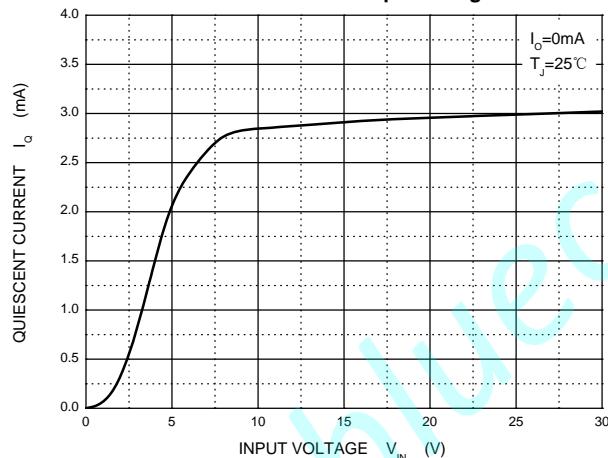
INPUT VOLTAGE V_{IN} (V)

Current Cut-off Grid Voltage

$V_{IN}=10V$
$T_J=25℃$
Pulsed

OUTPUT VOLTAGE V_O (V)

OUTPUT CURRENT I_O (A)
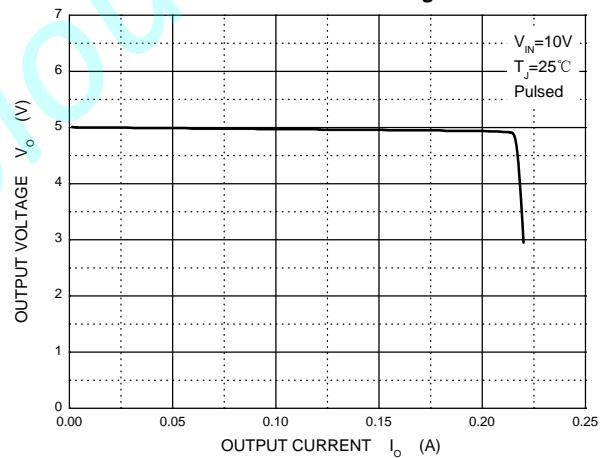
Output Voltage vs Junction Temperature

$V_{in}=10V$
$I_O=5mA$

OUTPUT VOLTAGE V_O (V)

JUNCTION TEMPERATURE T_J (℃)

Power Derating Curve

POWER DISSIPATION P_D (mW)

JUNCTION TEMPERATURE T_J (℃)
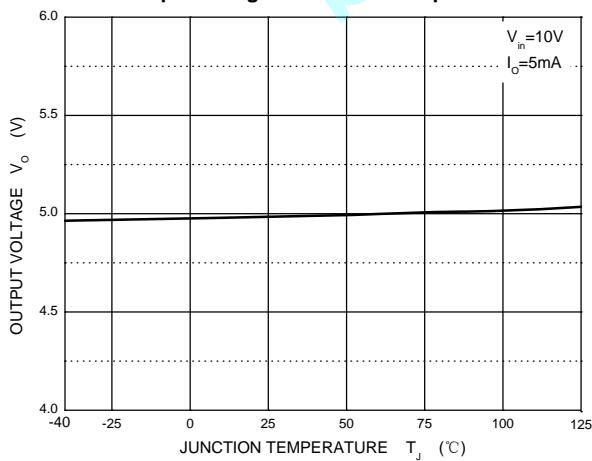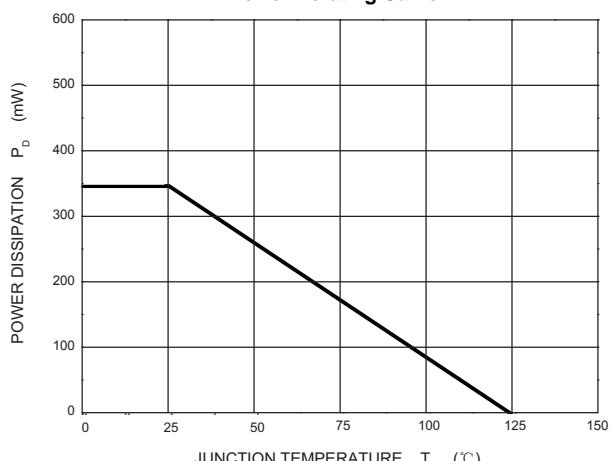
PACKAGE OUTLINE

Plastic surface mounted package; 3 leads   **SOT-23**
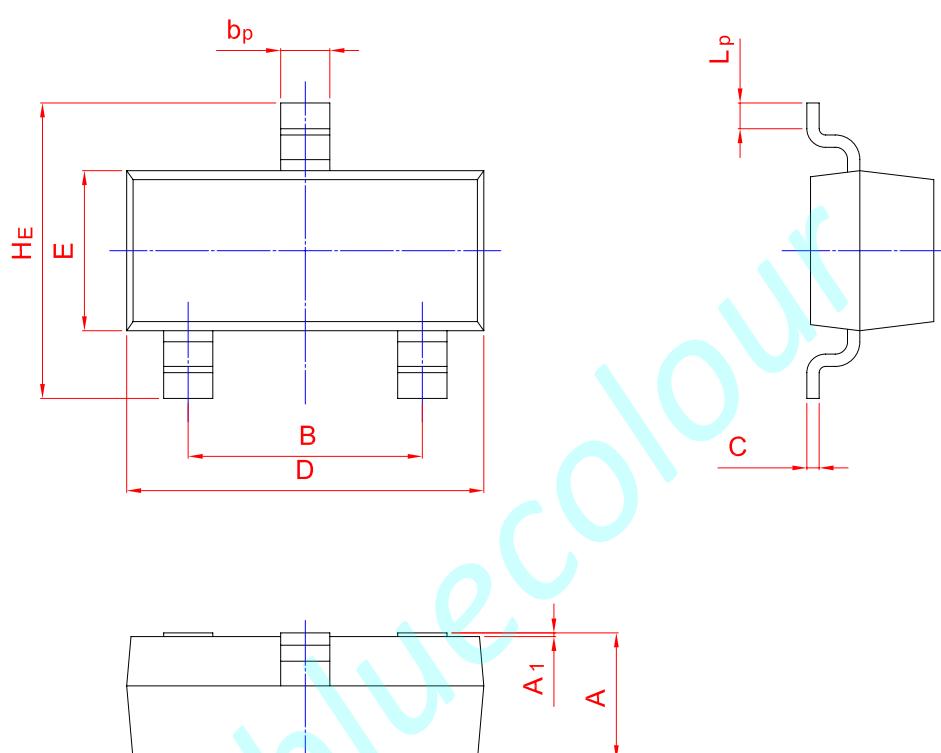
UNIT	A	B	b$_p$	C	D	E	H$_E$	A$_1$	L$_p$
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20