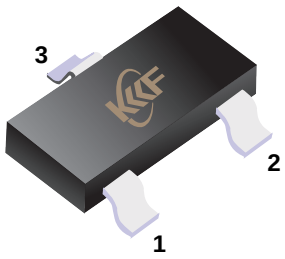
78L05

Three-Terminal Positive Voltage Regulator



1.OUT
2.IN
3.GND

Simplified outline(SOT-23)

Features

- Maximum Output current I_O: 0.1A
- Output Voltage V_O: 5V
- Continuous Total Dissipation P_D: 0.35W (T_a = 25℃)

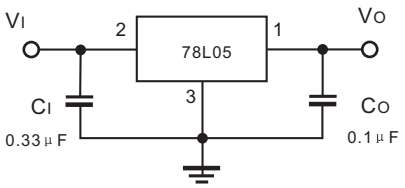
Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

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)

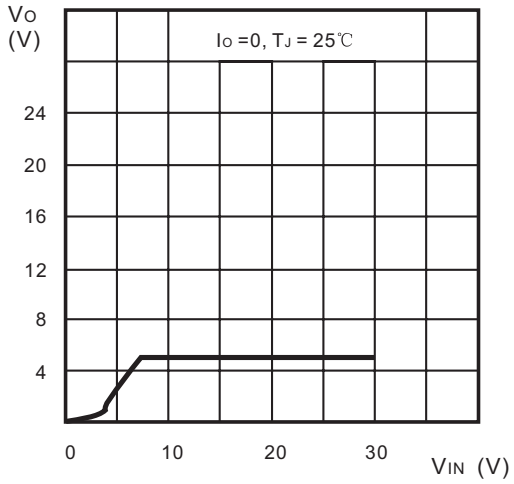
Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Output Voltage	V_O	T_J = 25℃	4.8	5.0	5.2	V
		T_J = 0～125℃, 7V≤V_I≤20V, I_O=1mA～40mA	4.75	5.0	5.25	V
		T_J = 0～125℃, I_O=1mA～70mA	4.75	5.0	5.25	V
Load Regulation	$\triangle V_O$	T_J = 25℃, I_O=1mA～100mA		15	60	mV
		T_J = 25℃, I_O=1mA～40mA		8	30	mV
Line Regulation	$\triangle V_O$	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	$\triangle I_Q$	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

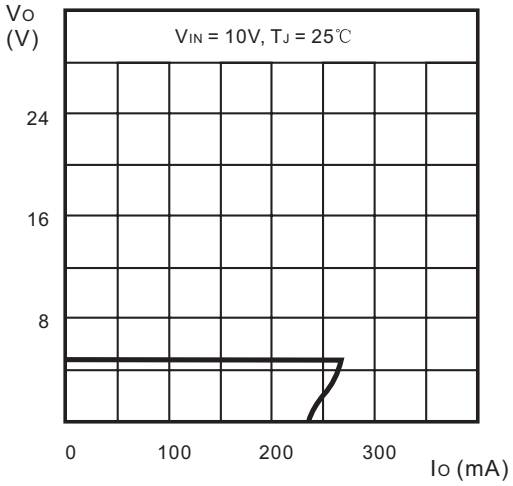


Note:Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

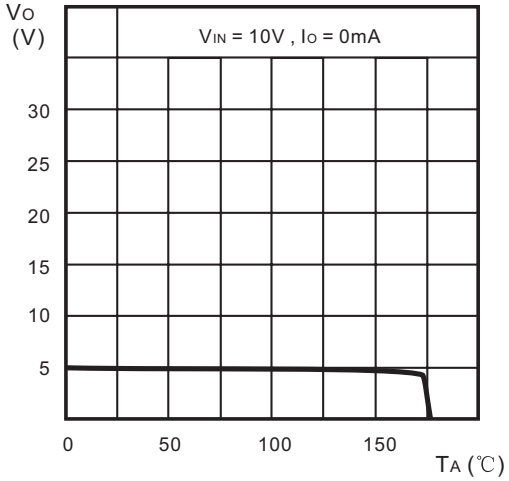
■ Typical Characteristics



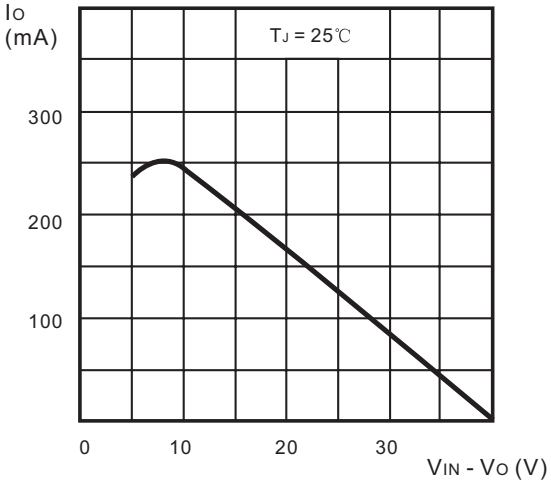
Output Characteristics



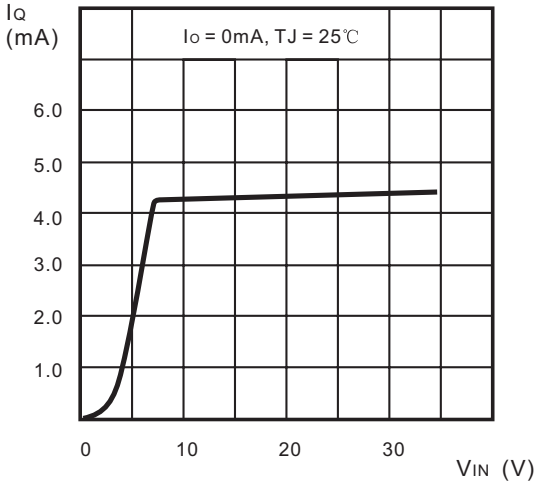
Load Characteristics



Thermal Shutdown

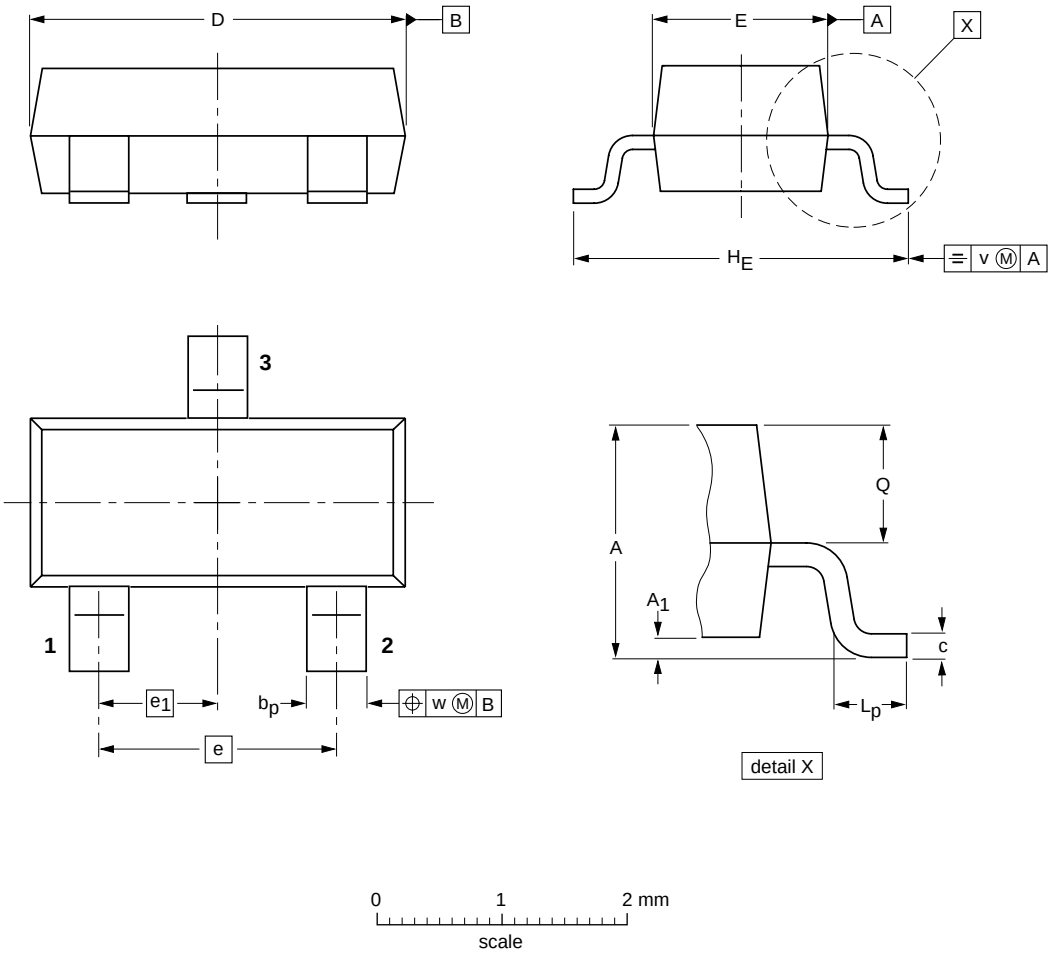


Short Circuit Output Current



Quiescent Current vs Input Voltage

■ SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1