



SOT-89 Encapsulate Three Terminal Voltage Regulator

FEATURES

Maximum Output current I_O : 0.1 AOutput voltage V_O : 5 V

Continuous total dissipation

 P_D : 0.5 W ($T_a = 25^\circ\text{C}$)

MARKING:

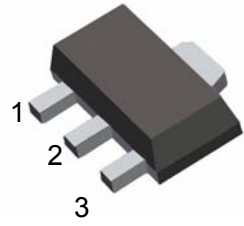
78L05 w (w:week code)

SOT-89

1. OUT

2. GND

3. IN



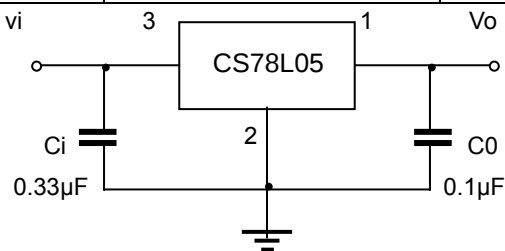
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_I	30	V
Operating Junction Temperature Range	T_{OPR}	0~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_I=10\text{V}$, $I_O=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Output voltage	V_O		25°C	4.8	5.0	5.2	V
		$7\text{V} \leq V_I \leq 20\text{V}$, $I_O=1\text{mA} \sim 40\text{mA}$	0-125 $^\circ\text{C}$	4.75	5.0	5.25	V
		$I_O=1\text{mA} \sim 70\text{mA}$		4.75	5.0	5.25	V
Load Regulation	ΔV_O	$I_O=1\text{mA} \sim 100\text{mA}$	25°C		15	60	mV
		$I_O=1\text{mA} \sim 40\text{mA}$	25°C		8	30	mV
Line regulation	ΔV_O	$7\text{V} \leq V_I \leq 20\text{V}$			32	150	mV
		$8\text{V} \leq V_I \leq 20\text{V}$	25°C		26	100	mV
Quiescent Current	I_q		25°C		3.8	6	mA
Quiescent Current Change	ΔI_q	$8\text{V} \leq V_I \leq 20\text{V}$	0-125 $^\circ\text{C}$			1.5	mA
	ΔI_q	$1\text{mA} \leq V_I \leq 40\text{mA}$	0-125 $^\circ\text{C}$			0.1	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$	25°C		42		μV
Ripple Rejection	RR	$8\text{V} \leq V_I \leq 20\text{V}$, $f=120\text{Hz}$	0-125 $^\circ\text{C}$	41	49		dB
Dropout Voltage	V_d		25°C		1.7		V

TYPICAL APPLICATION

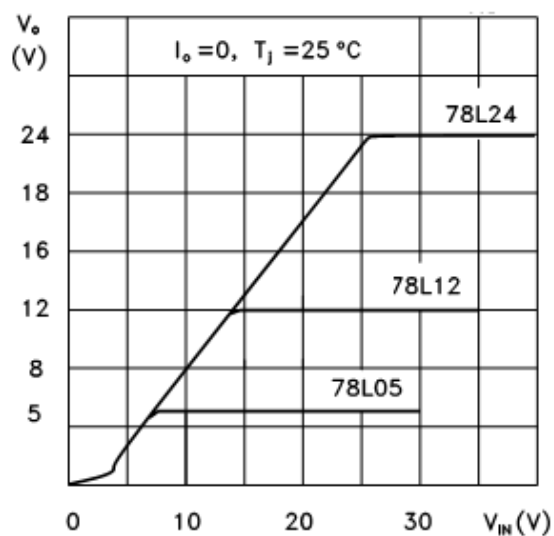


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

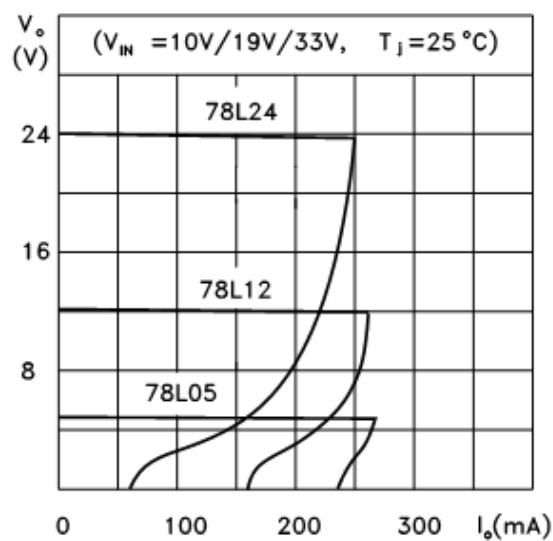


Typical Characteristics

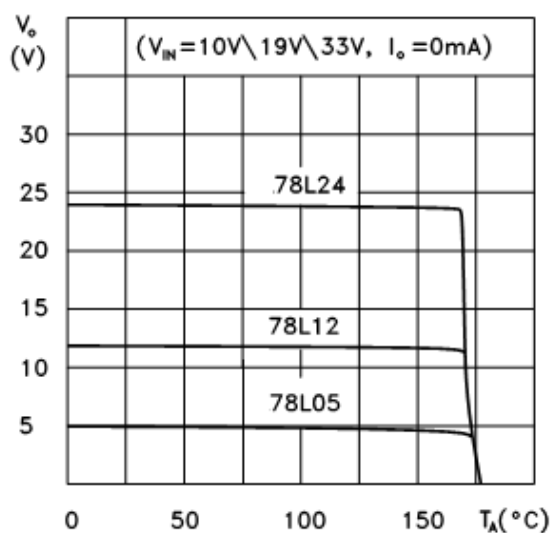
78L05/12/24 Output Characteristics



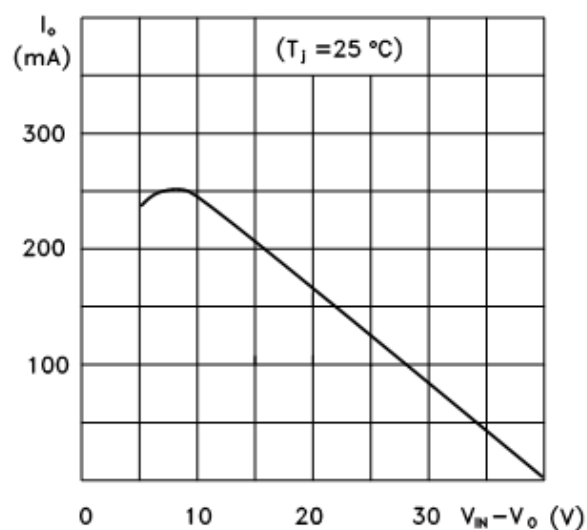
78L05/12/24 Load Characteristics



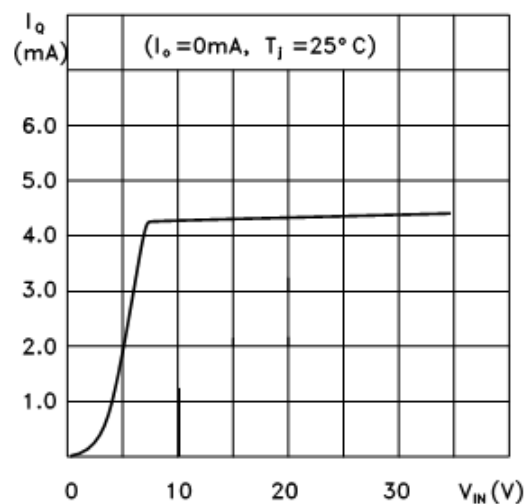
78L05/12/24 Thermal Shutdown



78L00 Series Short Circuit Output Current



78L05 Quiescent Current vs Input Voltage



PD-TA

