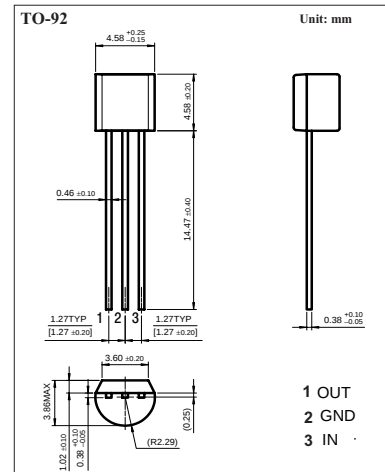


Three-Terminal Positive Voltage Regulator

78L05

■ Features

- Maximum output current: $I_{OM}=0.1A$.
- Output voltage: $V_O=5V$.
- Continuous total dissipation: P_D : 0.625 W ($T_a=25^{\circ}C$)



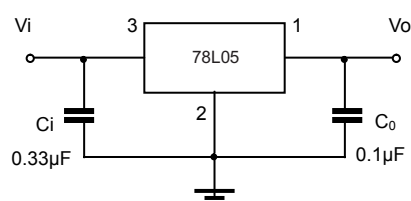
■ Absolute Maximum Ratings $T_a = 25^{\circ}C$

Parameter	Symbol	Rating	Unit
Input Voltage	V_I	30	V
Operating junction temperature range	T_{OPR}	0 to +125	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$

■ Electrical Characteristics ($V_I=10V, I_O=40mA, 0^{\circ}C < T_J < 125^{\circ}C, C_1=0.33 \mu F, C_O=0.1 \mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	V_O	$T_J=25^{\circ}C$	4.8	5.0	5.2	V
		$7V \leq V_I \leq 20V, I_O=1mA-40mA$	4.75	5.0	5.25	V
		$I_O=1mA-70mA$	4.75	5.0	5.25	V
Load regulation	ΔV_O	$T_J=25^{\circ}C, I_O=1mA-100mA$		15	60	mV
		$T_J=25^{\circ}C, I_O=1mA-40mA$		8	30	mV
Line regulation	ΔV_O	$7V \leq V_I \leq 20V, T_J=25^{\circ}C$		32	150	mV
		$8V \leq V_I \leq 20V, T_J=25^{\circ}C$		26	100	mV
Quiescent current	I_q	$T_J=25^{\circ}C$		3.8	6	mA
Quiescent current change	ΔI_q	$0^{\circ}C < T_J < 125^{\circ}C, 8V \leq V_I \leq 20V$			1.5	mA
	ΔI_q	$0^{\circ}C < T_J < 125^{\circ}C, 1mA \leq I_O \leq 40mA$			0.1	mA
Output noise voltage	V_N	$10Hz \leq f \leq 100KHz$		42		μV
Ripple rejection	RR	$8V \leq V_I \leq 20V, f=120Hz, T_J=25^{\circ}C$	41	49		dB
Dropout voltage	V_d	$T_J=25^{\circ}C$		1.7		V

■ Typical Application



78L05

■ Typical Characteristics

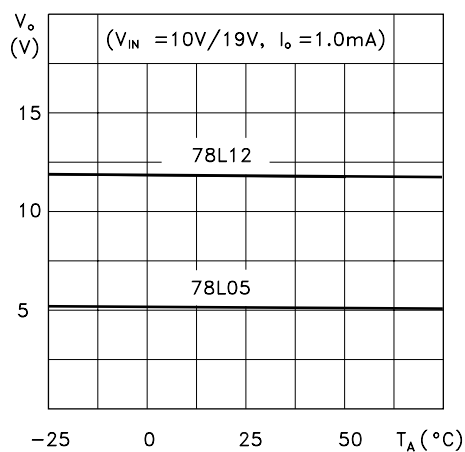


Figure 1 : Output Voltage vs Ambient Temperature

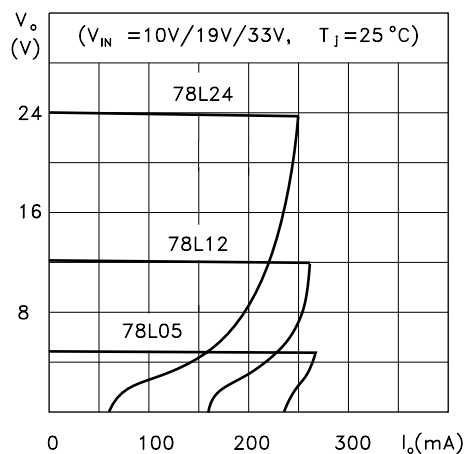


Figure 2 : Load Characteristics

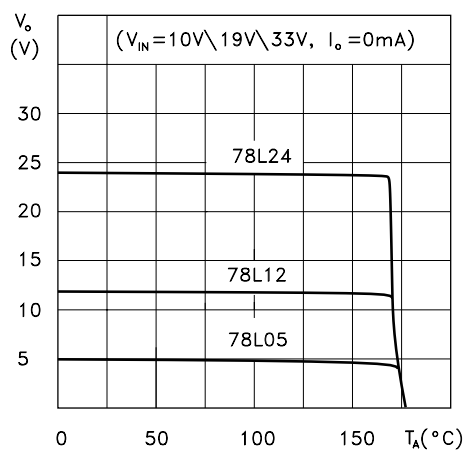


Figure 3 : Thermal Shutdown

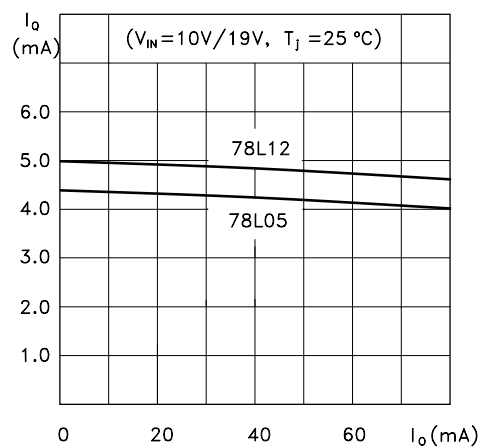


Figure 4 : Quiescent Current vs Output Current

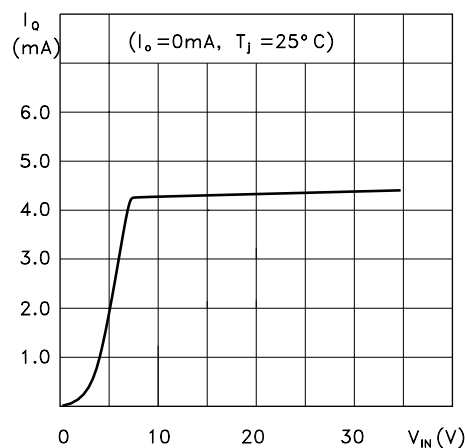


Figure 5 : Quiescent Current vs Input Voltage

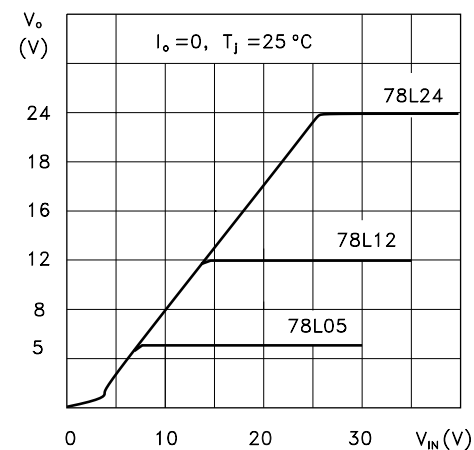
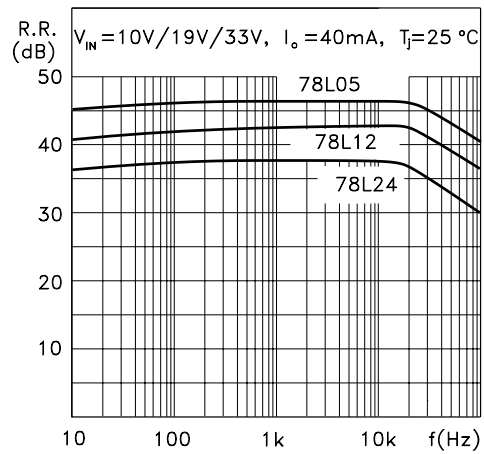
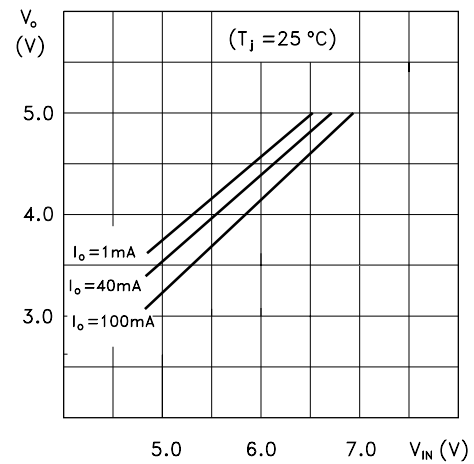
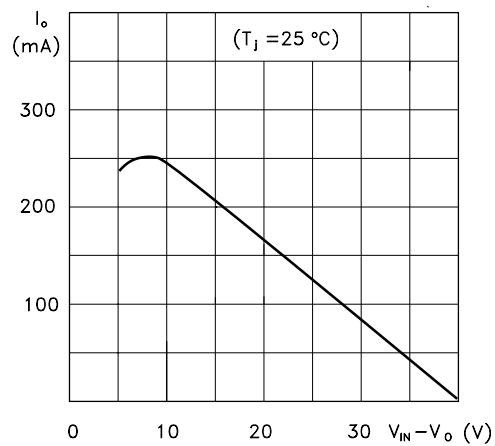


Figure 6 : Output Characteristics

78L05**Figure 7 : Ripple Rejection****Figure 8 : Dropout Characteristics****Figure 9 : Short Circuit Output Current**