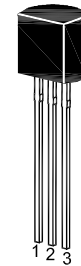


78L05

3-Terminal positive voltage regulator

Features

- Internal short-circuit current limiting
- Internal thermal overload protection
- Maximum output current of 100 mA ($T_j = 25^\circ\text{C}$)



1. Output 2. Common 3. Input
TO-92 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	35	V
Power Dissipation	P_{tot}	625	mW
Operating Temperature	T_{opr}	- 30 to + 75	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Electrical Characteristics (Unless otherwise specified, $V_{IN} = 10\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $T_j = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	4.8	5	5.2	V
Input Regulation $7\text{ V} \leq V_{IN} \leq 20\text{ V}$ $8\text{ V} \leq V_{IN} \leq 20\text{ V}$	Reg. line	-	55 45	150 100	mV
Load Regulation $1\text{ mA} \leq I_{OUT} \leq 100\text{ mA}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	Reg. load	-	11 5	60 30	mV
Output Voltage $7\text{ V} \leq V_{IN} \leq 20\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	V_{OUT}	4.75	-	5.25	V
Output Voltage $V_{IN} = 10\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 70\text{ mA}$	V_{OUT}	4.75	-	5.25	V
Quiescent Current	I_B	-	3.1	6	mA
Quiescent Current Change $8\text{ V} \leq V_{IN} \leq 20\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	ΔI_B	-	-	1.5 0.1	mA
Output Noise Voltage at $T_a = 25^\circ\text{C}$, $10\text{ Hz} \leq f \leq 100\text{ KHz}$	V_{NO}	-	40	-	μV
Ripple Rejection at $f = 120\text{ Hz}$, $8\text{ V} \leq V_{IN} \leq 18\text{ V}$, $T_j = 25^\circ\text{C}$	RR	41	49	-	dB
Dropout Voltage at $T_j = 25^\circ\text{C}$	$ V_{IN} - V_{OUT} $	-	1.7	-	V
Average Temperature Coefficient of Output Voltage at $I_{OUT} = 5\text{ mA}$	TC_{VO}	-	-0.6	-	mV/ $^\circ\text{C}$

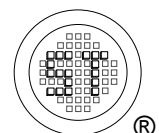


Fig.1 78L05 Output Voltage vs Ambient Temperature

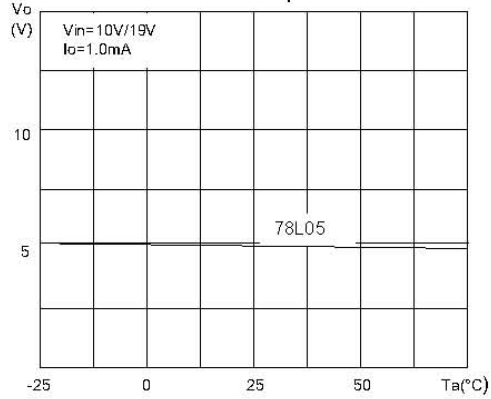


Fig.2 78L05 Quiescent Current vs Output Current

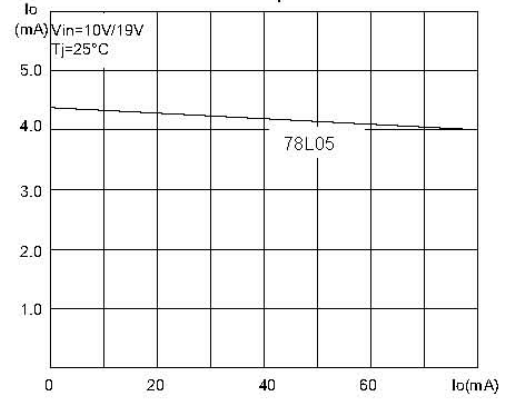


Fig.3 78L05 Quiescent Current vs Input

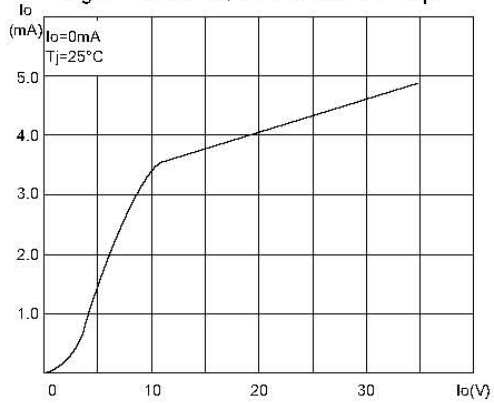


Fig.4 78L05 Thermal Shutdown

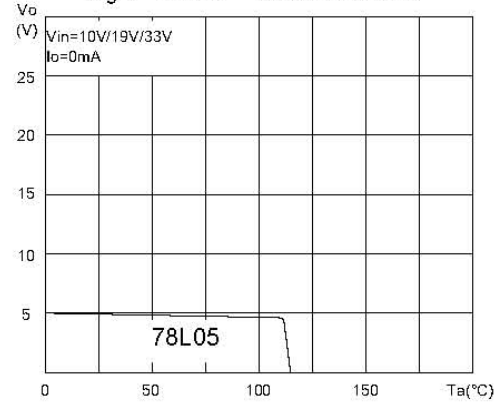


Fig.5 78L05 Output Characteristics

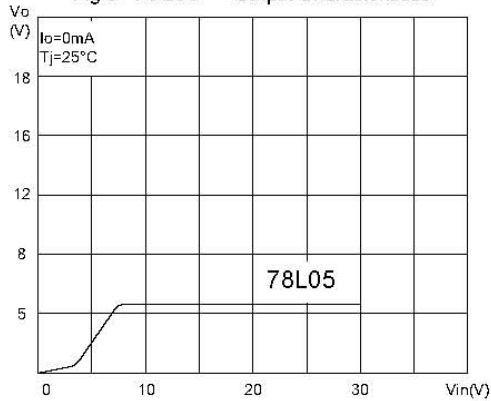


Fig.6 78L05 Dropout Characteristics

