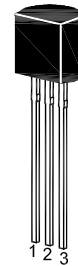


# 78L05

## 3-Terminal positive voltage regulator

### Features

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



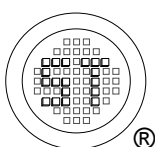
1. Output 2. Common 3. Input  
TO-92 Plastic Package

### 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, $V_{IN} = 10\text{ V}$ , $I_{OUT} = 40\text{ mA}$ , $C_{IN} = 0.33\ \mu\text{F}$ , $C_{OUT} = 0.1\ \mu\text{F}$ , $T_j = 25^\circ\text{C}$ )

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 $8\text{ V} \leq V_{IN} \leq 20\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	$\Delta I_B$	-	-	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	-	$\mu\text{V}$
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	-	$\text{mV}/^\circ\text{C}$



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Fig.1 78L05 Output Voltage vs Ambient Temperature

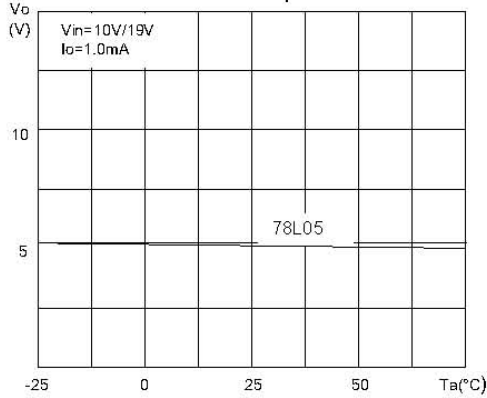


Fig.2 78L05 Quiescent Current vs Output Current

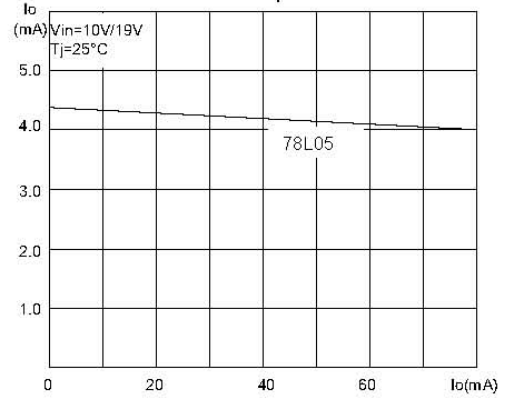


Fig.3 78L05 Quiescent Current vs Input

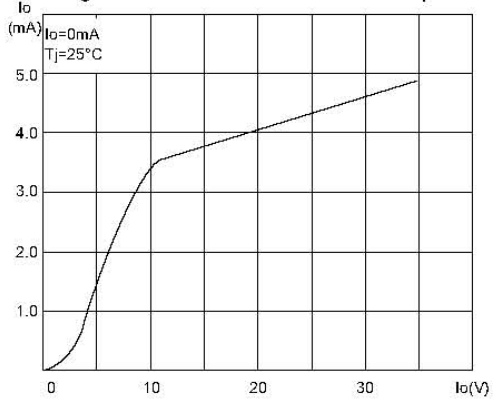


Fig.4 78L05 Thermal Shutdown

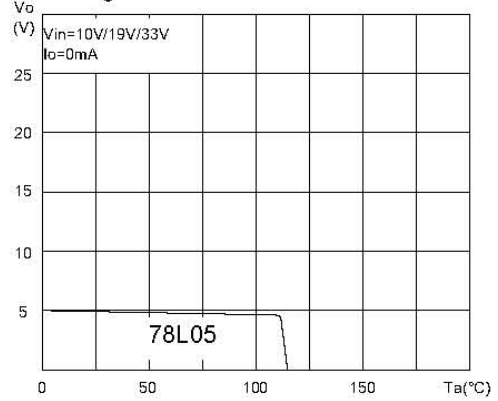


Fig.5 78L05 Output Characteristics

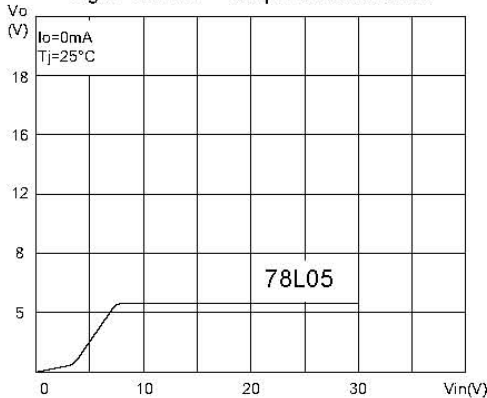
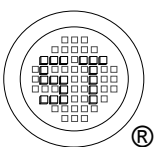
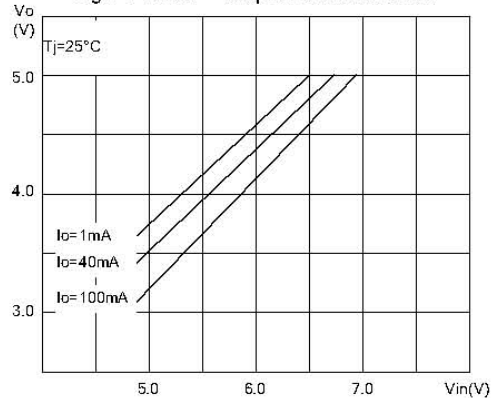


Fig.6 78L05 Dropout Characteristics



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ISO 9001:2008 Certificate No. 16073009 | ISO 14001:2004 Certificate No. 7116 | ISO 9001:2008 Certificate No. 9079410 | BS OHSAS 18001:2007 Certificate No. 7116 | IECQ QC 080000 Certificate No. PRC-18P4-148-1