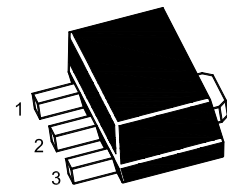


# 78L05U

## 3-Terminal Positive Voltage Regulator



1.OUT 2.GND 3.IN  
SOT-89 Plastic Package

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

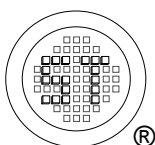
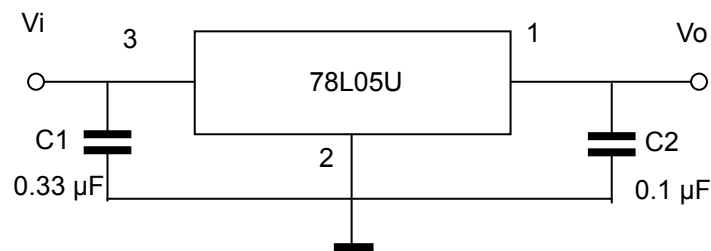
Parameter	Symbol	Rating	Unit
Input Voltage	$V_I$	30	V
Power Dissipation	$P_{\text{tot}}$	800 <sup>1)</sup>	mW
Operating Temperature	$T_{\text{opr}}$	- 20 to + 120	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	- 55 to +150	$^\circ\text{C}$

<sup>1)</sup> 15 mm x 25 mm x 0.7 mm alumina ceramic board,  $T_a \leq 25^\circ\text{C}$

### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

(Unless otherwise specified,  $0^\circ\text{C} \leq T_J \leq 125^\circ\text{C}$ ,  $V_I = 10\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$ )

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$	$T_J = 25^\circ\text{C}$	4.8	5	5.2	V
		$7\text{ V} \leq V_I \leq 20\text{ V}$ , $1\text{ mA} \leq I_O \leq 40\text{ mA}$	4.75	-	5.25	V
		$V_I = 10\text{ V}$ , $1\text{ mA} \leq I_O \leq 70\text{ mA}$	4.75	-	5.25	V
Line Regulation	Regline	$7\text{ V} \leq V_I \leq 20\text{ V}$ , $T_J = 25^\circ\text{C}$	-	-	150	mV
		$8\text{ V} \leq V_I \leq 20\text{ V}$ , $T_J = 25^\circ\text{C}$	-	-	100	
Load Regulation	Regload	$1\text{ mA} \leq I_O \leq 100\text{ mA}$ , $T_J = 25^\circ\text{C}$	-	-	60	mV
		$1\text{ mA} \leq I_O \leq 40\text{ mA}$ , $T_J = 25^\circ\text{C}$	-	-	30	
Quiescent Current	$I_Q$	$T_J = 25^\circ\text{C}$	-	-	5.5	mA
Quiescent Current Change	$\Delta I_Q$	$8\text{ V} \leq V_I \leq 20\text{ V}$	-	-	1.5	mA
		$1\text{ mA} \leq I_O \leq 40\text{ mA}$	-	-	0.1	
Output Noise Voltage	$V_N$	$10\text{ Hz} \leq f \leq 100\text{ KHz}$ , $T_J = 25^\circ\text{C}$	-	40	-	$\mu\text{V}$
Ripple Rejection	RR	$f = 120\text{ Hz}$ , $8\text{ V} \leq V_I \leq 18\text{ V}$ , $T_J = 25^\circ\text{C}$	41	-	-	dB
Dropout Voltage	$V_{\text{Drop}}$	$T_J = 25^\circ\text{C}$	-	1.7	-	V

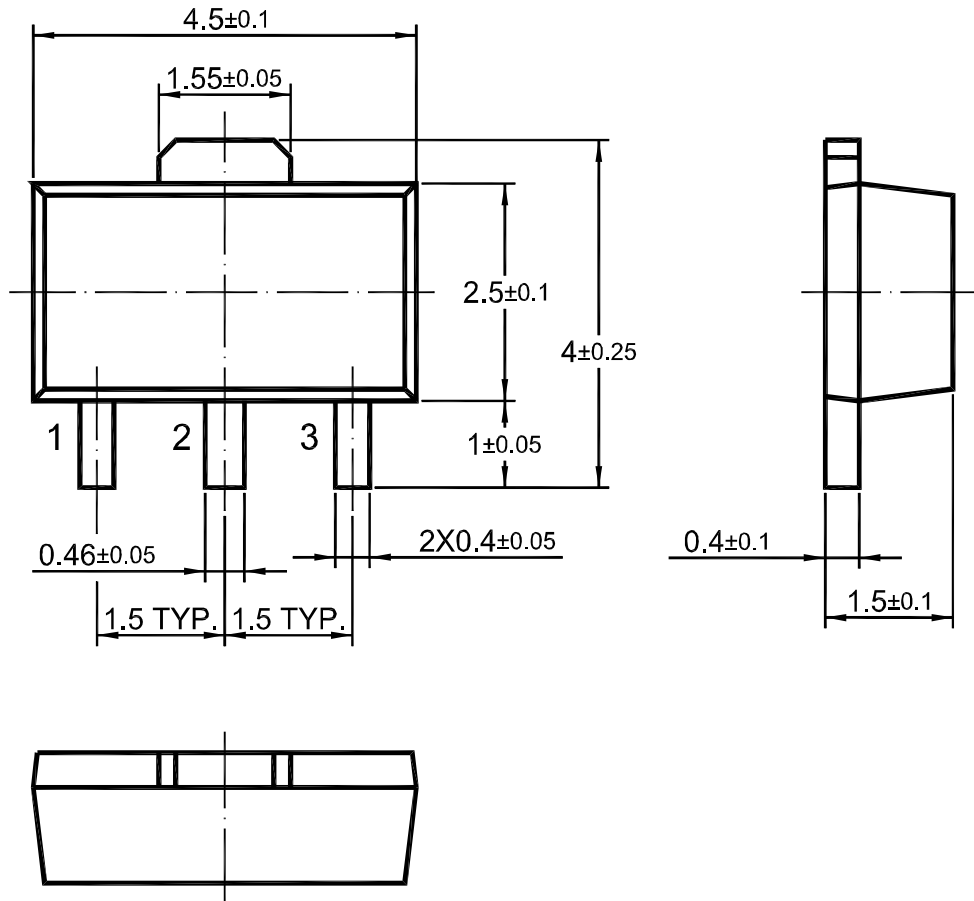


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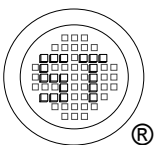


# 78L05U

## SOT-89 PACKAGE OUTLINE



Dimensions in mm



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Dated: 05/03/2016 Rev: 02