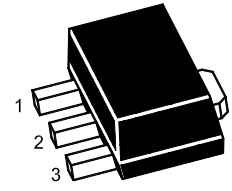


78L09U

3-Terminal Positive Voltage Regulator

Features

- Maximum output current of 100 mA
- Thermal overload protection
- Short circuit current limiting



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

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

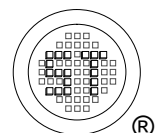
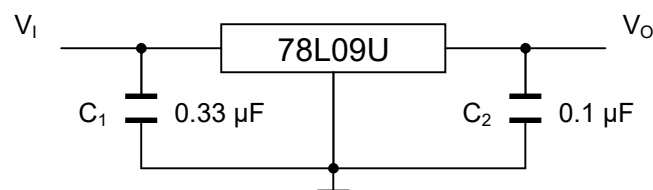
Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Output Current	I_{out}	100	mA
Power Dissipation	P_{tot}	800 ¹⁾	mW
Operating Temperature	T_{opr}	- 20 to + 120	$^\circ\text{C}$
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ 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, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $V_I = 15\text{ V}$, $I_O = 40\text{ mA}$, $C_1 = 0.33\text{ }\mu\text{F}$, $C_O = 0.1\text{ }\mu\text{F}$)

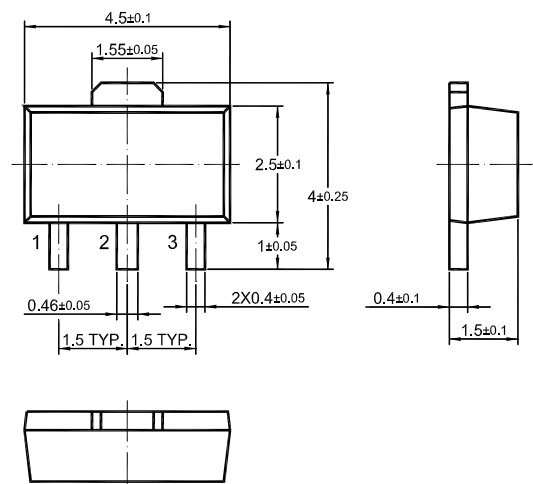
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_j = 25^\circ\text{C}$	8.64	9	9.36	V
		$11.4\text{ V} \leq V_I \leq 24\text{ V}$, $1\text{ mA} \leq I_O \leq 40\text{ mA}$	8.55	-	9.45	V
		$V_I = 15\text{ V}$, $1\text{ mA} \leq I_O \leq 70\text{ mA}$	8.55	-	9.45	V
Line Regulation	Regline	$11.4\text{ V} \leq V_I \leq 24\text{ V}$, $T_j = 25^\circ\text{C}$	-	-	200	mV
		$12\text{ V} \leq V_I \leq 24\text{ V}$, $T_j = 25^\circ\text{C}$	-	-	160	
Load Regulation	Regload	$1\text{ mA} \leq I_O \leq 100\text{ mA}$, $T_j = 25^\circ\text{C}$	-	-	90	mV
		$1\text{ mA} \leq I_O \leq 40\text{ mA}$, $T_j = 25^\circ\text{C}$	-	-	45	
Quiescent Current	I_Q	$T_j = 25^\circ\text{C}$	-	-	6	mA
Quiescent Current Change	ΔI_Q	$12\text{ V} \leq V_I \leq 24\text{ V}$, $I_O = 40\text{ mA}$	-	-	1.5	mA
		$V_I = 15\text{ V}$, $1\text{ mA} \leq I_O \leq 40\text{ mA}$	-	-	0.1	
Output Noise Voltage	V_N	$10\text{ Hz} \leq f \leq 100\text{ KHz}$, $T_j = 25^\circ\text{C}$	-	70	-	μV
Ripple Rejection	RR	$f = 120\text{ Hz}$, $12\text{ V} \leq V_I \leq 24\text{ V}$, $T_j = 25^\circ\text{C}$	38	-	-	dB
Dropout Voltage	V_{Drop}	$T_j = 25^\circ\text{C}$	-	1.7	-	V



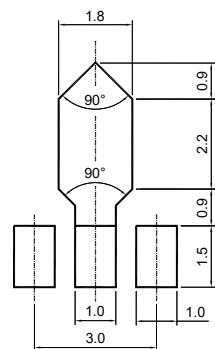
78L09U

Package Outline (Dimensions in mm)

SOT-89



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-89	12	8 ± 0.1	0.315 ± 0.004	178	7	1,000
				330	13	4,000

Marking information

" 78L09U " = Part No.

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

