



DESCRIPTION

The A78L05B is fix 5V monolithic integrated circuit voltage regulators are suitable for applications that required supply current up to 100mA.

The A78L05B is available in SOT89-3, TO-92 and SOP8 packages.

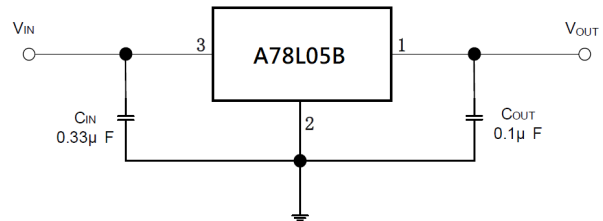
FEATURES

- Maximum Output current: 0.1A
- Output Voltage: 5V
- Thermal Overload Protection
- 2% Output Voltage Accuracy

ORDERING INFORMATION

Package Type	Part Number	
SOT89-3 SPQ: 1,000pcs/Reel	K3	A78L05BK3R
		A78L05BK3VR
TO-92 SPQ: 2,000pcs/Box	Z	A78L05BZY
		A78L05BZVY
SOP8 SPQ: 2,500pcs/Reel	M8	A78L05BM8R
		A78L05BM8VR
Note	V: Halogen free Package R: Tape & Reel Y: Ammo	
AiT provides all RoHS products		

APPLICATION CIRCUIT



NOTE: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.



PIN DESCRIPTION

<p>A78L05B SOT89-3</p> <p>1 2 3 V_{OUT} GND V_{IN}</p> <p>SOT89-3, K3 Top View</p>			<p>A78L05B TO-92</p> <p>1 2 3 V_{OUT} GND V_{IN}</p> <p>TO-92, Z Top View</p>			<p>V_{IN} GND GND NC 8 7 6 5</p> <p>A78L05B SOP8</p> <p>1 2 3 4 V_{OUT} GND GND NC</p> <p>SOP8, M8 Top View</p>		
Pin #			Symbol	Function				
SOT89-3	TO-92	SOP8						
1	1	1	V _{OUT}	Output				
2	2	2,3,6,7	GND	Ground				
3	3	8	V _{IN}	Power Input				
-	-	4,5	NC	No Connect				

**ABSOLUTE MAXIMUM RATINGS** $T_A=25^\circ\text{C}$

V_I , Input Voltage	42V
T_J , Operating Junction Temperature Range	$-40^\circ\text{C} \sim +125^\circ\text{C}$
P_D , Power Dissipation	750mW
T_{OPR} , Operating Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
T_{STG} , Storage Temperature Range	$-40^\circ\text{C} \sim +150^\circ\text{C}$

Stresses above may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

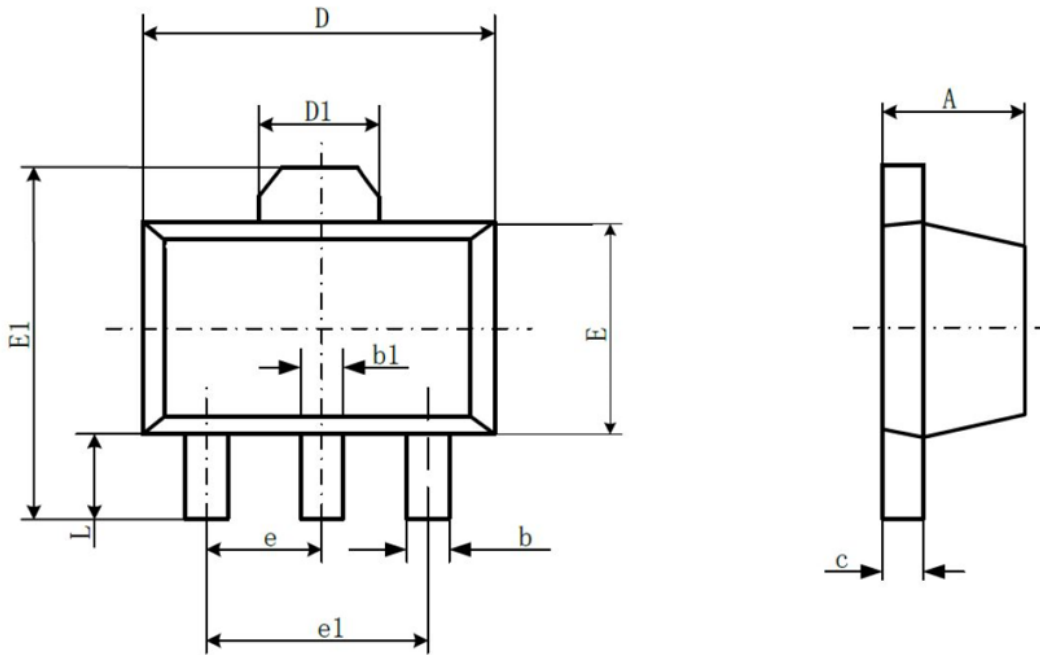
ELECTRICAL CHARACTERISTICS
 $V_I=10\text{V}$, $I_O=40\text{mA}$, $-30 < T_J < 85^\circ\text{C}$, $C_1=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	$T_J=25^\circ\text{C}$	4.9	5	5.1	V
		$7\text{V} \leq V_I \leq 20\text{V}$; $I_O=1\text{mA} \sim 40\text{mA}$	4.8	-	5.2	V
		$7\text{V} \leq V_I \leq V_{\text{max}}$; $I_O=1\text{mA} \sim 70\text{mA}$	4.8	-	5.2	V
Load Regulation	ΔV_O	$T_J=25^\circ\text{C}$; $I_O=1\text{mA} \sim 100\text{mA}$	-	11	60	mV
		$T_J=25^\circ\text{C}$; $I_O=1\text{mA} \sim 40\text{mA}$	-	5	6	
Line Regulation	ΔV_O	$T_J=25^\circ\text{C}$; $7\text{V} \leq V_I \leq 20\text{V}$	-	8	150	mV
		$T_J=25^\circ\text{C}$; $8\text{V} \leq V_I \leq 20\text{V}$	-	6	100	
Quiescent Current	I_Q		-	3	5.5	mA
Quiescent Current Change	ΔI_Q	$8\text{V} \leq V_I \leq 20\text{V}$	-	-	1.5	mA
		$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.2	
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$	-	63	-	μV
Temperature Coefficient	$\Delta V_O/\Delta T$	$I_O=5\text{mA}$	-	0.65	-	$\text{mV}/^\circ\text{C}$
Ripple Rejection	RR	$10\text{V} \leq V_I \leq 20\text{V}$; $f=120\text{Hz}$; $T_J=25^\circ\text{C}$	41	60	-	dB
Dropout Voltage	V_d	$T_J=25^\circ\text{C}$	-	1.7	-	V



PACKAGE INFORMATION

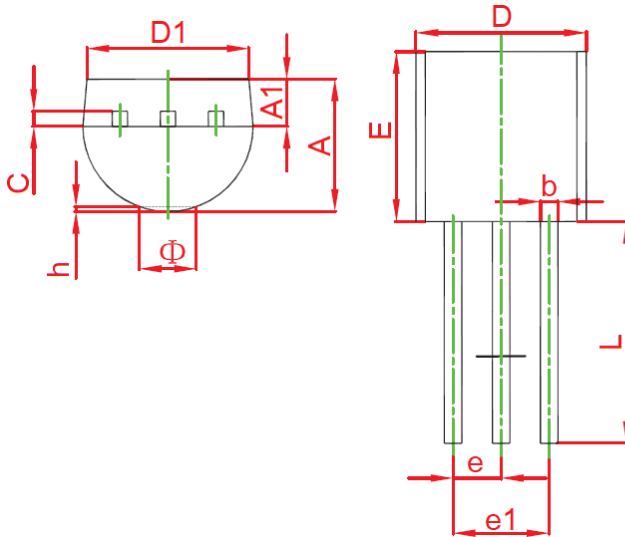
Dimension in SOT89-3 (Unit: mm)



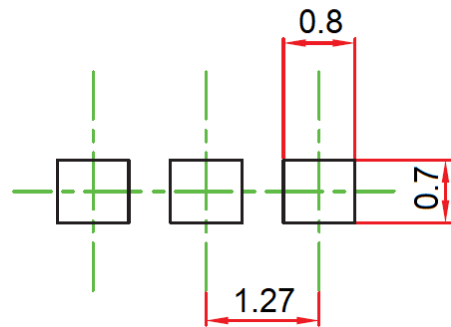
Symbol	MILLIMETERS	
	Min.	Max.
A	1.400	1.600
b	0.380	0.460
b1	0.460	0.560
c	0.380	0.420
D	4.400	4.600
D1	1.620	1.830
E	2.400	2.600
E1	3.950	4.250
e	1.500 BSC	
e1	3.000 BSC	
L	0.890	1.200



Dimension in TO-92 Package (Unit: mm)



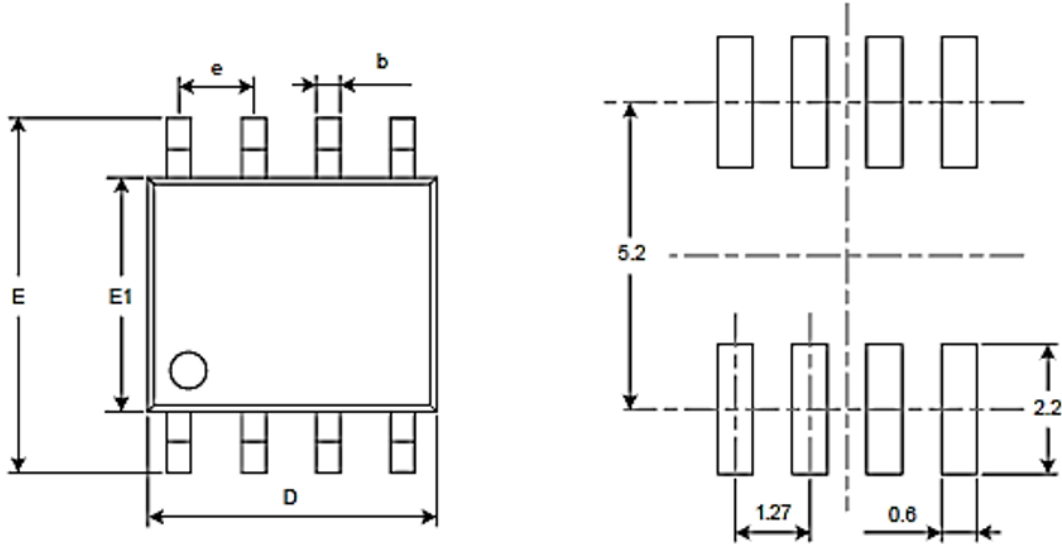
Suggested Pad Layout



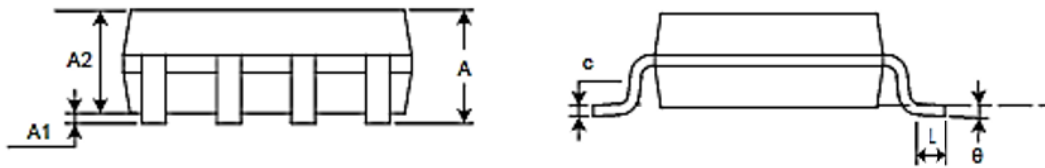
Symbol	Millimeters	
	Min	Max
A	3.300	3.700
A1	1.100	1.400
b	0.400	0.550
C	0.360	0.510
D	4.400	4.700
D1	3.430	-
E	4.350	4.700
e	1.200	1.300
e1	2.400	2.600
L	13.500	14.500
Φ	1.450	1.600
h	0.000	0.380



Dimension in SOP8 (Unit: mm)



RECOMMENDED LAND PATTERN



Symbol	Millimeters	
	Min	Max
A	1.350	1.750
A1	0.100	0.250
A2	1.300	1.500
b	0.390	0.470
c	0.200	0.240
D	4.800	5.000
e	1.270 BSC	
E	5.800	6.200
E1	3.800	4.000
L	0.500	0.800
θ	0°	8°



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