

## LINEAR INTEGRATED CIRCUIT

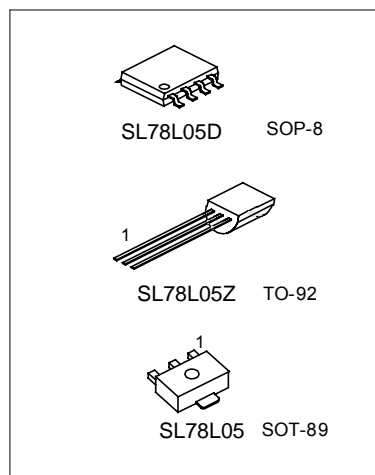
### 3-TERMINAL 0.1A POSITIVE VOLTAGE REGULATOR

#### DESCRIPTION

The SL78L05 family is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 100mA.

#### FEATURES

- \*Output current up to 100mA
- \* Output voltage of 5V
- \*Thermal overload shutdown protection
- \*Short circuit current limiting

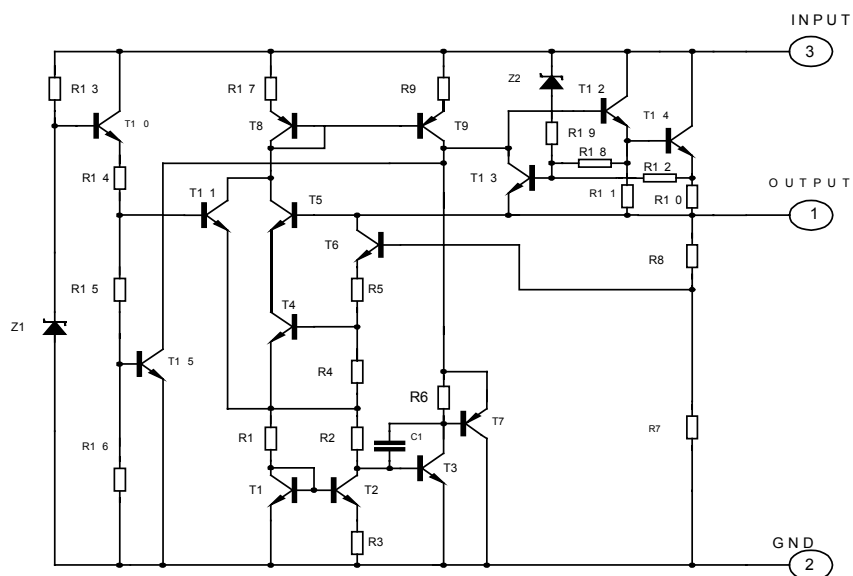


SOP-8 1:Output 2,3,6,7:GND 8:Input  
4,5:N.C.

TO-92 1:Output 2:GND; 3:Input

SOT-89 1:Output 2:GND; 3:Input

#### TEST CIRCUIT



## ABSOLUTE MAXIMUM RATINGS

( Operating temperature range applies unless otherwise specified )

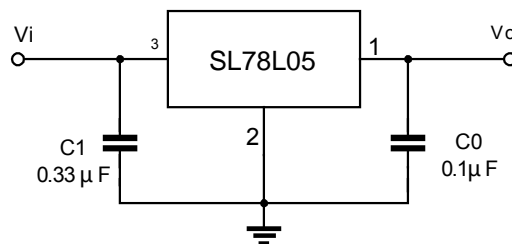
PARAMETER	SYMBOL	MIN.	MAX.	UNIT	
Input voltage (for $V_o=5\sim 9V$ )	$V_i$		32	V	
Output Current	$I_o$		100	mA	
Power Dissipation	PD			mW	
SOP-8					300
TO-92					500
SOT-89	350				
Operating Junction Temperature Range	$T_{OPR}$	-10	+110	°C	
Storage Temperature Range	$T_{STG}$	-55	+150	°C	

## SL78L05 ELECTRICAL CHARACTERISTICS

( $V_i=10V$ ,  $I_o=40mA$ ,  $0^\circ C < T_j < 125^\circ C$ ,  $C_1=0.33\mu F$ ,  $C_o=0.1\mu F$ , unless otherwise specified )(Note 1)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP.	MAX	UNIT
Output Voltage	$V_o$	$T_j=25^\circ C$	4.80	5.0	5.20	V
		$7V \leq V_i \leq 20V, I_o=1mA\sim 40mA$	4.75		5.25	V
		$7V \leq V_i \leq 25V, I_o=1mA\sim 50mA$	4.75		5.25	V (note 2)
Load Regulation	$V_o$	$T_j=25^\circ C, I_o=1mA\sim 100mA$		11	60	mV
		$T_j=25^\circ C, I_o=1mA\sim 40mA$		5.0	30	mV
Line regulation	$V_o$	$7V \leq V_i \leq 20V, T_j=25^\circ C$		8	150	mV
		$8V \leq V_i \leq 20V, T_j=25^\circ C$		6	100	mV
Quiescent Current	$\Delta I_q$	$V_i=10V, I_o=0mA, T_j=25^\circ C$		2.0	5.5	mA
Quiescent Current Change	$\Delta I_q$	$8V \leq V_i \leq 20V$			1.5	mA
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$			0.1	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100kHz$		40		$\mu V$
Temperature coefficient of $V_o$	$V_o/T$	$I_o=5mA$		-0.65		$mV/^\circ C$
Ripple Rejection	RR	$8V \leq V_i \leq 20V, f=120Hz, T_j=25^\circ C$	41	80		dB
Dropout Voltage	$V_d$	$T_j=25^\circ C$		1.7		

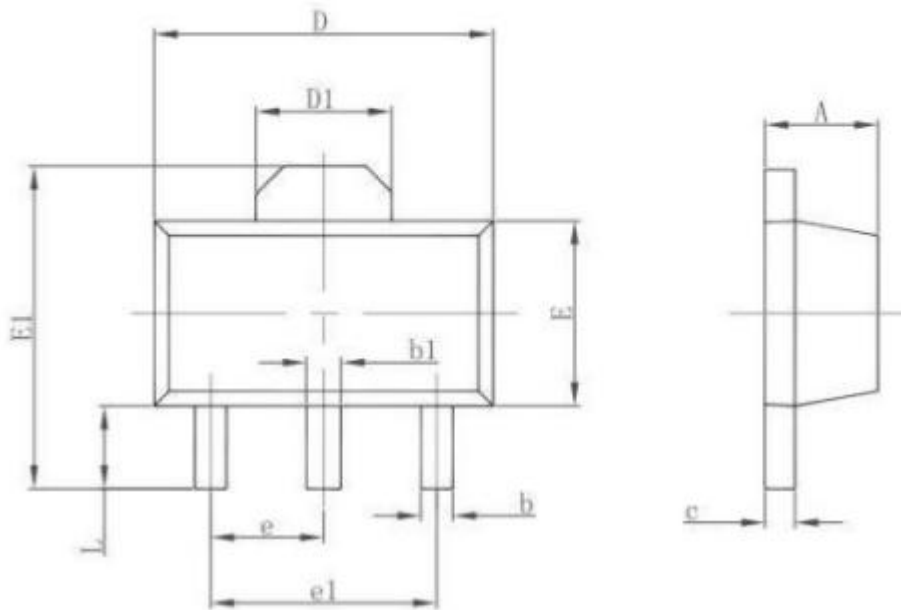
## APPLICATION CIRCUIT



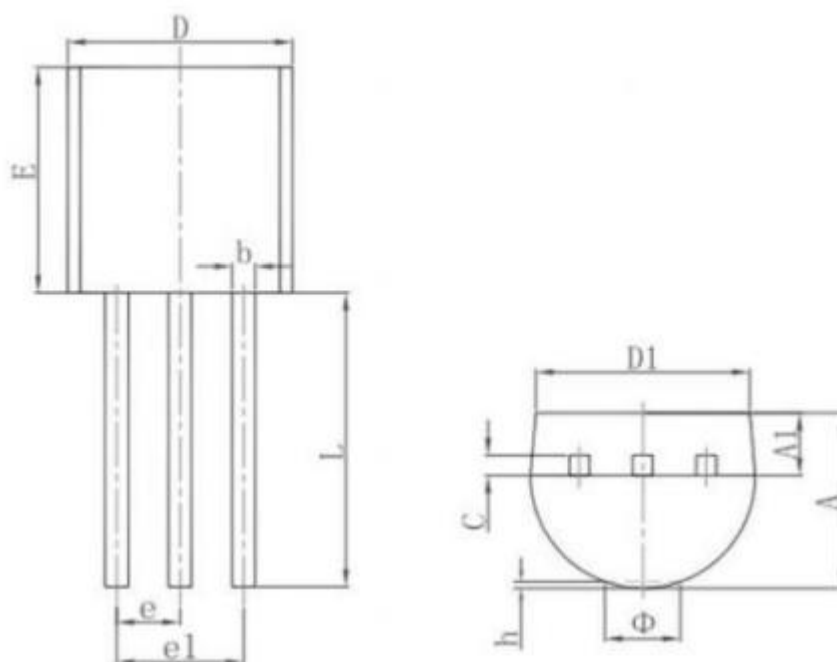
Note 1: To specify an output voltage, substitute voltage value for "XX".

Note 2: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

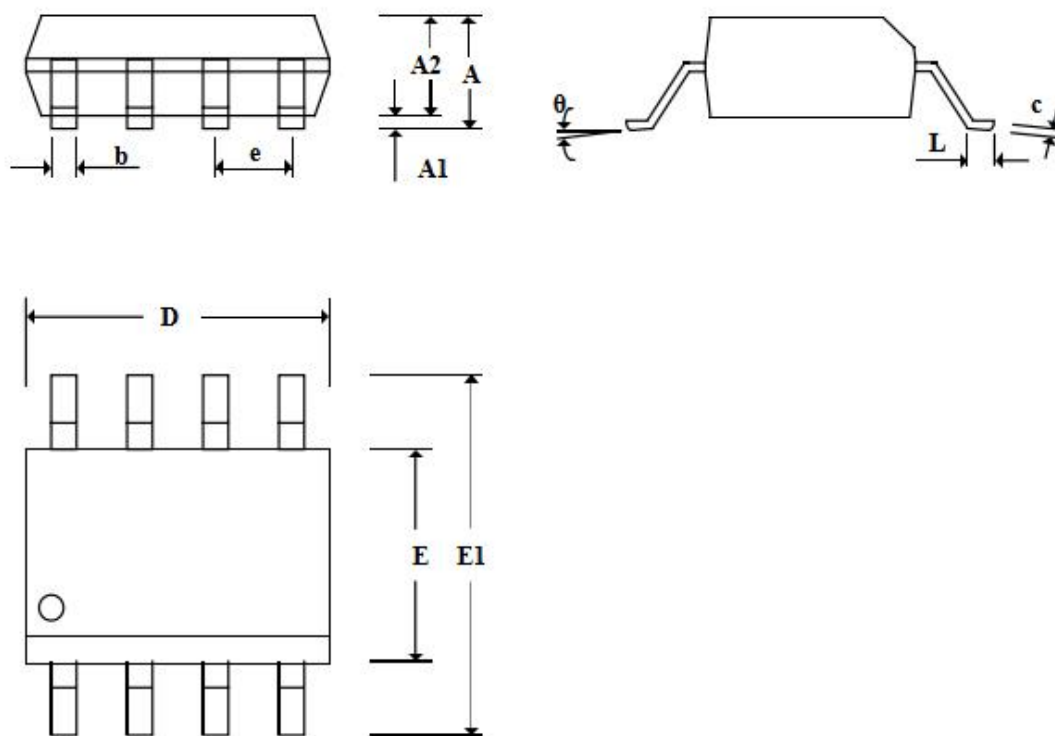
**Package Information**  
**3-pin SOT89 Outline Dimensions**



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

**3-pin TO92 Outline Dimensions**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Phi		1.600		0.063
h	0.000	0.380	0.000	0.015

**SOP-8**


符号	尺寸(mm)		符号	尺寸(mm)	
	最小值	最大值		最小值	最大值
A	1.350	1.800	D	4.700	5.100
A1	0.100	0.250	E	3.700	4.100
A2	1.250	1.550	E1	5.800	6.300
b	0.330	0.510	L	0.400	0.800
c	0.190	0.250	$\theta$	0°	8°
e	1.270 (BSC)				