

# 78L05

## DATASHEET

### Specification Revision History:

Version	Date	Description
V1.0	2021/01	New
V1.1	2023/09	Modify Ordering Information
V1.2	2025/02	Modify Ordering Information
V1.3	2025/03	Add application precautions and overall typesetting.

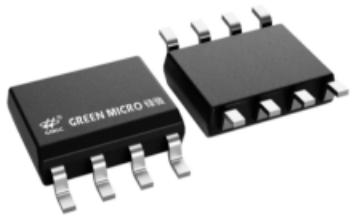
## DESCRIPTION

The 78L05 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

## The appearance of the product



SOP-8

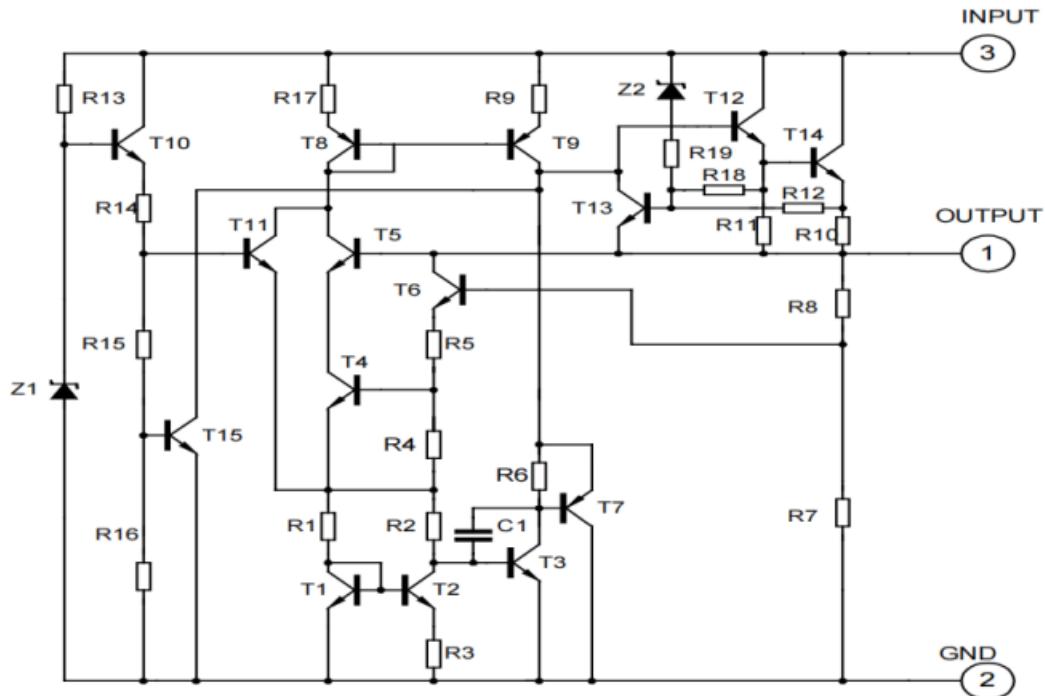


SOT-89-3

## Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
L78L05ABS	SOP-8	78L05 S247	REEL	2500PCS/REEL
78L05AFO	SOT-89-3	78L05 247	REEL	1000PCS/REEL

## BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS

(Operating temperature range applies unless otherwise specified)

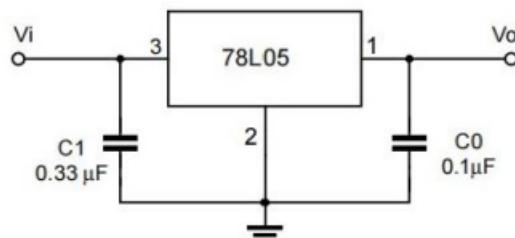
PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Input voltage(for $V_o=5\sim 9V$ )	$V_i$		32	V
Output Current	$I_o$		100	mA
Power Dissipation SOP-8 TO-92 SOT-89	$P_D$		300 500 350	mW
operating Junction Temperature Range	$T_{OPR}$	-10	+110	°C
Storage Temperature Range	$T_{STG}$	-55	+150	°C

## 78L05 ELECTRICAL CHARACTERISTICS

(VI=10V,lo=40mA,0°C<Ti<125°C,C1=0.33uF,Co=0.1uF,unless otherwise specified)(Note 1)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP.	MAX	UNIT
Output Voltage	V <sub>o</sub>	T <sub>j</sub> =25 °C	4.80	5.0	5.20	V
		7V<=V <sub>K</sub> =20V,lo=5mA-40mA	4.75		5.25	V
Load Regulation	V <sub>o</sub>	T <sub>i</sub> =25 °C,lo=5mA-100mA		11	80	mV
		T <sub>j</sub> =25 °C,lo=5mA-40mA		5.0	40	mv
Line regulation	V <sub>o</sub>	7V<=V <sub>I</sub> <=20V,T <sub>j</sub> =25 °C		8	150	mV
		8V<=V <sub>I</sub> <=20V,T <sub>j</sub> =25 °C		6	100	mV
Quiescent Current	ΔI <sub>q</sub>	V <sub>IN</sub> =10V,I <sub>O</sub> =0mA,T <sub>j</sub> =25 °C		2.0	5.5	mA
Quiescent Current Change	ΔI <sub>q</sub>	8V<=V <sub>I</sub> <=20V			1.5	mA
	ΔI <sub>q</sub>	5mA<=V <sub>I</sub> <=40mA			0.1	mA
Output Noise Voltage	V <sub>N</sub>	10Hz<=f<=100kHz		40		uV
Temperature coefficient of V <sub>o</sub>	V <sub>o</sub> /T	lo=5mA		-0.65		mV/C
Ripple Rejection	RR	8V<=V <sub>I</sub> <=20V,f=120Hz,T <sub>j</sub> =25 °C	41	80		dB
Dropout Voltage	V <sub>d</sub>	T <sub>j</sub> =25 °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.

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