

# 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.

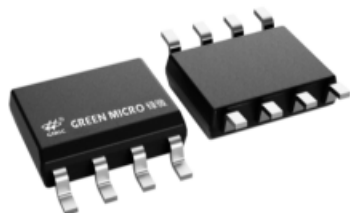
## DESCRIPTION

The 78L05 family is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 100mA

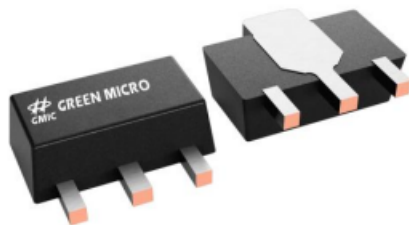
## FEATURES

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

## The appearance of the product



SOP-8

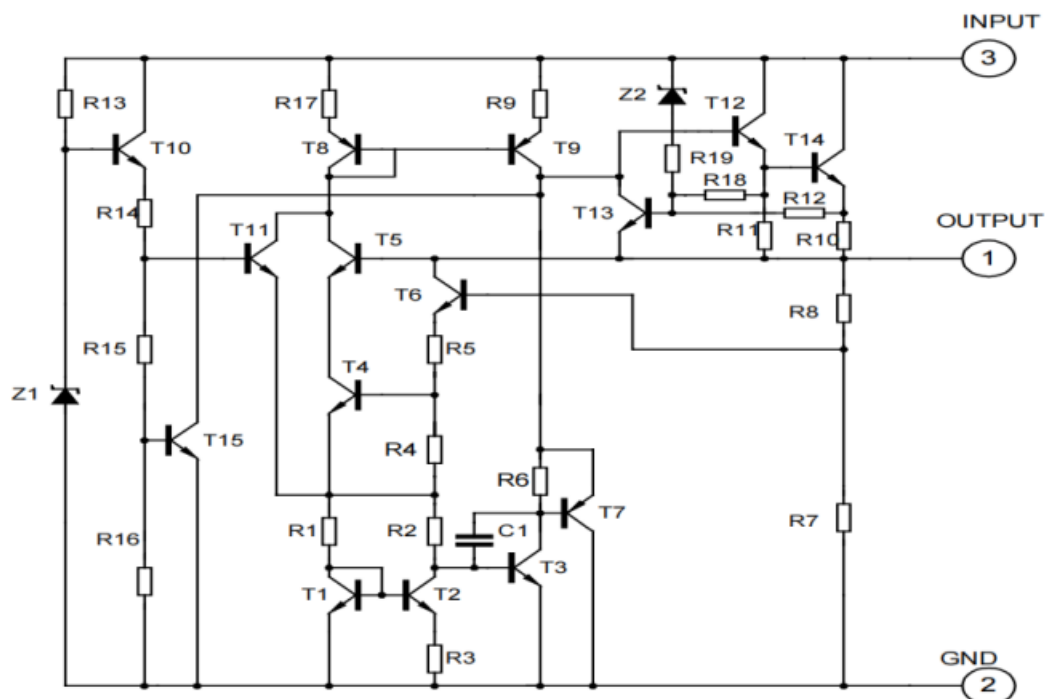


SOT-89-3

## 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)

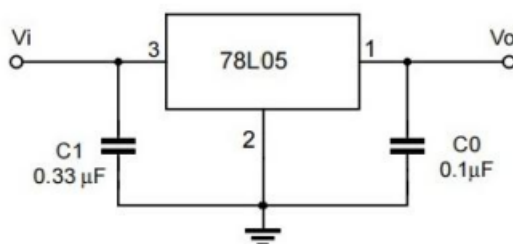
PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Input voltage(for $V_o=5\sim 9V$ )	$V_i$		32	V
Output Current	$I_o$		100	mA
Power Dissipation SOP-8 TO-92 SOT-89	$P_D$		300 500 350	mW
operating Junction Temperature Range	$T_{OPR}$	-10	+110	°C
Storage Temperature Range	$T_{STG}$	-55	+150	°C

## 78L05 ELECTRICAL CHARACTERISTICS

( $V_I=10V, I_O=40mA, 0^\circ C < T_J < 125^\circ C, C_1=0.33\mu F, C_O=0.1\mu F$ , 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
		$7V \leq V_I \leq 20V, I_O=5mA-40mA$	4.75		5.25	V
Load Regulation	$V_O$	$T_J=25^\circ C, I_O=5mA-100mA$		11	80	mV
		$T_J=25^\circ C, I_O=5mA-40mA$		5.0	40	mv
Line regulaion	$V_O$	$7V \leq V_I \leq 20V, T_J=25^\circ C$		8	150	mV
		$8V \leq V_I \leq 20V, T_J=25^\circ C$		6	100	mV
Quiescent Current	$\Delta I_q$	$V_{IN}=10V, I_O=0mA, T_J=25^\circ C$		2.0	5.5	mA
Quiescent Current Change	$\Delta I_q$	$8V \leq V_I \leq 20V$			1.5	mA
	$\Delta I_q$	$5mA \leq V_I \leq 40mA$			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/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.

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