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.

3-TERMINAL 0.1A POSITIVE VOLTAGE REGULATOR

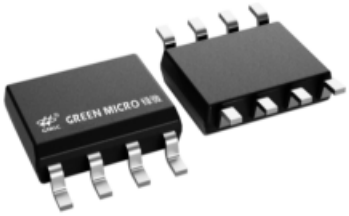
DESCRIPTION

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

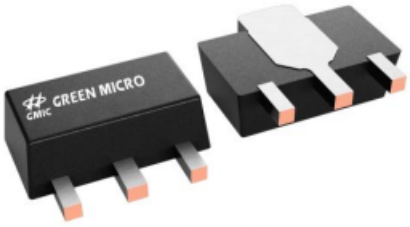
FEATURES

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

The appearance of the product



SOP-8



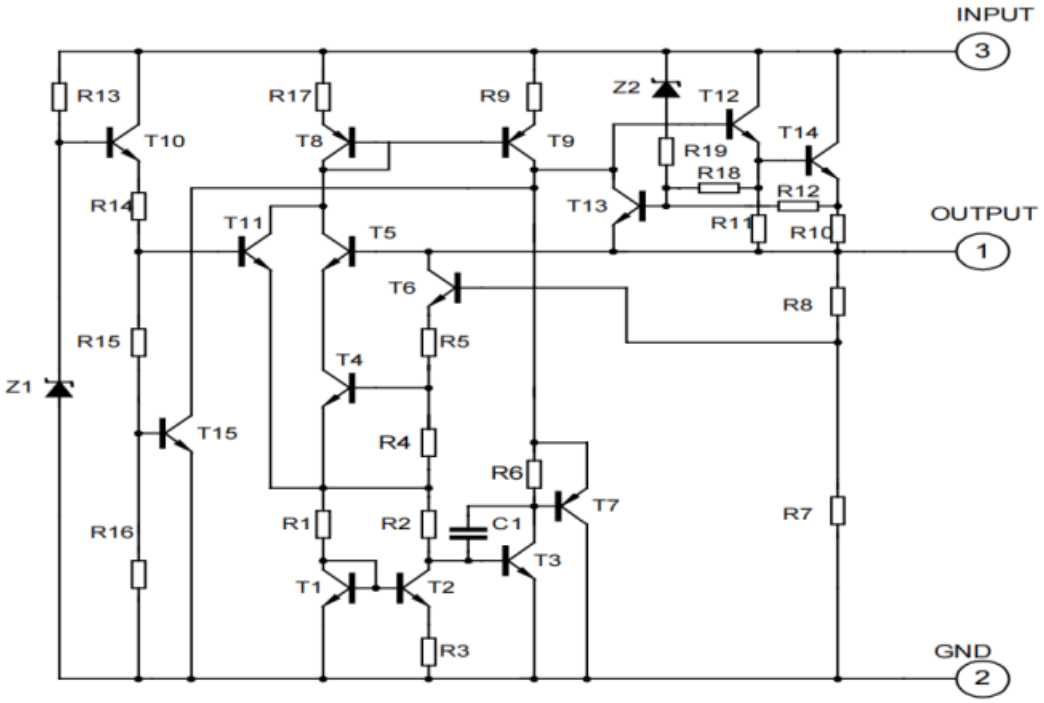
SOT-89

SOT-23

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
78L05A(GMIC)	SOP-8	78L05 47	REEL	2500PCS/REEL
78L05(GMIC)	SOT-89	78L05 47	REEL	1000PCS/REEL
78L05S(GMIC)	SOT-23-3	78L05 47	REEL	3000PCS/REEL

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

(Operating temperature range applies unless otherwise specified)

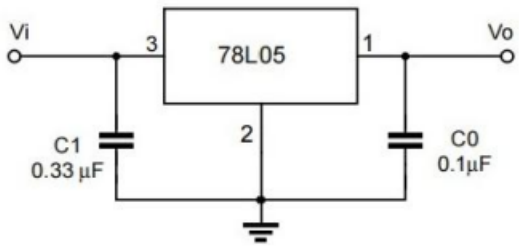
PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Input voltage(for V_o=5~9V)	V_I		32	V
Output Current	I_O		100	mA
Power Dissipation SOP-8 TO-92 SOT-89	P_D		 300 500 350	mW
operating Junction Temperature Range	T_{OPR}	-10	+110	°C
Storage Temperature Range	T_{STG}	-55	+150	°C

78L05 ELECTRICAL CHARACTERISTICS

(VI=10V,Io=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_o	Tj=25°C	4.80	5.0	5.20	V
		7V<=VK=20V,Io=5mA-40mA	4.75		5.25	V
Load Regulation	V_o	Ti=25°C,Io=5mA-100mA		11	80	mV
		Tj=25°C,Io=5mA-40mA		5.0	40	mv
Line regulaion	V_o	7V<=VI<=20V,Tj=25°C		8	150	mV
		8V<=VI<=20V,Tj=25°C		6	100	mV
Quiescent Current	△Iq	V_{IN}=10V,IO=0mA,Tj=25°C		2.0	5.5	mA
Quiescent Current Change	△Iq	8V<=V_I<=20V			1.5	mA
	△Iq	5mA<=V_I<=40mA			0.1	mA
Output Noise Voltage	VN	10Hz<=f<=100kHz		40		uV
Temperature coefficient of Vo	Vo/T	Io=5mA		-0.65		mV/C
Ripple Rejection	RR	8V<=V_I<=20V,f=120Hz,Tj=25°C	41	80		dB
Dropout Voltage	Vd	Tj=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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