

ELM78L05CG Bipolar Three-terminal positive-voltage regulator

■ General description

ELM78L05 is three-terminal positive-voltage regulator which consists of internal short circuit current limiting and internal thermal overload protection.

■ Features

- Maximum output current : 100mA
- No external component
- Output voltage : 5V
- Package : SOT-89

■ Application

- Linear regulator
- Switch power supply
- PCs

■ Maximum absolute ratings

Parameter	Symbol	Limit	Unit
Input voltage	V _{in}	30	V
Power dissipation (air temperature) *	P _d	500 (T _{op} ≤ 25°C)	mW
Power dissipation (case temperature) *		300 (T _{op} = 70°C)	
Storage temperature	T _{stg}	-65 ~ +150	°C
Operating junction temperature	T _{op}	0 ~ +125	°C
Lead temperature(soldering 10s.)	T _{lead}	260	°C

* To avoid exceeding the design maximum virtual junction temperature, maximum absolute ratings should not be exceeded. Due to variations individual device electrical characteristics and thermal resistance, the built in thermal overload protection may be activated at power levels slightly above or below the rated dissipation.

■ Recommended operating conditions

Parameter	Symbol	Limit	Unit
Input voltage	V _{in}	V _{out} =5V : 7~20	V
Output current (Max.)	I _{out}	100	mA

■ Selection guide

ELM78L05CG-S

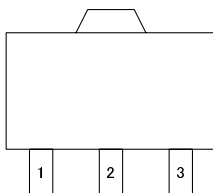
Symbol		
a,b	Output voltage	05 : 5V
c,d	Package	CG : SOT-89
e	Taping direction	S : Refer to PKG file

ELM78L 0 5 C G - S
↑ ↑ ↑ ↑ ↑
a b c d e

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Pin configuration

SOT-89 (TOP VIEW)



Pin No.	Pin name
1	VOUT
2	GND
3	VIN

Electrical characteristics (Vout=5.0V : ELM78L05CG)

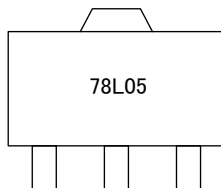
If not specified, Vin=10V, Iout=40mA, Cin=0.33μF, Cout=0.1μF, 0°C < Tj < 125°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Tj=25°C	4.8	5.0	5.2	V
		Vin=7V~20V, Iout=1mA~40mA	4.75		5.25	
		Vin=10V, Iout=1mA~70mA	4.75		5.25	
Line regulation	ΔVout/ΔVin	Tj=25°C, Iout=40mA, Vin=7V~20V		55	150	mV
		Tj=25°C, Iout=40mA, Vin=8V~20V		45	100	
Load regulation	ΔVout/ΔIout	Tj=25°C, Iout=1mA~100mA		11	60	mV
		Tj=25°C, Iout=1mA~40mA		5.0	30.0	
Input bias current	Ib	Tj=25°C		3.8	6.0	mA
		Tj=125°C			5.5	
Input bias current change	ΔIb	Vin=8V~20V			1.5	mA
		Iout=1mA~40mA			0.1	
Output noise voltage	Voutn	Ta=25°C, f=10Hz~100kHz		40		μV
Ripple rejection	RR	Tj=25°C, f=120Hz, Vin=8V~18V, Iout=40mA	41	49		dB
Dropout voltage	Vdif	Tj=25°C		1.7		V

Marking

- SOT-89 package : ELM78L05CG

SOT-89



Typical characteristics

