

1、Description

The 78L05 series of fixed voltage monolithic integrated circuit voltage regulators are suitable for application that required supply current up to 100mA.

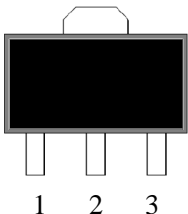
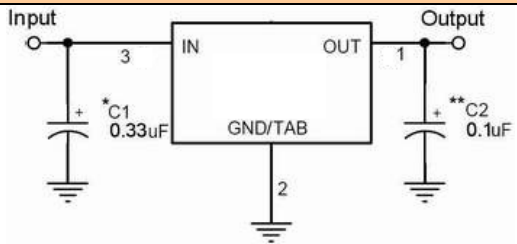
2、Applications

A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0V above the output voltage even during the low point on the input ripple voltage.

3、Features

- Output current up to 100mA
- No external components required
- Internal thermal overload protection
- Internal short-circuit current limiting
- Output transistor safe-area compensation
- Output voltage offered in 4% tolerance

4、Pinning information

PIN	Description	Simplified outline	Symbol
1	Output		
2	GND		
3	Input		

5、Absolute Maximum Rating

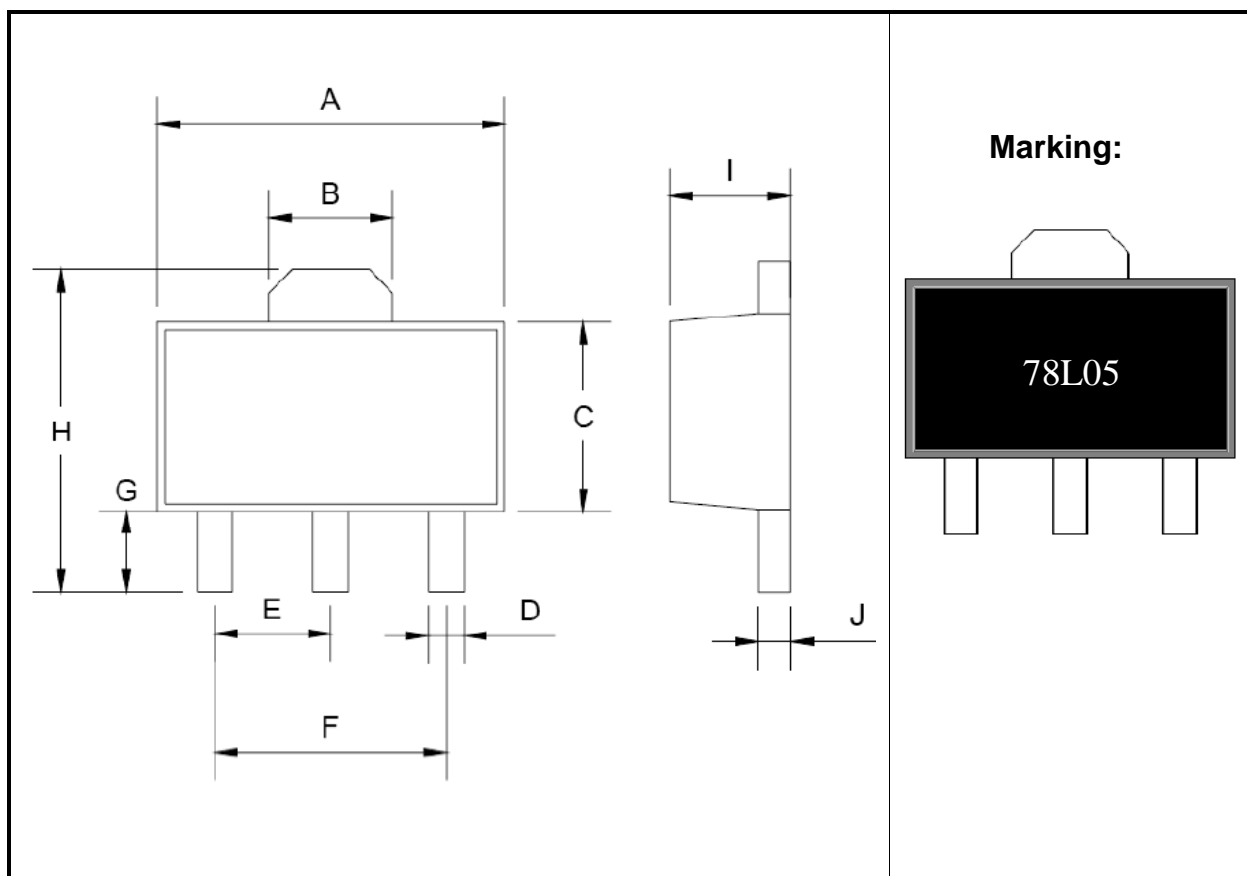
PARAMETER	SYMBOL	MAX	UNIT
Input Voltage	V _{in}	30	V
Power Dissipation	P _t	0.5	W
Operating Junction Temperature Range	T _j	0~+125	°C
Storage Temperature Range	T _{stg}	-65~+150	°C

6、Electrical Characteristics

($V_{in}=10V$, $I_{out}=40mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_{in}=0.33\mu F$, $C_{out}=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test Conditions		MIN	TYPE	MAX	UNIT
Output voltage	V_{out}	$T_j=25^{\circ}C$ PD<0.5W $7.5V < V_{in} < 20V$, $10mA < I_{out} < 100mA$		4.75	5.0	5.25	V
Line Regulation	REGline	$T_j=25^{\circ}C$	$7.5V < V_{in} < 20V$,		8	150	mV
			$8V < V_{in} < 20V$,		6	100	
Load Regulation	REGload	$T_j=25^{\circ}C$	$1mA < I_{out} < 100mA$		11	60	mV
			$1mA < I_{out} < 40mA$		5	30	
Quiescent Current	I_q	$I_{out}=0$, $T_j=25^{\circ}C$			4.2	8	mA
Quiescent Current Change	ΔI_q	$7.5V < V_{in} < 20V$,				1.5	mA
		$1mA < I_{out} < 40mA$				0.5	
Output Noise Voltage	V_n	$10HZ < f < 100KHZ$, $T_j=25^{\circ}C$			40		μV
Ripple Rejection Ratio	RR	$F=120HZ$, $8V < V_{in} < 18V$		62	78		dB
Voltage Drop	V_{drop}	$I_{out}=40mA$, $T_j=25^{\circ}C$			2		V
Output Resistance	R_{out}	$f=1KHZ$			17		$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$			750		mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$			2.2		A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=10mA$, $0^{\circ}C < T_j < 125^{\circ}C$			-0.6		$mV/^{\circ}C$

7、Package outline(SOT-89)



DIM	Inches			Millimeters		
	Min	Type	Max	Min	Type	Max
A	0.173	0.177	0.181	4.40	4.50	4.60
B	0.059	0.061	0.067	1.50	1.55	1.70
C	0.091	0.096	0.102	2.30	2.45	2.60
D	0.013	0.015	0.020	0.32	0.38	0.50
E	—	0.059	—	—	1.50	—
F	—	0.118	—	—	3.00	—
G	0.035	0.039	0.047	0.89	1.00	1.20
H	0.161	0.165	0.169	4.10	4.20	4.30
I	0.055	0.059	0.063	1.40	1.50	1.60
J	0.014	0.015	0.017	0.35	0.39	0.44