MOBICON
Electronic Components

S@Tech KOREA

FIXED VOLTAGE REGULATOR (POSITIVE)

LM78L05

3-TERMINAL 0.1A POSITIVE VOLTAGE REGULATORS

This series of fixed-voltage monolithic integrated-circuit voltage regulators is designed for a wide range of applications.

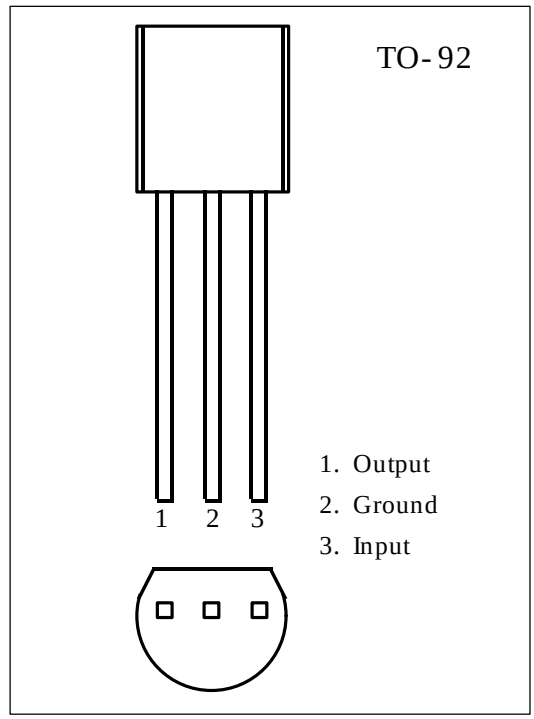
These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation.

In addition, they can be used with power-pass elements to make high current voltage regulators.

Each of these regulators can deliver up to 100mA output current.

The internal limiting and thermal shutdown features of these regulators make them essentially immune to overload.

When used as a replacement for a zener diode-resistor combination, an effective improvement in output impedance can be obtained together with lower-bias current.



FEATURES

- ◇Output current up to 100mA
- ◇No External Components
- ◇Internal Thermal Overload Protection
- ◇Internal Short-Circuit Limiting
- ◇Output Voltage of 5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V and 24V

ABSOLUTE MAXIMUM RATINGS

Characteristic		Symbol	Value	Unit
Input Voltage	LM78L05 ~ LM78L10	V_I	30	V
	LM78L12 ~ LM78L18		35	
	LM78L24		40	
Operating Junction Temperature		T_{opr}	0 ~ +150	℃
Storage Temperature		T_{stg}	-65 ~ +150	
Soldering Temperature and Time		T_{sol}	260/10sec	

MADE IN KOREA

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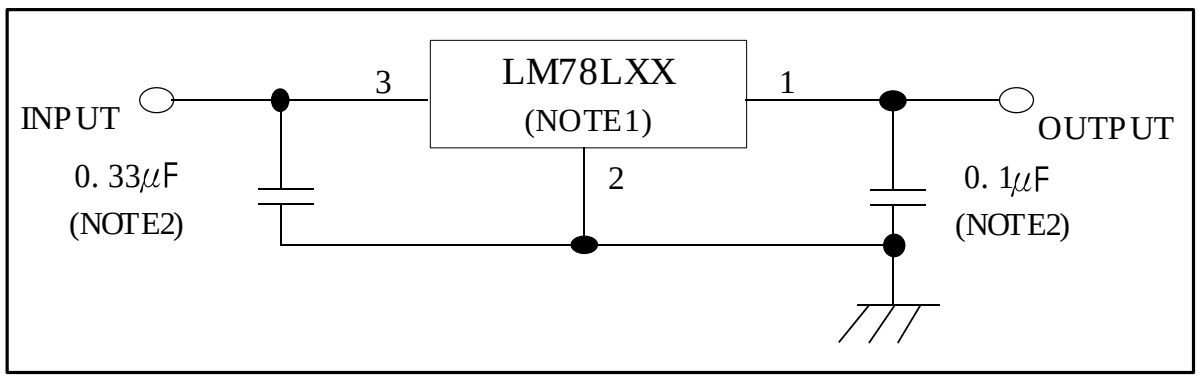
RECOMMENDED OPERATING CONDITIONS

Characteristic		Min.	Max.	Unit
Input Voltage, V_I	LM78L05	7	20	V
	LM78L06	8	20	
	LM78L08	10.5	23	
	LM78L09	11.5	24	
	LM78L10	12.5	25	
	LM78L12	14.5	27	
	LM78L15	17.5	30	
	LM78L18	20.5	33	
	LM78L24	26.5	39	
Output Current, I_O			100	mA
Operating Virtual Junction Temperature, T_j		0	125	℃

TYPICAL APPLICATION



Notes

1. To specify an output voltage, substitute voltage for "XX"
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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LM78L05 ELECTRICAL CHARACTERISTICS

(At specified virtual junction temperature, V_I=10V, I_O=40mA (unless otherwise noted)

Characteristic	Symbol	Test Condition *		Min.	Typ.	Max.	Unit
Output Voltage **	V_{OUT}	25°C		4.8	5	5.2	V
		1mA≤I_O≤40mA 7V≤V_I≤Vmax	0°C ~ 125°C	4.75	5	5.25	
		1mA≤ I_O≤ 70mA		4.75	5	5.25	
Line Regulation	Reg line	7V≤ V_I≤20V	25°C		32	150	mV
		8V≤ V_I≤20V			26	100	
Load Regulation	Reg load	1mA≤I_O≤100mA	25°C		15	60	mV
		1mA≤I_O≤40mA			8	30	
Bias Current	I_B		25°C		3.8	6	mA
			125°C			5.5	
Bias Current Change	ΔI_B	9V≤ V_I≤20V	0°C ~ 125°C			1.5	mA
		1mA≤I_O≤40mA				0.1	
Output Noise Voltage	V_N	10Hz ≤f≤100kHz	25°C		42		μV
Ripple Rejection	RR	8V≤ V_I≤18V f=120Hz	25°C	41	49		dB
Dropout Voltage	V_D		25°C		1.7		V

Notes

*. Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible.

Thermal effects must be taken into account separately.

All characteristics are measured with a 0.33μF capacitor across the input and a 0.1μF capacitor across the output.

**. This specification applies only for DC power dissipation permitted by absolute maximum ratings.