

Positive-Voltage Regulators



PRELIMINARY
Rev.1 Nov. 2017

	78L05nd7
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- 3-Terminal Regulators
- Output Current Up to 100mA
- No External Components
- Internal Thermal Overload Protection
- Internal Short-Circuit Limiting
- Direct Replacement for Fairchild μ A78L00 Series

DESCRIPTION

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 of 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.

Nominal output voltage	Regulator
3V	78L03nd7
3.3V	78L33nd7
5V	78L05nd7
6V	78L06nd7
8V	78L08nd7
9V	78L09nd7
10V	78L10nd7
12V	78L12nd7
15V	78L15nd7
18V	78L18nd7
24V	78L24nd7

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(TOP VIEW)**



Absolute maximum ratings over operating temperature range (unless otherwise noted)

	78L03nd7 thru 78L10nd7	78L12nd7 thru 78L18nd7	78L24nd7	UNIT
Input voltage	30	35	40	V
Operating free-air, case, or virtual junction temperature range	-40 to 125	-40 to 125	-40 to 125	°C
Storage temperature range	-65 to 150	-65 to 150	-65 to 150	
Lead temperature 1.6 mm (1/16 inch) from case for 10 seconds	260	260	260	

Recommended operating conditions

Parameter	MIN	MAX	UNIT	
Input voltage, V_I	78L03nd7	5.5	18	V
	78L33nd7	5.5	18	
	78L05nd7	7	20	
	78L06nd7	8	20	
	78L08nd7	10.5	23	
	78L09nd7	11.5	24	
	78L10nd7	12.5	25	
	78L12nd7	14.5	27	
	78L15nd7	17.5	30	
	78L18nd7	20.5	33	
	78L24nd7	26.5	39	
Output current, I_O		100	mA	
Operating virtual junction temperature, T_J	0	125	°C	

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VSP MIKRON

78L05nd7

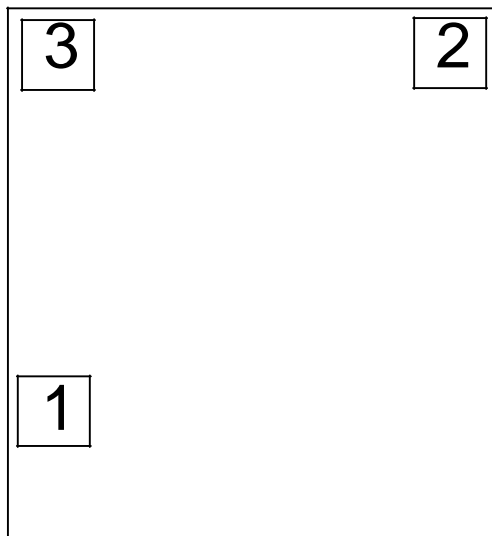
78L05nd7 electrical characteristics at specified virtual junction temperature, $V_I=10V$, $I_O=40mA$ (unless otherwise noted)

PARAMETER	TEST CONDITIONS*		78L05nd7			UNIT
			MIN	TYP	MAX	
Output voltage**		25°C	4.95	5	5.05	V
	$I_O=1mA$ to 40mA $V_I=7V$ to 20V	0 to 125°C	4.9	5	5.1	
	$I_O=1mA$ to 70mA		4.9	5	5.1	
Input regulation	$V_I=7V$ to 20V	25°C		32	150	mV
	$V_I=8V$ to 20V			26	100	
Ripple rejection	$V_I=8V$ to 18V, $f=120Hz$	25°C	41	49		dB
Output regulation	$I_O=1mA$ to 100mA	25°C		15	60	mV
	$I_O=1mA$ to 40mA			8	30	
Output noise voltage	$f=10Hz-100Hz$	25°C		42		µV
Dropout voltage		25°C		1.7		V
Bias current		25°C		1.9	6	mA
		125°C			5.5	
Bias current change	$V_I=8V$ to 20V	0 to 125°C			1.5	
	$I_O=1mA$ to 40mA				0.1	

*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.

Pad location 78LXXnd7



Wafer Thickness: 460±30µm (or 280±30µm)
 Top metal: AlSi
 Backside metal: -
 Wafer size: 150mm

Chip size : 0,59 x 0,64 mm

Pad №	Pad Name	X(um)	Y(um)	Pad size (um)
1	GROUND	100	200	80 x 80
2	INPUT	490	540	80 x 80
3	OUTPUT	100	540	80 x 80