78L05APT

DATASHEET

Specification Revision History:

Version	Date	Description
V1.0	2020/06	New
V1.1	2021/05	Modify Ordering Information
V1.2	2023/02	Modify Ordering Information
V1.3	2025/05	Add application precautions and overall typesetting.

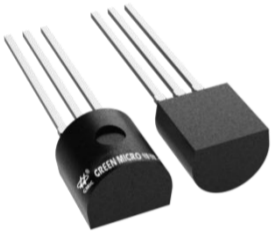
Features

※ 3-Terminal Regulators
※ Output Current Up to 100mA
※ No External Components
※ Internal Thermal Overload Protection
※ Internal Short-Circuit Limiting
※ Direct Replacement for Fairchild μA78L00 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 termal 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.

The appearance of the product



TO-92



1、OUTPUT
2、GND
3、INPUT

Ordering Information

Product Model	Package Type	Packing	Packing Qty
78L05APT	TO-92	Bulk	1000PCS/BAG
78L05	TO-92	Bulk	1000PCS/BAG

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

	78L03 thru 78L10	78L12 thru 78L18	78L24	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

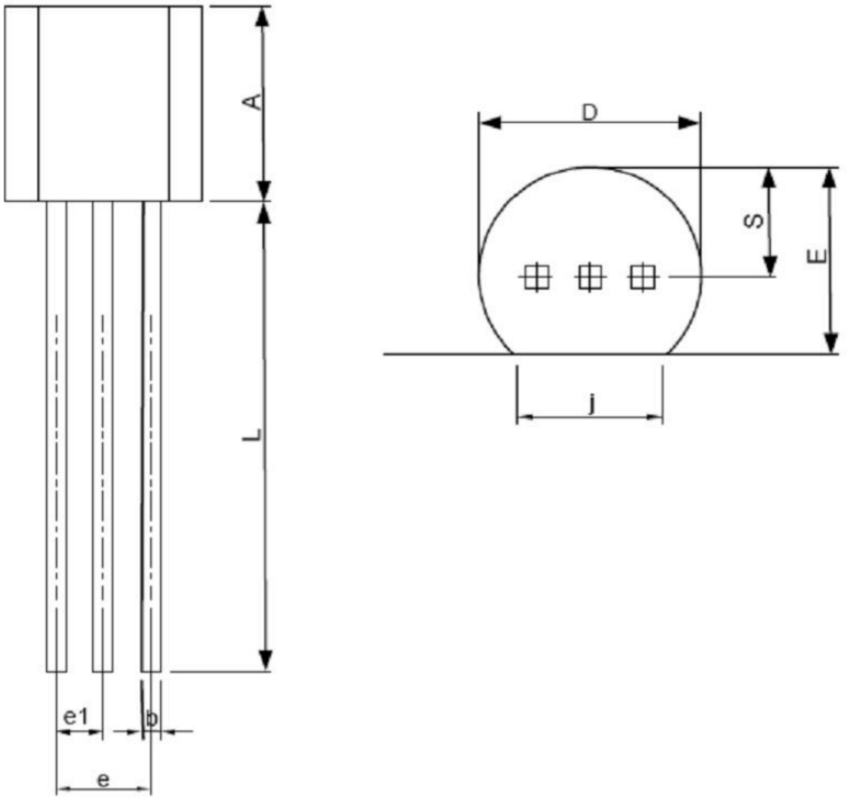
Parameter		MIN	MAX	UNIT
Input voltage, V_I	78L03	5.5	18	V
	78L33	5.5	18	
	78L05	7	20	
	78L06	8	20	
	78L08	10.5	23	
	78L09	11.5	24	
	78L10	12.5	25	
	78L12	14.5	27	
	78L15	17.5	30	
	78L18	20.5	33	
	78L24	26.5	39	
Output current, Io			100	mA
Operating virtual junction temperature, T_J		0	125	°C

78L05 electrical characteristics at specified virtual junction temperature, V_I=10V, I_O=40mA (unless otherwise noted)

PARAMETER	TEST CONDITIONS*		78L05			UNIT
			MIN	TYP	MAX	
Output voltage**		25 °C	4.8	5	5.2	V
	I_O=1mA to 40mA V_I=7V to 20V	0 to 125 °C	4.75	5	5.25	
	I_O=1mA to 70mA		4.75	5	5.25	
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	

Outline Dimensions

TO-92



Symbol	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	4.32	5.33	0.170	0.210
b	0.41	0.53	0.016	0.021
D	4.45	5.20	0.175	0.205
E	3.18	4.19	0.125	0.165
e	2.42	2.66	0.095	0.105
e1	1.15	1.39	0.045	0.055
J	3.43	4.00	0.135	0.157
L	12.70	15.00	0.500	0.591
S	2.03	2.66	0.080	0.105

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