

## 78L05ACZ - 78L12ACZ

# **Positive Voltage Regulators**

### **GENERAL DESCRIPTION**

This series of fixed-voltage 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. Each of these regulators can deliver up to 100 mA of output current. The internal limiting and thermal-shutdown features of these regulators them essentially immune to overload. Compliance to RoHS.

#### **FEATURES**

- 3-Terminal Regulators
- Output Current up to 100 mA
- No External Components
- Short circuit Protection
- Internal Thermal-Overload Protection
- With TO92 package

### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
Vı	Input Voltage DC	$V_o = 5 V$	30	V
		$V_o = 12 V$	35	V
l <sub>o</sub>	Output Current		100	mA
PD	Power Dissipation		Internally Limited	
T <sub>OP</sub>	Operating Junction Temperature		0° to 125	°C
T <sub>STG</sub>	Storage Temperature		-40° to 150	°C

### THERMAL DATA

Symbol	Ratings	Value	Unit
R <sub>thJA</sub>	From Junction to Free-Air Thermal Resistance	200	°C/W



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### **ELECTRICAL CHARACTERISTICS OF 78L05ACZ**

 $V_i$  = 10 V;  $I_0$  = 40 mA;  $T_c$  = 25°C

Symbol	Ratings	Test Condition(s)	MIN	ТҮР	MAX	UNIT
vo	Output Voltage	$T_{\rm C} = 25^{\circ}{\rm C}$	4.8	5	5.2	V
		$V_i = 7 V \text{ to } 20 V$ $I_0 = 1 \text{ mA to } 40 \text{ mA}$	4.75	5	5.25	
		$I_0 = 1 \text{ mA to } 70 \text{ mA}$	4.75	5	5.25	
$\Delta V_{o}$	Line Regulation	$7 \text{ V} \leq V_i \leq 20 \text{ V}$	-	-	150	mV
		$8 V \le V_i \le 20 V$	-	-	100	
Δ V <sub>o</sub>	Load Regulation	$I_0 = 1 \text{ mA to } 100 \text{ mA}$	-	-	60	mV
		$I_0 = 1 \text{ mA to } 40 \text{ mA}$	-	-	30	
I <sub>B</sub>	Quiescent Current		-	-	6	mA
$\Delta I_{B1}$	Quiescent Current Change	$8~V \le V_i \le 20~V$	-	-	1.5	mA
Δ I <sub>B2</sub>	Quiescent Current Change	$I_0 = 1 \text{ mA to } 40 \text{ mA}$	-	-	0.1	mA

### **ELECTRICAL CHARACTERISTICS OF 78L12ACZ**

#### $V_{i}$ = 19 V; $I_{O}$ = 40 mA; $T_{C}$ = 25°C

Symbol	Ratings	Test Condition(s)	MIN	ТҮР	MAX	UNIT
vo	Output Voltage	$T_{\rm C} = 25^{\circ}{\rm C}$	11.5	12	12.5	V
		$V_i = 14.5 V \text{ to } 27 V$ $I_0 = 1 \text{ mA to } 40 \text{ mA}$	11.4	12	12.6	
		$I_0 = 1 \text{ mA to } 70 \text{ mA}$	11.4	12	12.6	
A 1/	Line Regulation	14.7 V $\leq$ V <sub>i</sub> $\leq$ 27 V	-	-	250	mV
Δνο		$16 \text{ V} \leq \text{V}_i \leq 27 \text{ V}$	-	-	200	
Δ V <sub>o</sub>	Load Regulation	$1 \text{ mA} \le I_0 \le 100 \text{ mA}$	-	-	100	mV
		$1 \text{ mA} \le I_0 \le 40 \text{ mA}$	-	-	50	
I <sub>B</sub>	Quiescent Current		-	-	6.5	mA
$\Delta I_{B1}$	Quiescent Current Change	$16~V \leq V_i \leq 27~V$	-	-	1.5	mA
$\Delta I_{B2}$	Quiescent Current Change	$1 \text{ mA} \leq I_O \leq 40 \text{ mA}$	-	-	0.1	mA



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### MECHANICAL DATA CASE TO92 REGULATOR

Pin 1 :	Input
Pin 2 :	GND
Pin 3 :	Output

DIMENSIONS				
mm	Min	Max		
А	4,45	4,95		
В	4,32	4,95		
С	12,70	15,49		
D	0,41	0,56		
E	3,43	3,43		
F	2,41	2,67		
G	1,14	1,40		
Н	3,30	3,94		
I	2,38	2,42		
J	2,38	2,42		



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