



## Three Terminal Regulator 78LXXS

#### **FEATURES**

- Maximum Output current Io: 0.1 A
- Output voltage Vo: 5 V
- Continuous total dissipation PD:0.35 W (Ta =25)

## ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies)

| Parameter                            | Symbol    | Value   | Unit                    |
|--------------------------------------|-----------|---------|-------------------------|
| Input Voltage                        | VI        | 30      | V                       |
| Operating Junction Temperature Range | $T_{OPR}$ | 0-125   | $^{\circ}\! \mathbb{C}$ |
| Storage Temperature Range            | $T_{STG}$ | -65-150 | $^{\circ}$ C            |



#### $\textbf{ELECTRICAL CHARACTERISTICS} \ (\text{Vi=}10\text{V,Io=}40\text{mA,Ci=}0.33} \ \mu \ \text{F,Co=}0.1 \ \mu \ \text{F}, \quad 25^{\circ}\text{C} \ \ \text{unless otherwise specified} \ )$

| Parameter                | Symbol         | Test conditions        | Min    | Тур  | Max | Unit |    |
|--------------------------|----------------|------------------------|--------|------|-----|------|----|
|                          |                |                        | 25℃    | 4.8  | 5.0 | 5.2  | V  |
| Output voltage           | Vo             | 7V≤Vi≤20V, Io=1mA~40mA | 0-125℃ | 4.75 | 5.0 | 5.25 | V  |
|                          |                | Io=1mA~70mA            |        | 4.75 | 5.0 | 5.25 | v  |
| Load Regulation          | ΔVο            | Io=1mA~100mA           | 25℃    |      | 15  | 60   | mV |
|                          |                | Io=1mA~40mA            | 25℃    |      | 8   | 30   | mV |
| Line regulation          | ΔVο            | 7V≤Vi≤20V              |        |      | 32  | 150  | mV |
|                          |                | 8V≤Vi≤20V              | 25℃    |      | 26  | 100  | mV |
| Quiescent Current        | Iq             |                        | 25℃    |      | 3.8 | 6    | mA |
| Quiescent Current Change | ΔIq            | 8V≤Vi≤20V              | 0-125℃ |      |     | 1.5  | mA |
|                          | ΔIq            | 1mA≤V <u>≤</u> 40mA    | 0-125℃ |      |     | 0.1  | mA |
| Output Noise Voltage     | V <sub>N</sub> | 10Hz≤f≤100KHz          | 25℃    |      | 42  |      | uV |
| Ripple Rejection         | RR             | 8V≤Vi≤20V,f=120Hz      | 0-125℃ | 41   | 49  |      | dB |
| Dropout Voltage          | Vd             |                        | 25℃    |      | 1.7 |      | V  |

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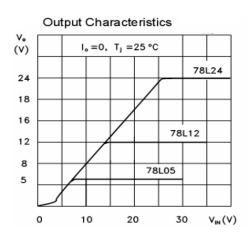
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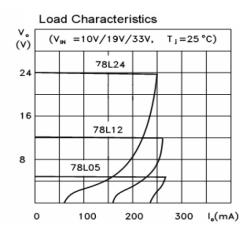






### **Typical Performance Characteristics**





Thermal Shutdown

V<sub>o</sub>
(V)

(V<sub>IN</sub>=10V\19V\33V, I<sub>o</sub>=0mA)

30

25

78L24

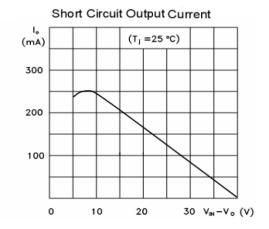
20

15

78L12

10

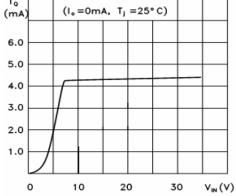
78L05



Quiescent Current vs Input Voltage

100

T<sub>A</sub>(°C)



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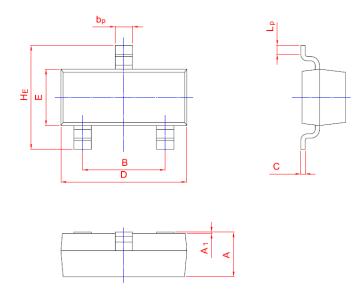






#### PACKAGE OUTLINE

### Plastic surface mounted package; 3 leads



| UNIT | Α            | В            | bp           | С            | D            | E            | HE           | <b>A</b> 1     | Lp |
|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----|
| mm   | 1.40<br>0.95 | 2.04<br>1.78 | 0.50<br>0.35 | 0.19<br>0.08 | 3.10<br>2.70 | 1.65<br>1.20 | 3.00<br>2.20 | 0.100<br>0.013 |    |

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