

# L78M05CDT-TR

## 1A Fixed Voltage Regulators

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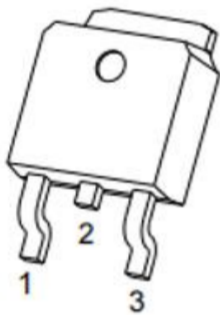
### Features

- 3-Terminal regulators
- Maximum Output current 1A
- Output voltage  $V_o$ : 5V
- Compact package: TO-252-2L

### Applications

- HVAC Systems
- SMPS Post Regulation
- Test and Measurement Equipment
- Industrial Power Supplies

### PIN CONFIGURATION



- 1.VIN  
2.GND  
3.OUT

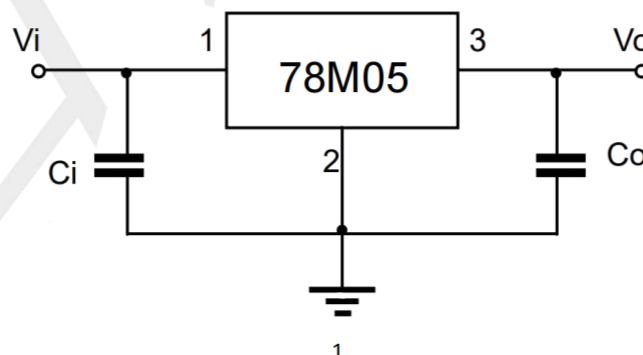
| Pin Number | Pin Name | Pin Function            |
|------------|----------|-------------------------|
| 1          | VIN      | Input of Supply Voltage |
| 2          | GND      | Ground                  |
| 3          | VOUT     | Output of the Regulator |

### Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)

| Symbol          | Parameter                                                 | Rating   | UNIT |
|-----------------|-----------------------------------------------------------|----------|------|
| VIN             | Input voltage                                             | 35       | V    |
| $R_{\theta JA}$ | Thermal Resistance Junction-ambient to Air                | 80       | °C/W |
| PD              | Continuous total dissipation ( $T_a = 25^\circ\text{C}$ ) | 1.25     | W    |
| TOPR            | Operating Junction Temperature Range                      | -40~+125 | °C   |
| Tstg            | Storage temperature range                                 | -65~+150 | °C   |

### TYPICAL APPLICATION



### Electrical Characteristics

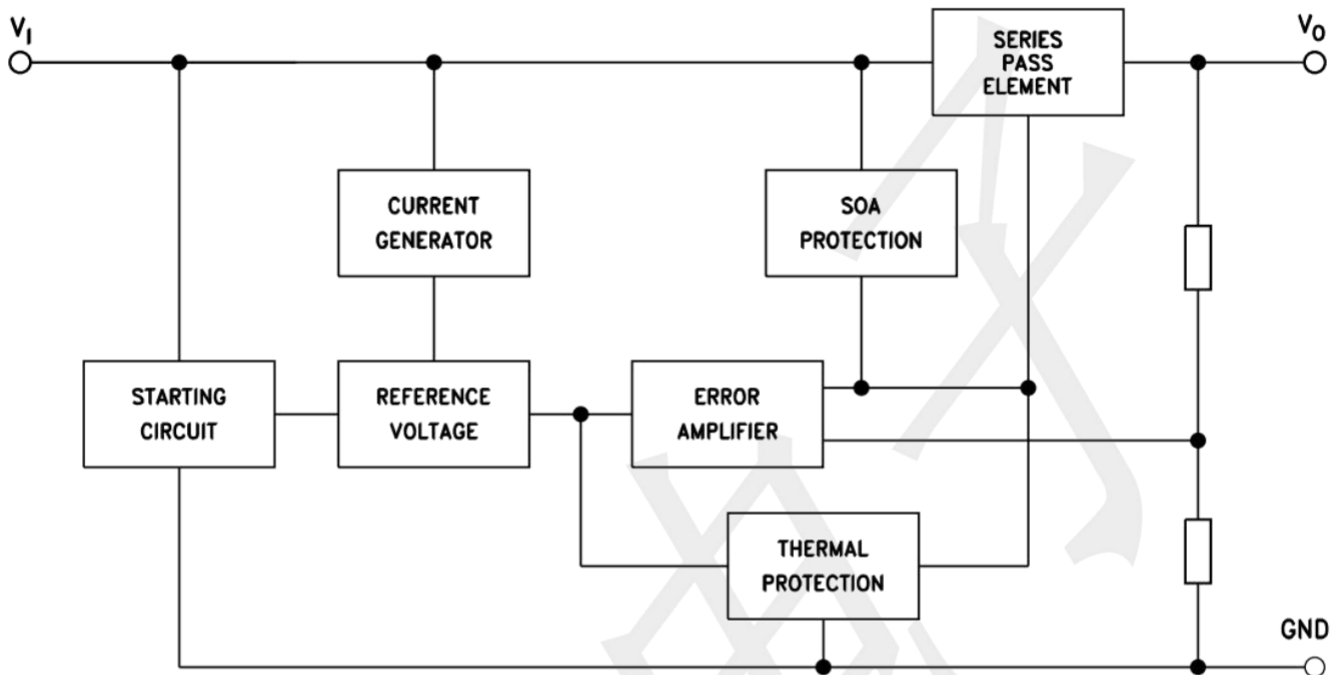
( $V_i=10V$ ,  $I_o=500mA$ ,  $0<T_J<125^{\circ}C$ ,  $C_i=0.33\mu F$ ,  $C_o=0.1\mu F$ , unless otherwise specified)

| AMETER                   | SYMBOL                | TEST Conditions                                       | MIN  | TYP | MAX  | UNIT            |
|--------------------------|-----------------------|-------------------------------------------------------|------|-----|------|-----------------|
| DC Output Voltage        | VO                    | $T_J=25^{\circ}C$                                     | 4.8  | 5.0 | 5.2  | V               |
|                          |                       | $P_D<15W$<br>$V_i=8V$ to $20V$ ,<br>$I_o=5mA$ to $1A$ | 4.75 | 5.0 | 5.25 | V               |
| Load Regulation          | $\Delta V_o$          | $T_J=25^{\circ}C$ $I_o=5mA$ to $1A$                   | --   | --  | 100  | mV              |
|                          |                       | $T_J=25^{\circ}C$<br>$I_o=250mA$ to $750mA$           | --   | --  | 50   | mV              |
| Line regulation          | $\Delta V_o$          | $T_J=25^{\circ}C$<br>$V_i=7.5V$ to $25V$              | --   | --  | 100  | mV              |
|                          |                       | $T_J=25^{\circ}C$<br>$V_i=8V$ to $12V$                | --   | --  | 50   | mV              |
| Quiescent Current        | $I_q$                 | $T_J=25^{\circ}C$                                     | --   | --  | 8.0  | mA              |
| Quiescent Current Change | $\Delta I_q$          | $V_i=8V$ to $25V$                                     | --   | --  | 0.8  | mA              |
|                          |                       | $I_o=5mA$ to $1A$                                     | --   | --  | 0.5  | mA              |
| Output Voltage Drift     | $\Delta V_o/\Delta T$ | $I_o=5mA$                                             | --   | 0.8 | --   | mV/ $^{\circ}C$ |
| Output Noise Voltage     | $V_N$                 | $T_J=25^{\circ}C$<br>$10Hz \leq f \leq 100KHz$        | --   | 42  | --   | $\mu V/V_o$     |
| Ripple Rejection         | RR                    | $V_i=8V$ to $18V$ , $f=120Hz$                         | 63   | 72  | --   | dB              |
| Dropout Voltage          | $V_d$                 | $I_o=300mA$ $T_J=25^{\circ}C$                         | --   | 1.0 | --   | V               |
| Peak Current             | $I_{pk}$              | $T_J=25^{\circ}C$                                     | --   | 1.0 | --   | A               |

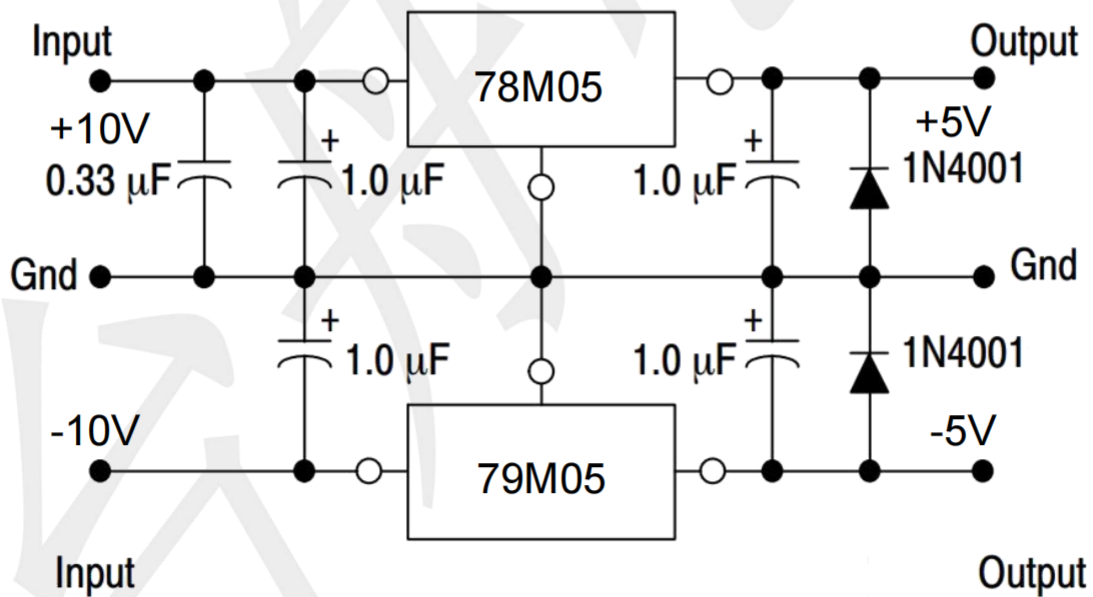
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### BLOCK DIAGRAM



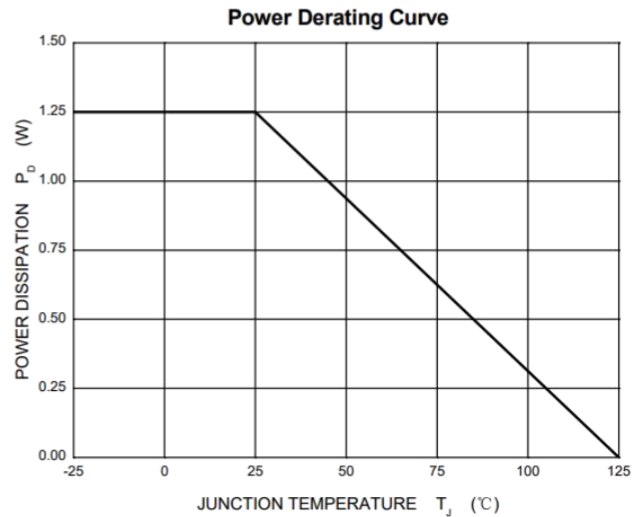
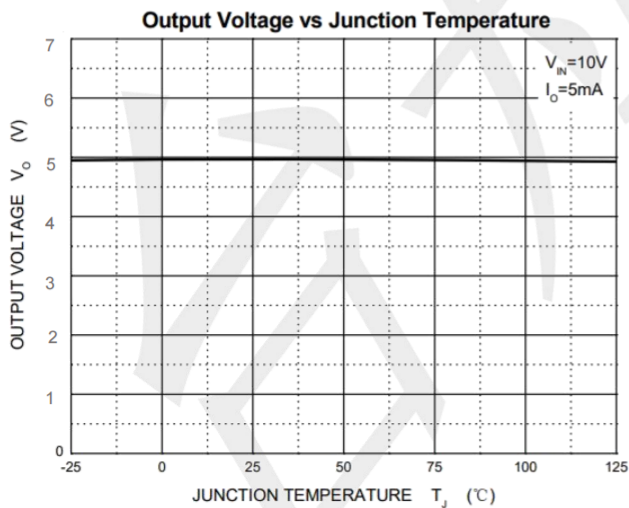
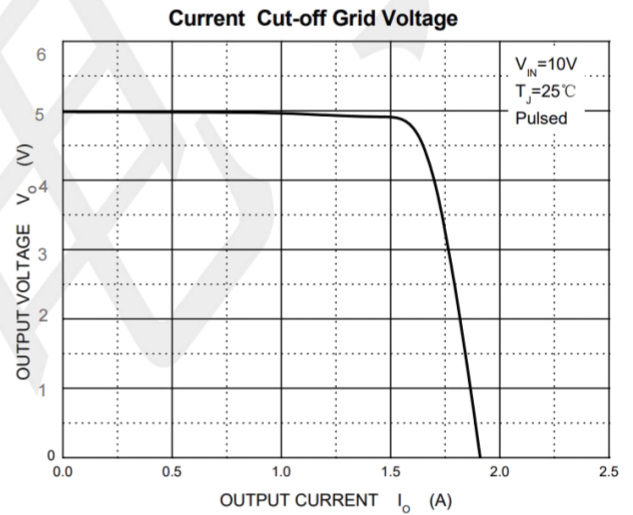
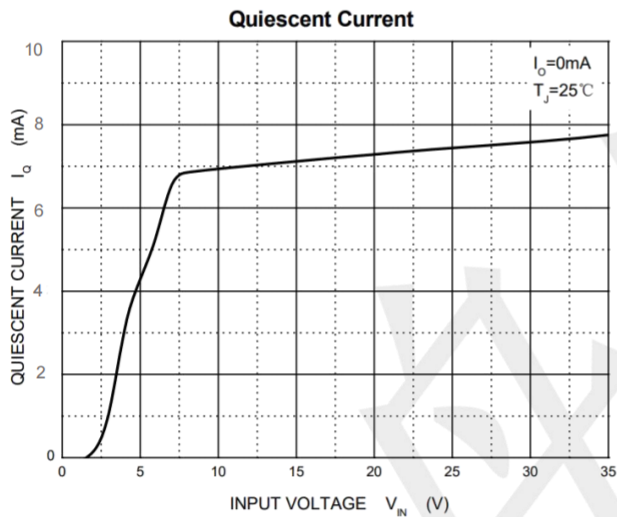
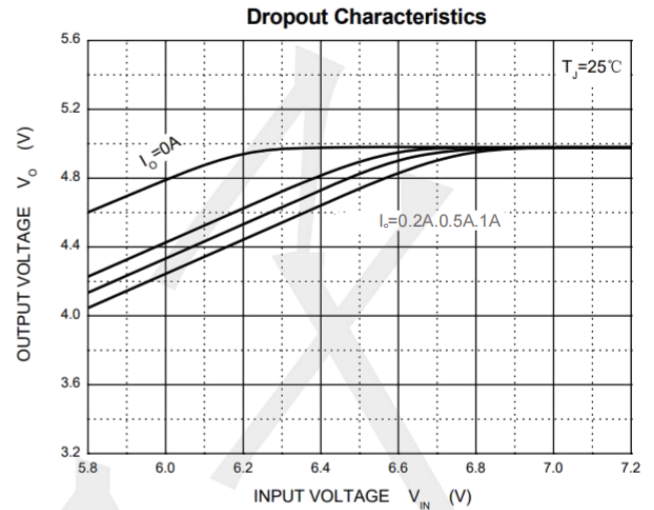
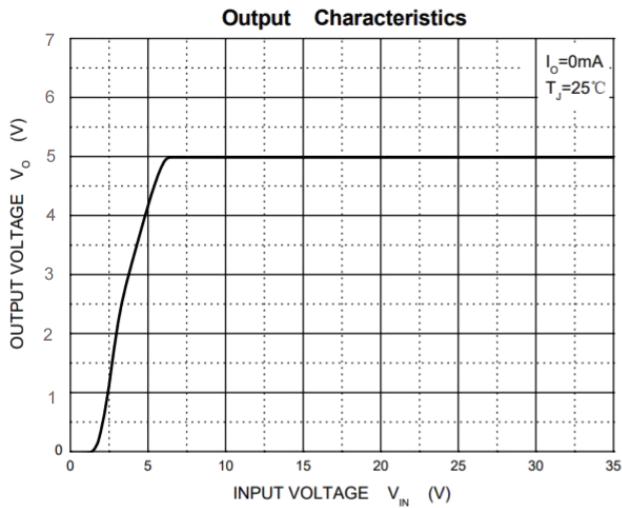
### Typical Application Circuit



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**Typical Operating Characteristics** (25 °C, unless otherwise noted)

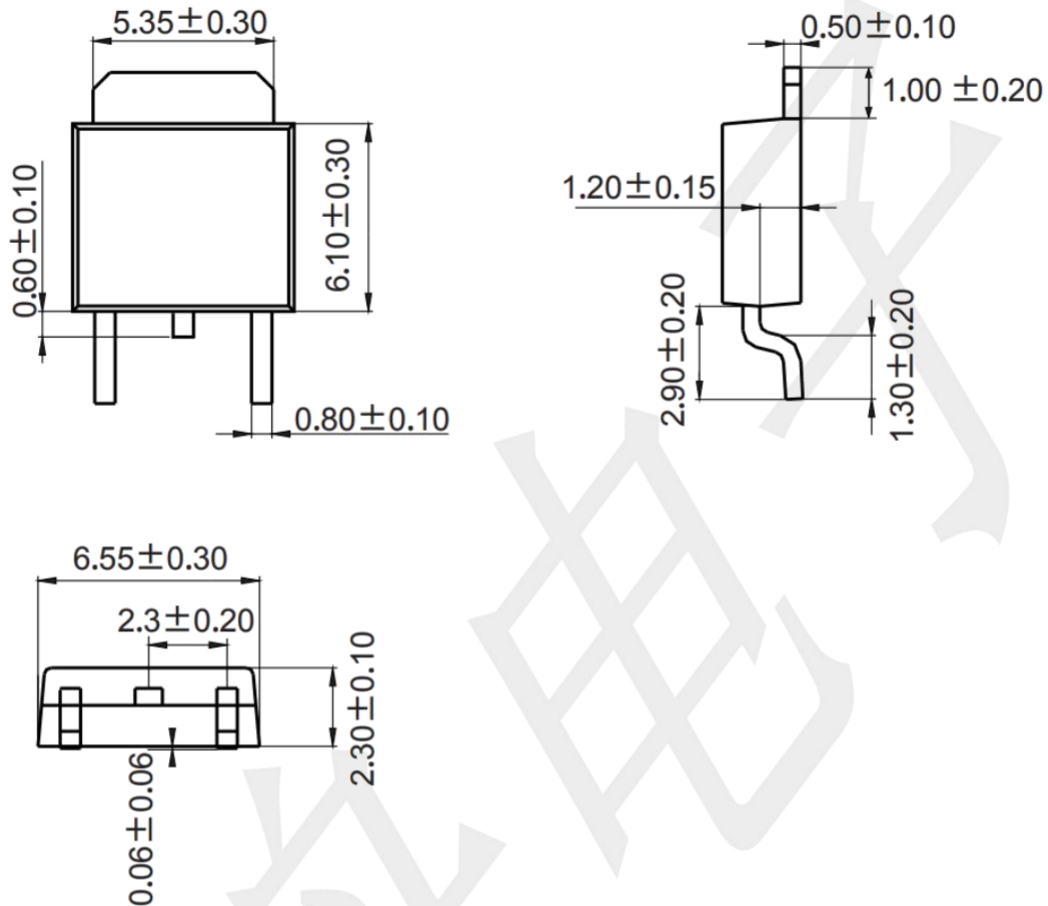


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## 1A Fixed Voltage Regulators

### Package Outline Dimensions (unit: mm)

TO-252-2L



### Mounting Pad Layout (unit: mm)

