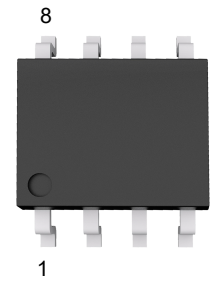


### Features

- Input voltage: up to 35V
- Output voltage: 5V
- Output current up to 100 mA, internal thermal overload protection and short-circuit current limiting.

### SOP-8



1. VOUT 2. GND 3. GND 4. NC  
5. NC 6. GND 7. GND 8. VIN

**Marking Code : 78L05**

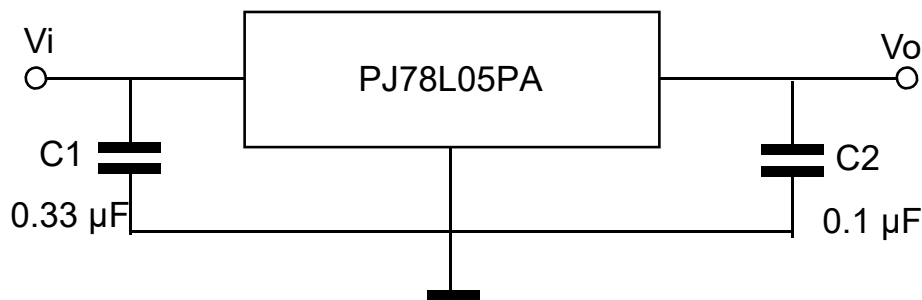
### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter                   | Symbol    | Value       | Unit |
|-----------------------------|-----------|-------------|------|
| Input Voltage               | $V_I$     | 35          | V    |
| Output Current              | $I_O$     | 100         | mA   |
| Junction Temperature        | $T_J$     | 150         | °C   |
| Operating Temperature Range | $T_{OPR}$ | -40 to +125 | °C   |
| Storage Temperature Range   | $T_{STG}$ | -55 to +150 | °C   |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

### Test Circuit



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.



# PJ78L05PA

## 3-Terminal Voltage Regulator

### Electrical Characteristics

Ratings at  $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$   $V_I=10\text{V}$ ,  $I_O=40\text{mA}$ ,  $C_I=0.33\mu\text{F}$ ,  $C_O=0.1\mu\text{F}$ , unless otherwise specified.

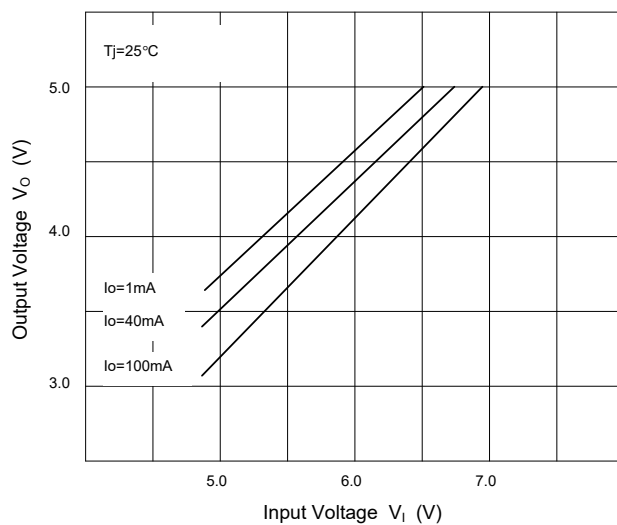
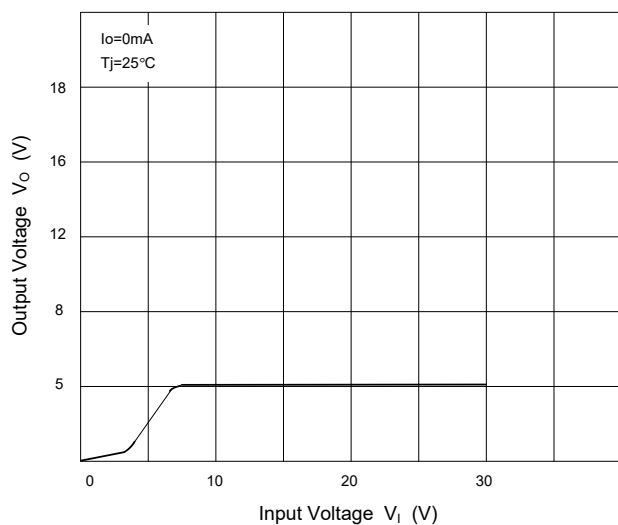
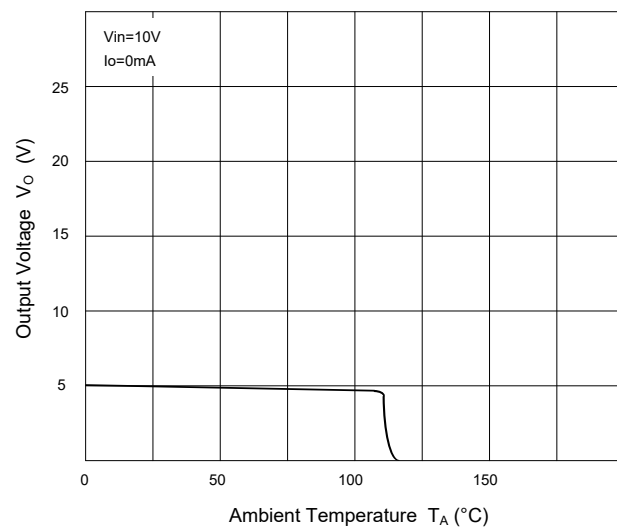
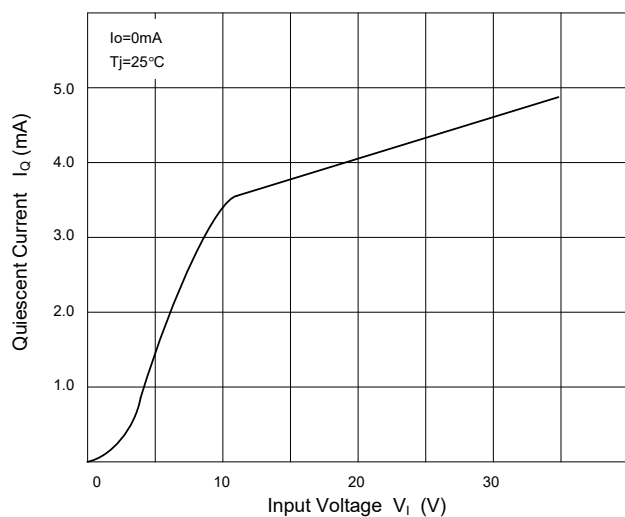
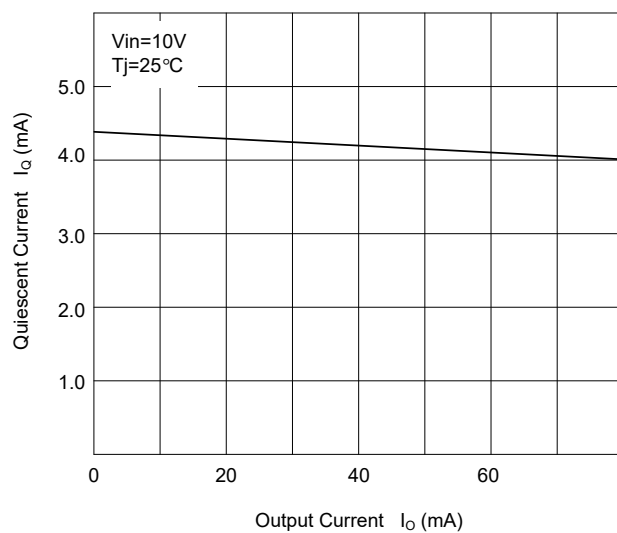
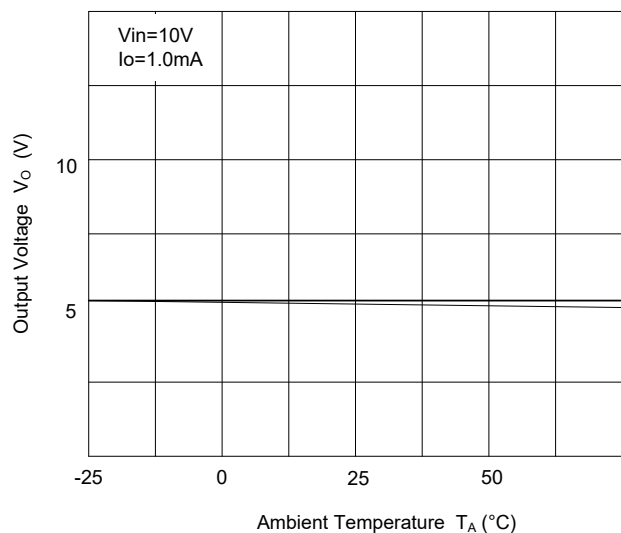
| Parameter                | Symbol       | Test Conditions                                                                 | Min. | Typ. | Max. | Unit          |
|--------------------------|--------------|---------------------------------------------------------------------------------|------|------|------|---------------|
| Output Voltage           | $V_O$        | $T_J=25^{\circ}\text{C}$                                                        | 4.80 | 5.0  | 5.2  | V             |
|                          |              | $I_O=1\text{mA to } 40\text{mA}$ ,<br>$V_I=7\text{V to } 20\text{V}$            | 4.75 | 5.0  | 5.25 | V             |
|                          |              | $I_O=1\text{mA to } 70\text{mA}$ , $V_I=10\text{V}$                             | 4.75 | 5.0  | 5.25 | V             |
| Line Regulation          | $\Delta V_O$ | $V_I=7\text{V to } 20\text{V}$ , $T_J=25^{\circ}\text{C}$                       | --   | --   | 150  | mV            |
|                          |              | $V_I=8\text{V to } 20\text{V}$ , $T_J=25^{\circ}\text{C}$                       | --   | --   | 100  | mV            |
| Load Regulation          | $\Delta V_O$ | $I_O=1\text{mA to } 100\text{mA}$ , $T_J=25^{\circ}\text{C}$                    | --   | --   | 60   | mV            |
|                          |              | $I_O=1\text{mA to } 40\text{mA}$ , $T_J=25^{\circ}\text{C}$                     | --   | --   | 30   | mV            |
| Ripple Rejection         | RR           | $V_I=8\text{V to } 20\text{V}$ ,<br>$f=120\text{Hz}$ , $T_J=25^{\circ}\text{C}$ | 40   | 49   | --   | dB            |
| Dropout Voltage          | $V_D$        | $T_J=25^{\circ}\text{C}$                                                        | --   | 1.7  | --   | V             |
| Quiescent Current        | $I_Q$        |                                                                                 | --   | 3.8  | 6    | mA            |
| Quiescent Current Change | $\Delta I_Q$ | $V_I=8\text{V to } 20\text{V}$                                                  | --   | --   | 1.5  | mA            |
|                          |              | $I_O=1\text{mA to } 40\text{mA}$                                                | --   | --   | 0.1  | mA            |
| Output Noise Voltage     | $V_N$        | $10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_J=25^{\circ}\text{C}$              | --   | 42   | --   | $\mu\text{V}$ |



# PJ78L05PA

## 3-Terminal Voltage Regulator

### Typical Characteristic Curves



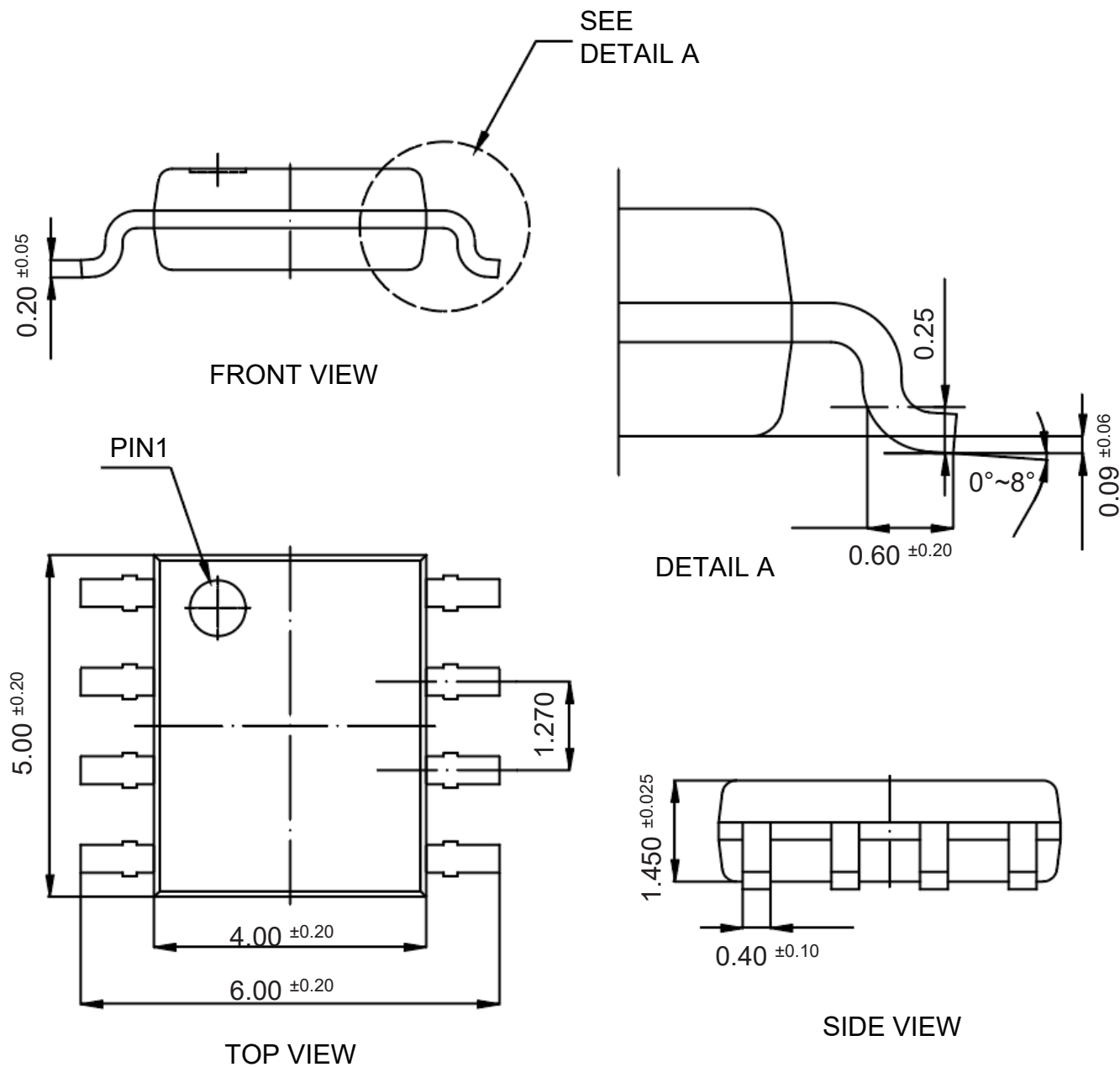


# PJ78L05PA

## 3-Terminal Voltage Regulator

### Package Outline

SOP-8  
Dimensions in mm



### Ordering Information

| Device    | Package | Shipping               |
|-----------|---------|------------------------|
| PJ78L05PA | SOP-8   | 4,000PCS/Reel&13inches |