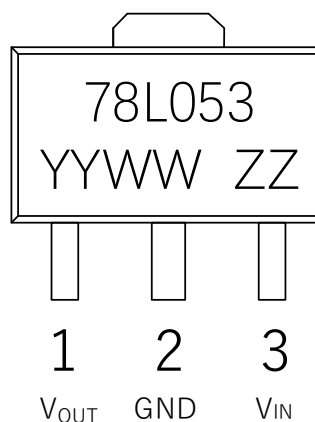


## FEATURES

- Maximum Output Current: 0.1A
- Output Voltage: 5.35V
- Thermal Overload Protection
- 2% Output Voltage Accuracy
- SOT89-3L



## PIN CONNECTION

“YY” STANDS FOR THE ASSEMBLY YEAR.

“WW” STANDS FOR THE ASSEMBLY WEEK

“ZZ” STANDS FOR THE ASSEMBLY FACTORY.

## Absolute Maximum Ratings (Ta=25°C)

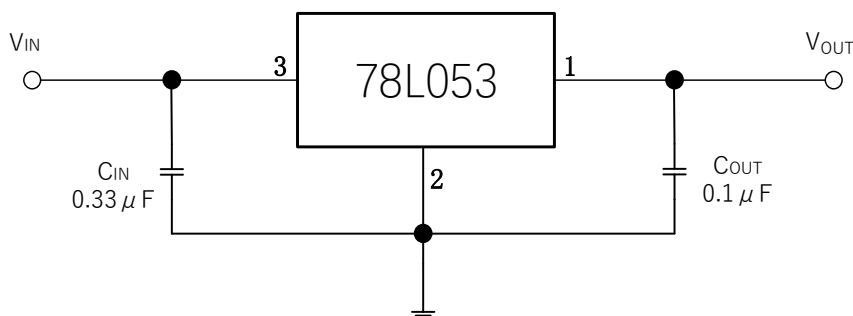
| Characteristics                      | Symbol    | Value    | Unit |
|--------------------------------------|-----------|----------|------|
| Input Voltage                        | $V_i$     | 42       | V    |
| Operating Junction Temperature Range | $T_j$     | -40~+125 | °C   |
| Power Dissipation                    | $P_d$     | 750      | mW   |
| Operating Temperature Range          | $T_{opr}$ | -40~+85  | °C   |
| Storage Temperature Range            | $T_{stg}$ | -40~+150 | °C   |

## ELECTRICAL CHARACTERISTICS

(unless otherwise noted,  $V_i=10V$ ,  $I_o=40mA$ ,  $-30<T_j<85^{\circ}C$ ,  $C_1=0.33\mu F$ ,  $C_o=0.1\mu F$ ) (Note1)

| Characteristics          | Test Conditions                                            | Symbol                  | Min  | Typ  | Max  | Unit    |
|--------------------------|------------------------------------------------------------|-------------------------|------|------|------|---------|
| Output Voltage           | $T_j=25^{\circ}C$                                          | $V_o$                   | 5.25 | 5.35 | 5.45 | V       |
|                          | $7.8V \leq V_i \leq 20V$ ; $I_o=1mA \sim 40mA$             |                         | 5.15 |      | 5.55 | V       |
|                          | $7.8V \leq V_i \leq V_{max}$ ; $I_o=1mA \sim 70mA$         |                         | 5.15 |      | 5.55 | V       |
| Load Regulation          | $T_j=25^{\circ}C$ ; $I_o=1mA \sim 100mA$                   | $\Delta V_o$            |      | 11   | 60   | mV      |
|                          | $T_j=25^{\circ}C$ ; $I_o=1mA \sim 40mA$                    |                         |      | 5    | 6    | mV      |
| Line Regulation          | $T_j=25^{\circ}C$ ; $7.5V \leq V_i \leq 20V$               | $\Delta V_o$            |      | 8    | 150  | mV      |
|                          | $T_j=25^{\circ}C$ ; $8V \leq V_i \leq 20V$                 |                         |      | 6    | 100  | mV      |
| Quiescent Current        |                                                            | $I_q$                   |      | 3    | 5.5  | mA      |
| Quiescent Current Change | $8V \leq V_i \leq 20V$                                     | $\Delta I_q$            |      |      | 1.5  | mA      |
|                          | $1mA \leq I_o \leq 40mA$                                   |                         |      |      | 0.2  | mA      |
| Output Noise Voltage     | $10Hz \leq f \leq 100kHz$                                  | $V_N$                   |      | 63   |      | $\mu V$ |
| Temperature Coefficient  | $I_o=5mA$                                                  | $\Delta V_o / \Delta T$ |      | 0.65 |      | mV/°C   |
| Ripple Rejection         | $10V \leq V_i \leq 20V$ ; $f=120Hz$ ;<br>$T_j=25^{\circ}C$ | $RR$                    | 41   | 60   |      | dB      |
| Dropout Voltage          | $T_j=25^{\circ}C$                                          | $V_d$                   |      | 2.5  |      | V       |

### APPLICATION CIRCUIT



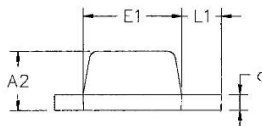
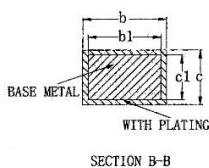
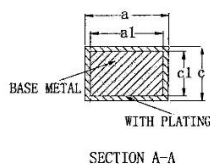
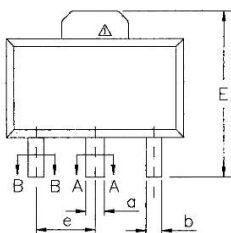
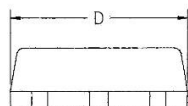
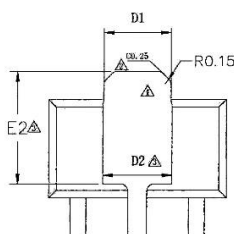
\*Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

### ORDER INFORMATION

|   |            |          |                                               |
|---|------------|----------|-----------------------------------------------|
| 1 | BL78L053   | SOT89-3L | Packaged by Tianshui Huatian Technology       |
| 2 | BL78L053-P | SOT89-3L | Packaged by Wuxi Hongguang Electronic Limited |

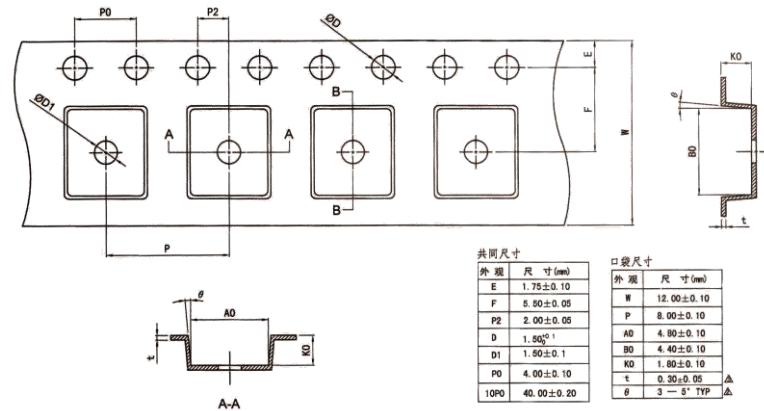
### OUTLINEDRAWING & Tray information

#### 1.BL78L053 ( SOT89-3L ) Humidity sensitivity level : MSL 3

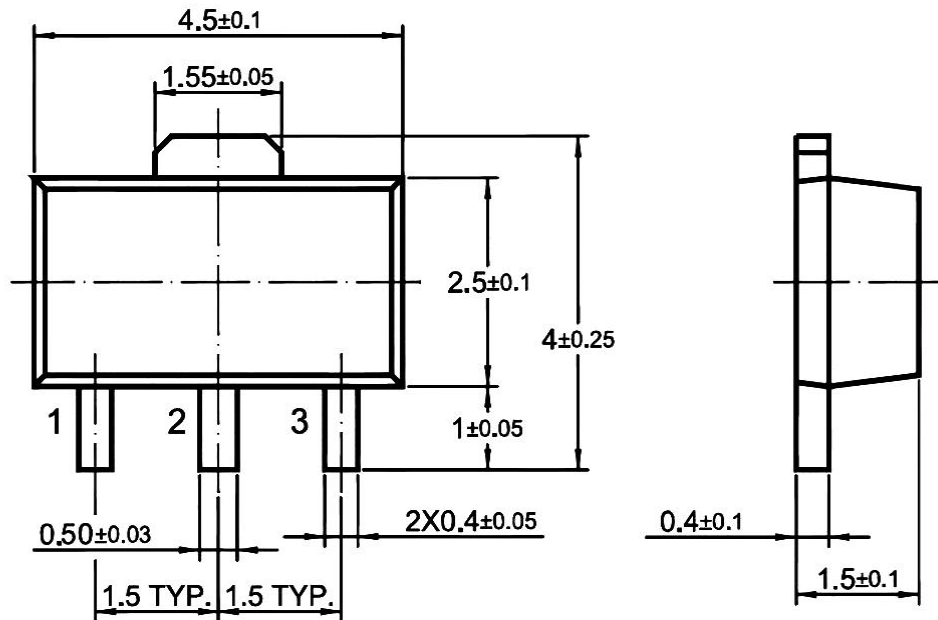


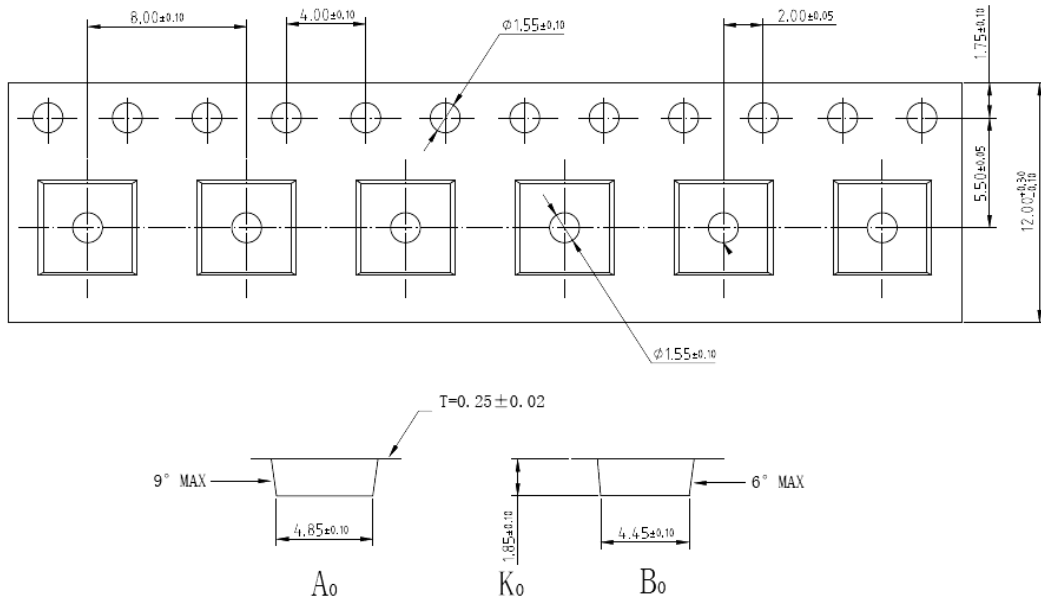
| SYMBOL | MILLIMETER |      |      |
|--------|------------|------|------|
|        | MIN        | NOM  | MAX  |
| A2     | 1.40       | 1.50 | 1.60 |
| b      | 0.38       | —    | 0.46 |
| b1     | 0.37       | 0.40 | 0.43 |
| c      | 0.38       | —    | 0.42 |
| c1     | 0.37       | 0.38 | 0.39 |
| a      | 0.46       | —    | 0.56 |
| a1     | 0.45       | 0.48 | 0.51 |
| D      | 4.40       | 4.50 | 4.60 |
| D1     | 1.62       | —    | 1.83 |
| E      | 3.95       | —    | 4.25 |
| E1     | 2.40       | 2.50 | 2.60 |
| e      | 1.50BSC    |      |      |
| L1     | 0.89       | —    | 1.20 |

| L/P Step (e1) | Stroke (a) | Stroke (a) |
|---------------|------------|------------|
| 66.9*63       | 1.75REF    | 2.84REF    |



## 2.BL78L053-P ( SOT89-3L ) Humidity sensitivity level : MSL 1





### Storage conditions and packaging

- Warranty period: Two Years
- Packing method: Tape
- Minimum packaging: 1000