

**Descriptions**

- Three Terminal Positive Low Dropout Voltage Regulator

**Features**

- Low Standby Current Consumption (500  $\mu$ A Typ.)
- Maximum Output Current (150 mA Max.)
- Less I/O voltage Difference (0.7V Max.)

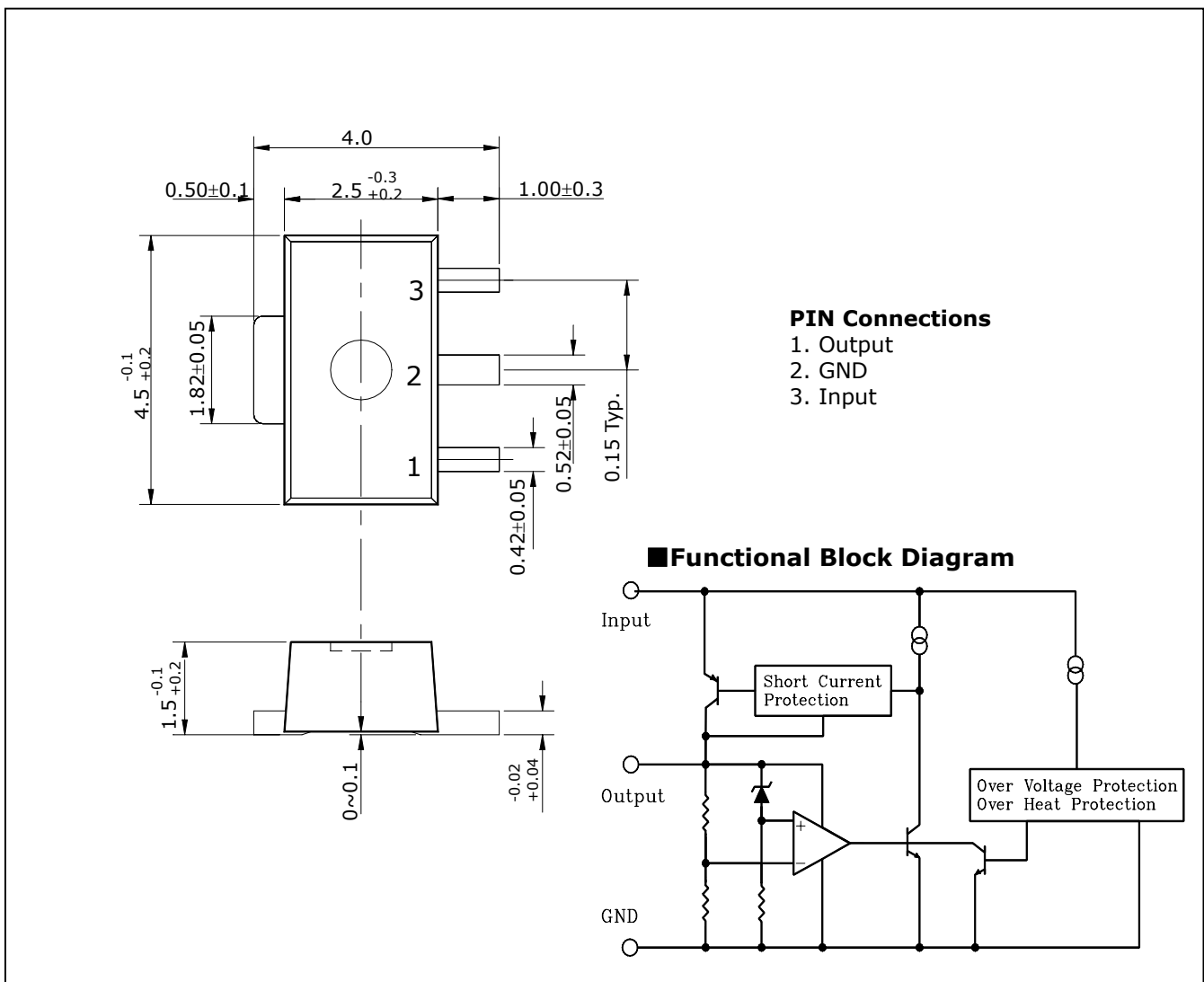
**Ordering Information**

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| S78DL05F | 85□□    | SOT-89       |

□□: Monthly Code, Weekly Code

**Outline Dimensions**

unit : mm



## Maximum ratings

Ta=25°C

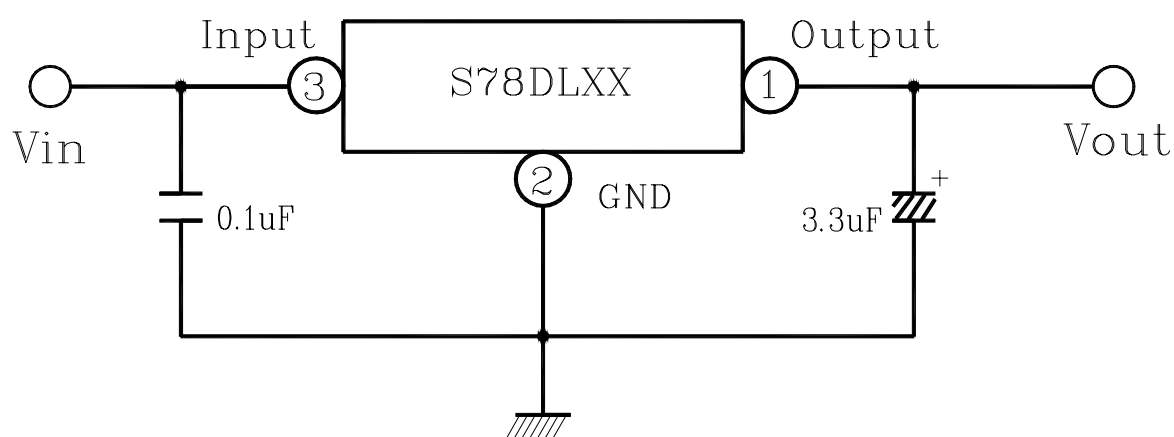
| Characteristic              | Symbol           | Ratings      | Unit |
|-----------------------------|------------------|--------------|------|
| Operating Input voltage     | V <sub>IN</sub>  | 20           | V    |
| Power Dissipation           | P <sub>D</sub>   | 500          | mW   |
| Operating Temperature Range | T <sub>OPR</sub> | -40~+85      | °C   |
| Junction Temperature        | T <sub>j</sub>   | 150          | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -55~150      | °C   |
| Lead Temperature Time       | T <sub>sol</sub> | 260 (10 Sec) | °C   |

## Electrical Characteristics

(※ V<sub>IN</sub>=10V, I<sub>OUT</sub>=10 mA, T<sub>j</sub>=25°C)

| Characteristic                  | Symbol                 | Test Condition                                   | Min. | Typ. | Max. | Unit |
|---------------------------------|------------------------|--|------|------|------|------|
| Output voltage                  | V <sub>OUT</sub>       | V <sub>IN</sub> =5.35V~20V, Ta=-40~85°C          | 4.8  | 5    | 5.2  | V    |
| Voltage Regulation              | Δ V <sub>OUT</sub> (1) | V <sub>IN</sub> =6V~16V                          | -    | 10   | 30   | mV   |
| Load Regulation                 | Δ V <sub>OUT</sub> (2) | I <sub>OUT</sub> =10~100mA                       | -    | 12   | 50   | mV   |
| Quiescent Current               | I <sub>CC</sub>        | I <sub>OUT</sub> ≤ 10mA, V <sub>IN</sub> =6V~20V | -    | 0.5  | 1    | mA   |
| Dropout Voltage                 | V <sub>DROP</sub>      | I <sub>OUT</sub> =50mA                           | -    | 0.3  | 0.5  | V    |
|                                 |                        | I <sub>OUT</sub> =100mA                          | -    | 0.5  | 0.7  |      |
| Maximum Operating Input Voltage | V <sub>IN</sub>        |  | 20   | 29   | -    | V    |

## Test circuit



Electrical Characteristic Curves

Fig. 1.  $V_{in} - V_{out}$

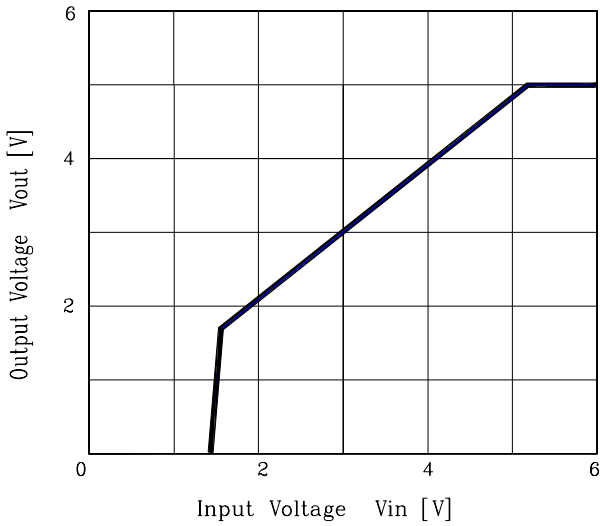


Fig. 2.  $|V_{out} - V_{in}| - I_C$

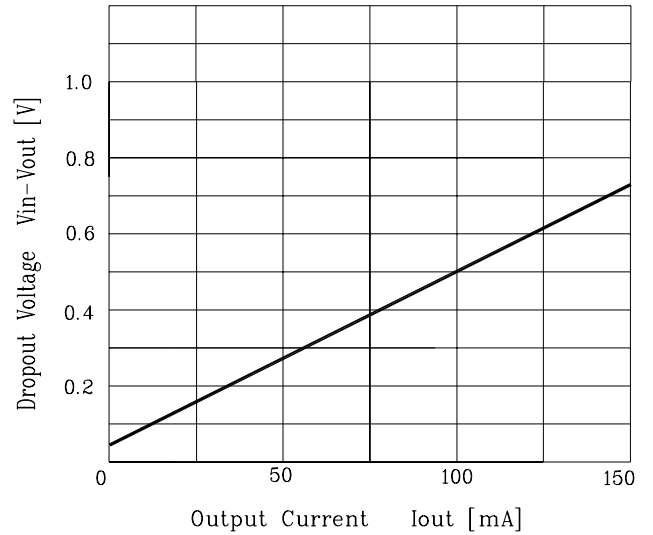


Fig. 3.  $P_d - T_a$

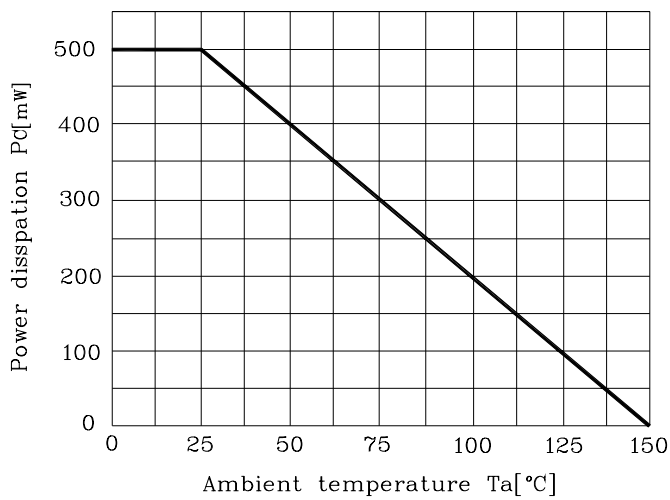


Fig. 4.  $I_{cc} - V_{out}$

