AUK Semiconductor

# S78DL33F

**Low Drop output Voltage Regulator**

## Descriptions

- Three Terminal Positive Low Dropout Voltage Regulator

## Features

- Low Standby Current Consumption (500 ㎂ Typ.)
- Maximum Output Current (180 ㎃ Max.)
- Less I/O voltage Difference (250 ㎷ Max.)

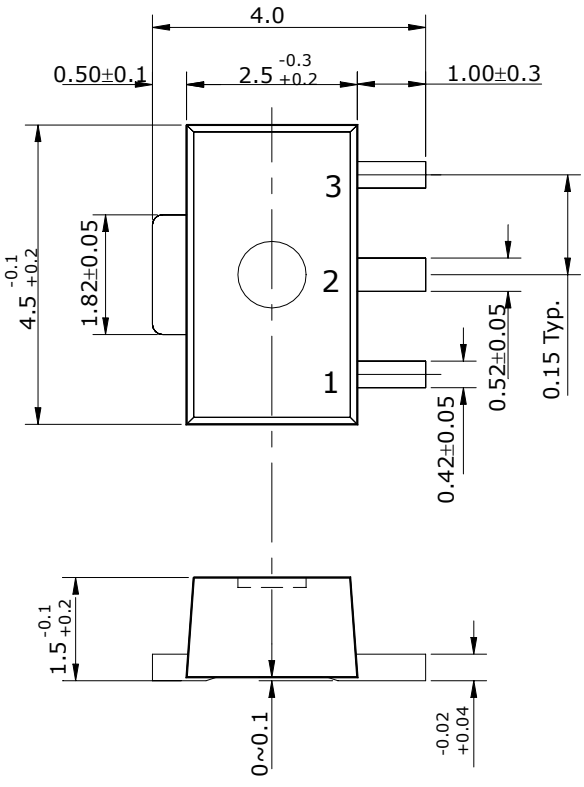
## Ordering Information

| Type NO. | Marking | Package Code |
|---|---|---|
| S78DL33F | 33□□ | SOT-89 |

□□: Monthly Code, Weekly Code

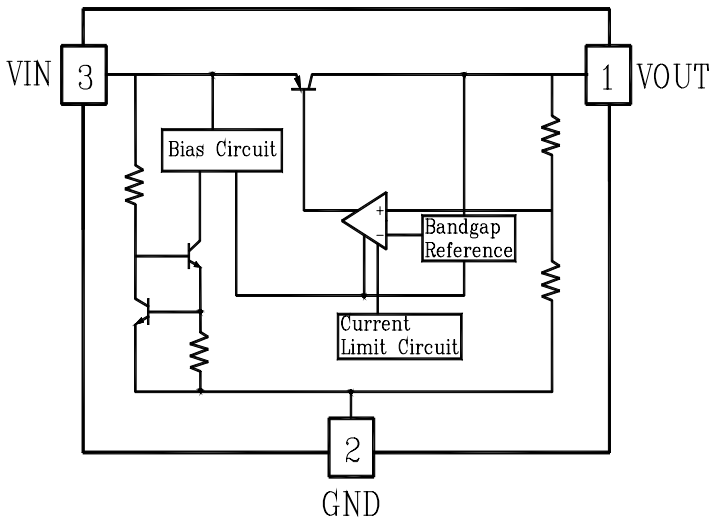
## Outline Dimensions

**unit : mm**




**PIN Connections**
1. Output
2. GND
3. Input

**■Functional Block Diagram**



## Maximum ratings

Ta=25°C

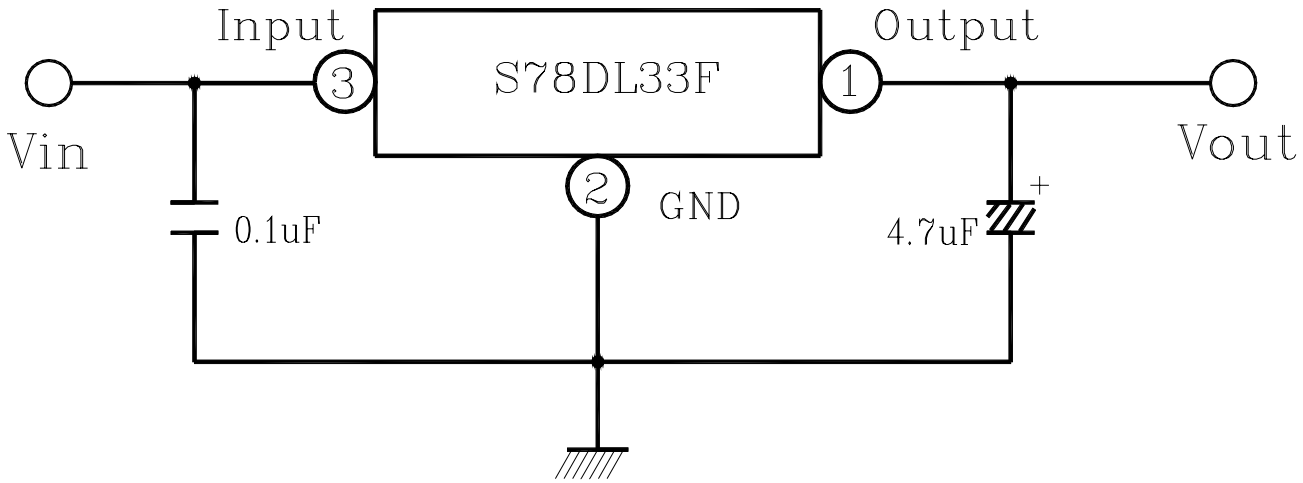
| Characteristic | Symbol | Ratings | Unit |
|---|---|---|---|
| Operating Input voltage | $V_{IN}$ | 16 | V |
| Power Dissipation | $P_D$ | 500 | mW |
| Operating Temperature Range | $T_{OPR}$ | -40~+85 | °C |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | -55~150 | °C |
| Lead Temperature Time | $T_{sol}$ | 260 (10 Sec) | °C |

## Electrical Characteristics

(※ $V_{IN}$=4.3V, $I_{OUT}$=100uA, $T_j$ =25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Output voltage | $V_{OUT}$ | $V_{IN}$=4.3V, $I_{OUT}$=100uA | 3.168 | 3.3 | 3.432 | V |
| Voltage Regulation | $\Delta V_{OUT}(1)$ | $V_{IN}$=4.3V~10V, $I_{OUT}$=100uA | - | 2 | 15 | mV |
| Load Regulation | $\Delta V_{OUT}(2)$ | $V_{IN}$=4.3V , $I_{OUT}$=1~100mA | - | 7 | 28 | mV |
| Dropout Voltage | $V_{DROP}$ | $I_{OUT}$=50mA | - | 110 | 230 | mV |
| | | $I_{OUT}$=100mA | - | 150 | 300 | |
| Ripple Rejection Ratio | RR | f=100Hz, $I_{OUT}$=100uA | - | 75 | - | dB |
| Ground pin Current | $I_{GND}$ | $V_{IN}$=4.3V , $I_{OUT}$=100uA | | 200 | 400 | uA |
| | | $V_{IN}$=4.3V , $I_{OUT}$=50mA | | 0.9 | 1.8 | mA |
| | | $V_{IN}$=4.3V , $I_{OUT}$=100mA | | 2.1 | 4 | mA |

## ■Test circuit



## Electrical Characteristic Curves

**Fig. 1. Vin - Vout**

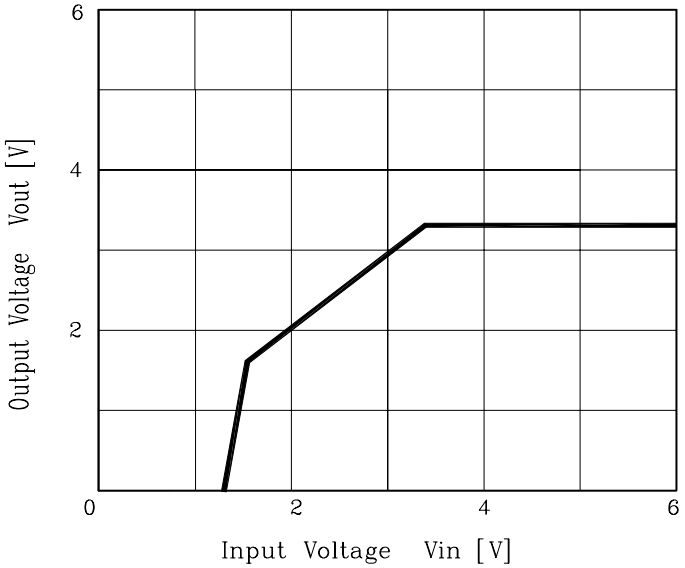



**Fig. 2 |Vout - Vin| -I $_{OUT}$**

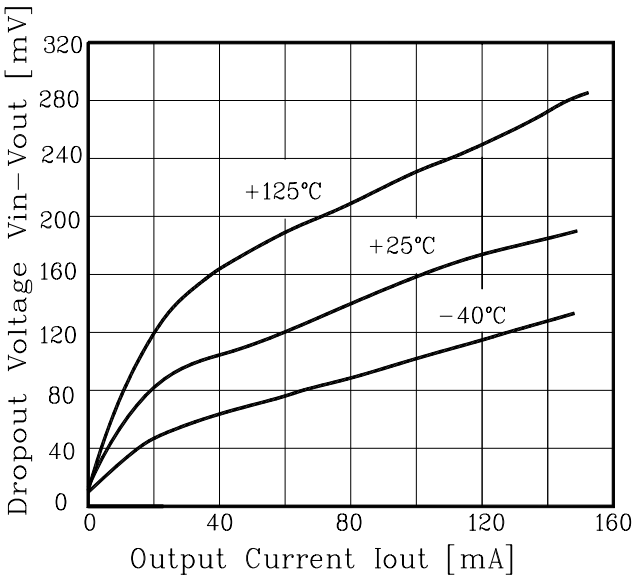



**Fig. 3. Pd - Ta**

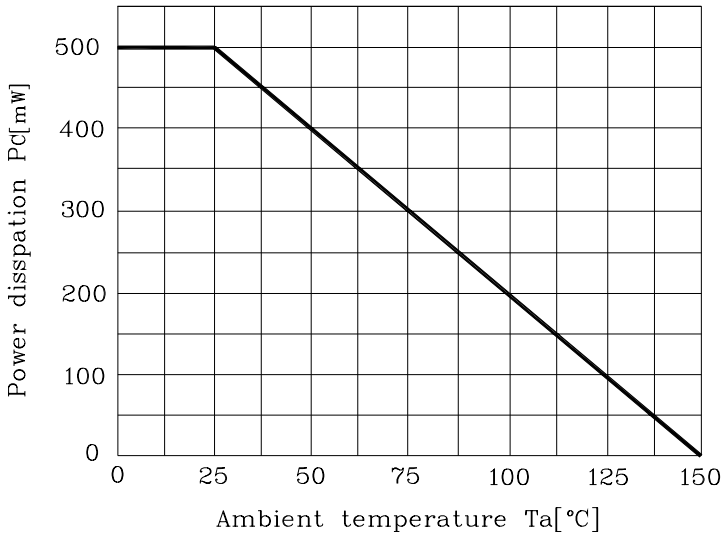



**Fig. 4. Input voltage – Ground pin Current**