

# A8181SLB Series

## Surface-Mount, Low Circuit Current, Low Dropout Voltage Dropper Type

### ■Features

- Surface-mount package
- Output current: 0.5A
- Low circuit current  
 $I_{q} \leq 120\mu\text{A}$  (Output ON)  
 $I_{q(\text{off})} \leq 20\mu\text{A}$  (Output OFF)
- Low dropout voltage:  $V_{\text{DIF}} \leq 0.3\text{V}$  (at  $I_o = 0.5\text{A}$ )
- Output ON/OFF control terminal is compatible with LS-TTL.
- Built-in thermal protection circuit

### ■Applications

- Portable phones and PHS telephones
- Battery-driven electronic equipment



### ■Absolute Maximum Ratings

( $T_a = 25^\circ\text{C}$ )

| Parameter                     | Symbol           | Ratings                         | Unit             |
|-------------------------------|------------------|---------------------------------|------------------|
| DC Input Voltage              | $V_{\text{IN}}$  | 10                              | V                |
| DC Output Current             | $I_o$            | 0.6                             | A                |
| Power Dissipation             | $P_D$            | 1.9( $T_c = 25^\circ\text{C}$ ) | W                |
| Junction Temperature          | $T_j$            | +150                            | $^\circ\text{C}$ |
| Ambient Operating Temperature | $T_{\text{op}}$  | -20 to +85                      | $^\circ\text{C}$ |
| Storage Temperature           | $T_{\text{stg}}$ | -40 to +150                     | $^\circ\text{C}$ |

■Electrical Characteristics

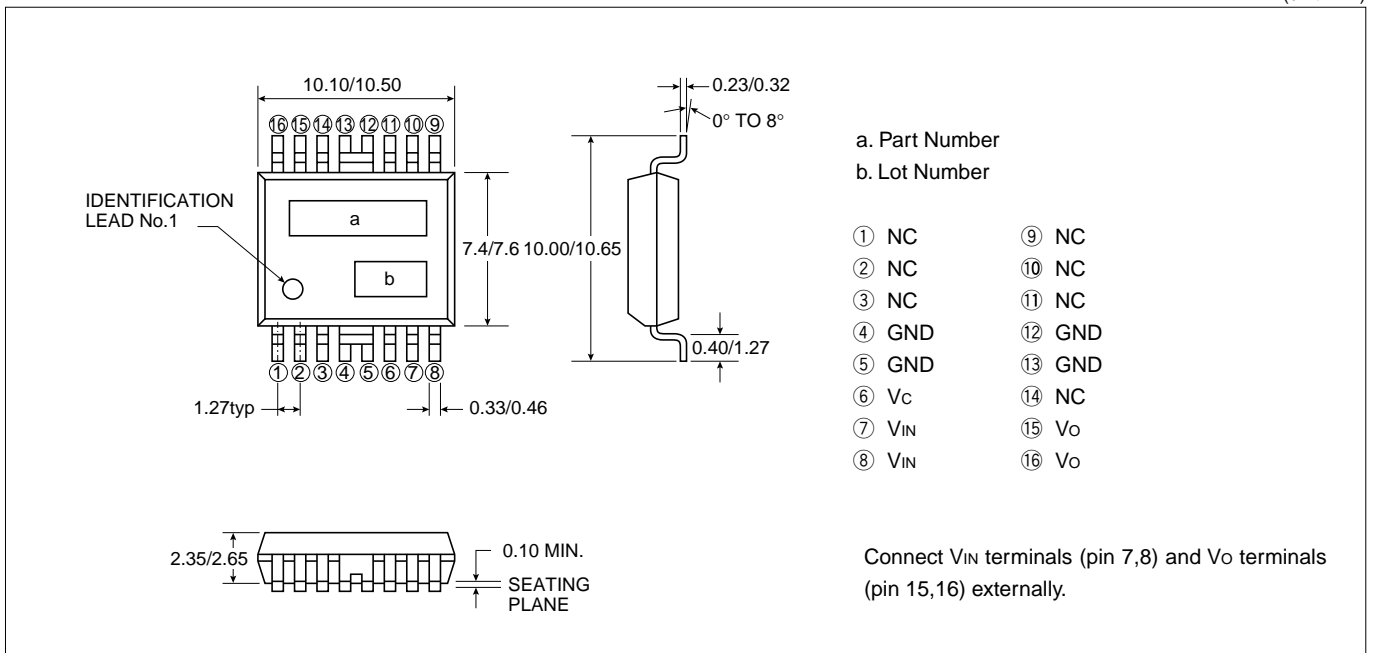
(T<sub>a</sub>=25°C unless otherwise specified)

| Parameter                                 | Symbol                           | Ratings  |  |      | Unit  |   |
|---|----------------------------------|--|--|------|-------|---|
|   |                                  | A8181SLB   |  |      |       |   |
|   |                                  | typ.   | min.   | max. |       |   |
| Input Voltage                             | V <sub>IN</sub>                  |  |  | 10   | V     |   |
| Output Voltage                            | V <sub>O</sub>                   | 4.85   | 5.00   | 5.15 | V     |   |
|   | Conditions                       | V <sub>IN</sub> =5.5 to 10V, I <sub>o</sub> =0 to 0.5A, T <sub>a</sub> =-20 to +85°C |  |      |       |   |
| Dropout Voltage                           | V <sub>DIF</sub>                 |  |  | 0.3  | V     |   |
|   | Conditions                       | I <sub>o</sub> =0.5A   |  |      |       |   |
| Line Regulation                           | ΔV <sub>OLINE</sub>              |  | 10   | 30   | mV    |   |
|   | Conditions                       | V <sub>IN</sub> =5.5 to 10V, I <sub>o</sub> =0A                                      |  |      |       |   |
| Load Regulation                           | ΔV <sub>OLOAD</sub>              |  | 50   | 100  | mV    |   |
|   | Conditions                       | V <sub>IN</sub> =6V, I <sub>o</sub> =0 to 0.5A                                       |  |      |       |   |
| Temperature Coefficient of Output Voltage | ΔV <sub>O</sub> /ΔT <sub>a</sub> |  | ±0.5   | ±1.0 | mV/°C |   |
|   | Conditions                       | T <sub>j</sub> =-20 to +85°C   |  |      |       |   |
| Circuit Current                           | I <sub>q</sub>                   |  | 92   | 120  | μA    |   |
|   | Conditions                       | V <sub>IN</sub> =10V, I <sub>o</sub> =0 to 0.5A                                      |  |      |       |   |
| Quiescent Circuit Current                 | I <sub>q(off)</sub>              |  | 10   | 20   | μA    |   |
|   | Conditions                       | V <sub>IN</sub> =10V, I <sub>o</sub> =0A, V <sub>C</sub> =0.4V                       |  |      |       |   |
| V <sub>C</sub> Terminal*                  | Control Voltage (Output ON)      | V <sub>O(off)</sub>  | 2.4  |      | V     |   |
|   |                                  | Conditions   | V <sub>IN</sub> =10V, T <sub>a</sub> =-20 to +85°C |      |       |   |
|   | Control Voltage (Output OFF)     | V <sub>C.OL</sub>  |  |      | 0.4   | V |
|   |                                  | Conditions   | V <sub>IN</sub> =10V, T <sub>a</sub> =-20 to +85°C |      |       |   |
| Input Current                             | I <sub>C</sub>                   | -0.1   |  | +0.1 | μA    |   |
|   | Conditions                       | T <sub>a</sub> =25°C   |  |      |       |   |
|   |                                  | I <sub>C</sub>   | -1.0   | +1.0 | μA    |   |
|   |                                  | Conditions   | T <sub>a</sub> =85°C                               |      |       |   |

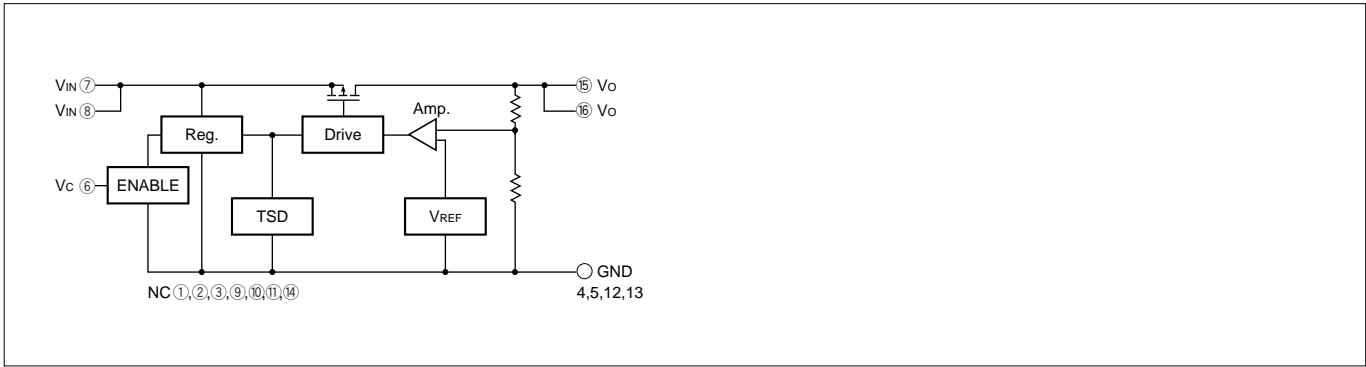
\* Output is OFF when output ON/OFF terminal is open.

■Outline Drawing

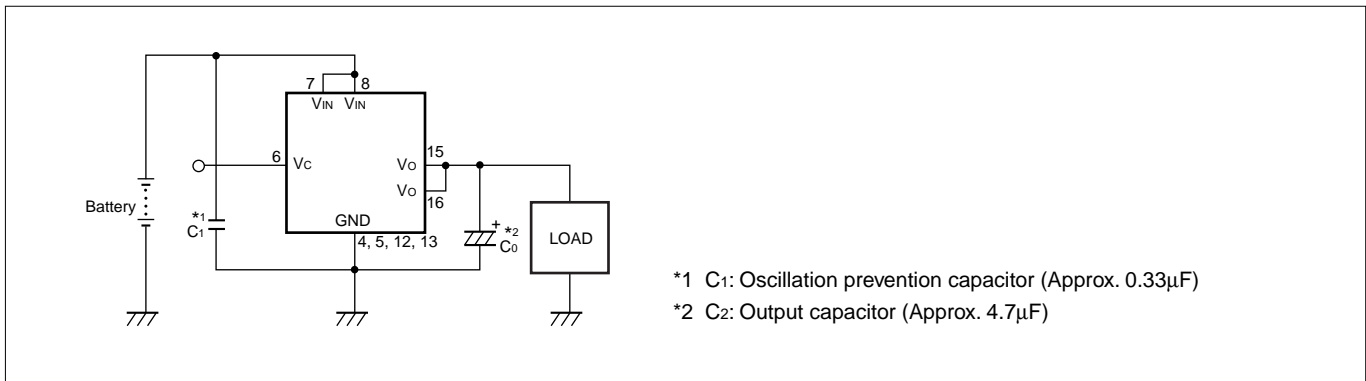
(unit: mm)



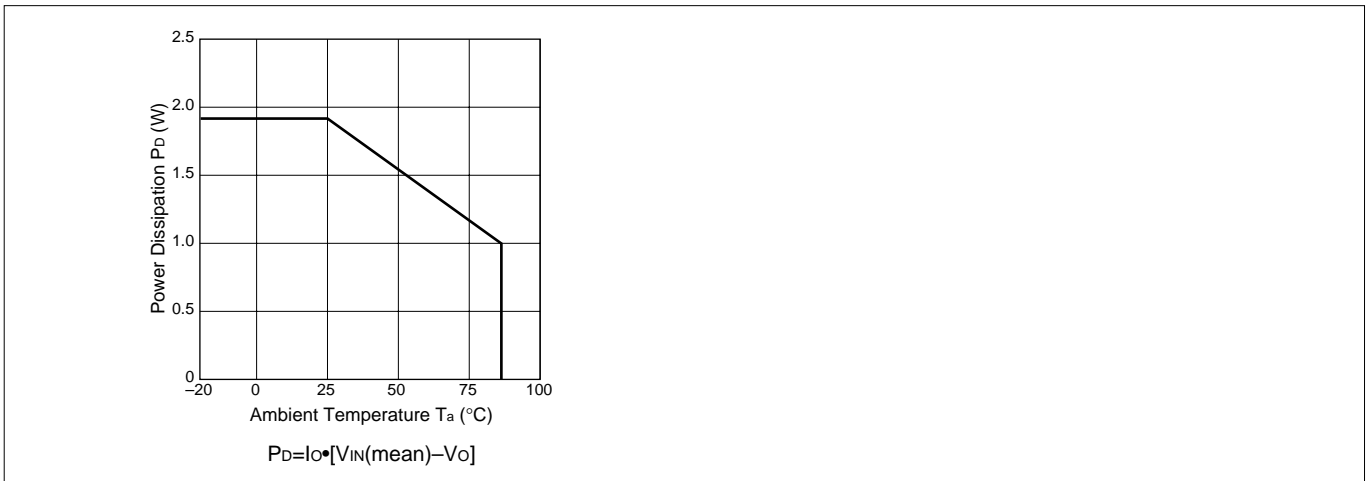
■Block Diagram



■Standard External Circuit



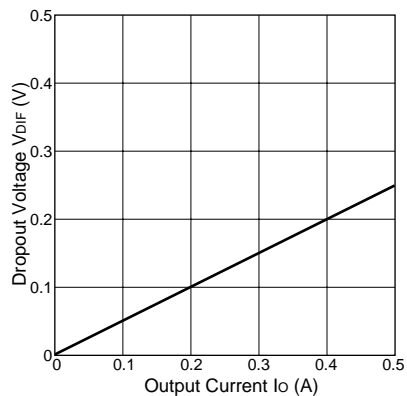
■Ta-Pd Characteristics



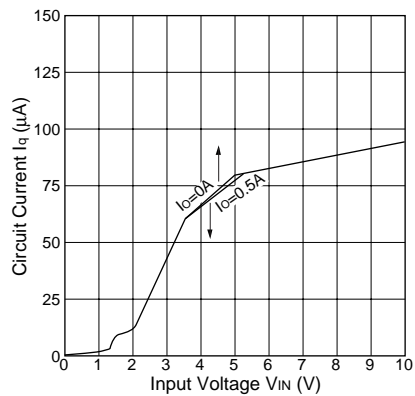
■Typical Characteristics

( $T_a=25^\circ\text{C}$ )

**$I_o$  vs.  $V_{DIF}$  Characteristics**



**Circuit Current**



**Rise Characteristics**

