

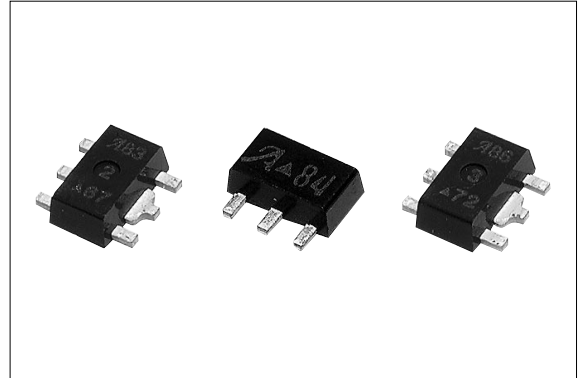
A8180SLU/SLT Series

A8184SLT, A8187SLT are product of Allegro Microsystems, INC.

Surface-Mount, Low Quiescent Current, Low Dropout Voltage Dropper Type

■Features

- Compact surface-mount package (equivalent to SOT-89)
- Output current: 0.15A
- Low circuit current
 $I_{q} \leq 60\mu\text{A}$ (Output ON: $V_{IN}=6\text{V}$, $I_o=0$ to 0.1A)
 $I_{q}(\text{off}) \leq 5\mu\text{A}$ (Output OFF: A8183SLU, A8186SLU)
- Low dropout voltage: $V_{DIF} \leq 150\text{mV}$ ($I_o=60\text{mA}$)
- Output ON/OFF control terminal is compatible with LS-TTL.
 (A8183SLU, A8186SLU)
- 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_{IN} | 10 | V |
| DC Output Current | I_o | 0.15 | A |
| Power Dissipation | P_D | 0.5($T_c=25^\circ\text{C}$) | W |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Ambient Operating Temperature | T_{op} | -30 to +85 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -40 to +150 | $^\circ\text{C}$ |

■Electrical Characteristics

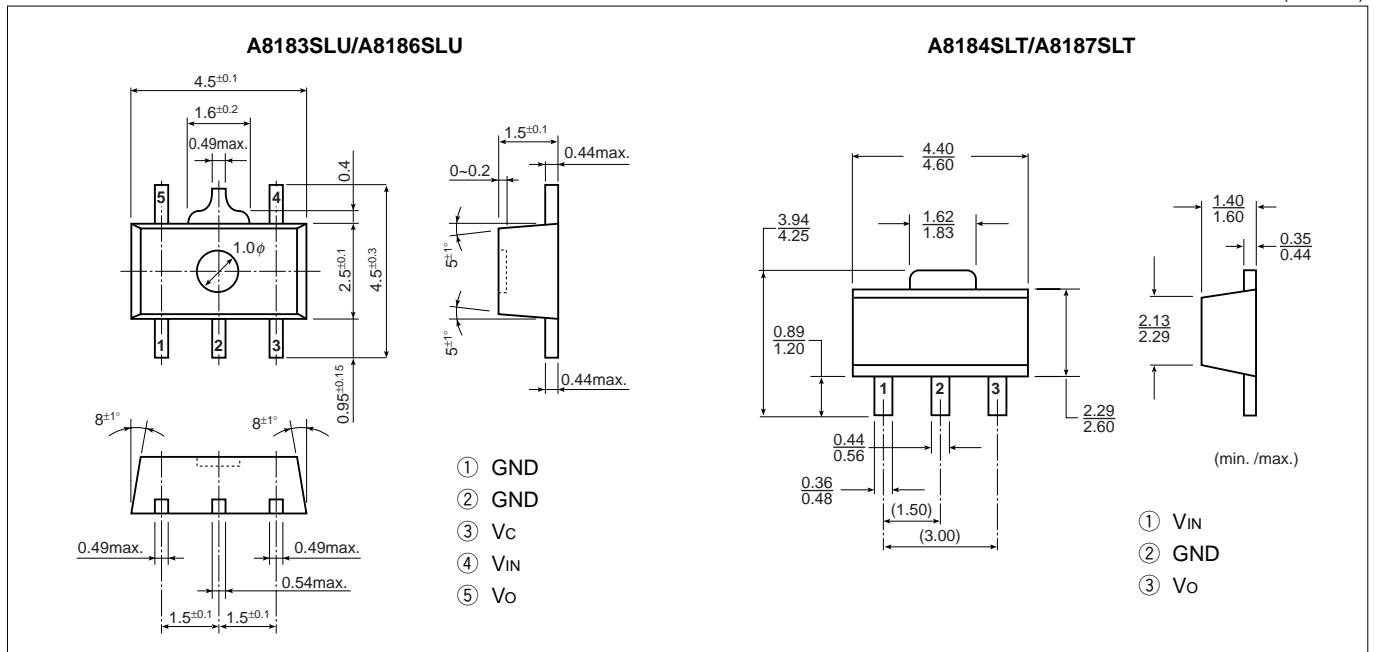
(Ta=25°C unless otherwise specified)

| Parameter | Symbol | Ratings | | | | | | | | | | | Unit | |
|---|----------------------------------|---|---------------------|------|----------|------|------|---|---------------------|------|----------|------|------|-------|
| | | A8183SLU | | | A8184SLT | | | A8186SLU | | | A8187SLT | | | |
| | | min. | typ. | max. | min. | typ. | max. | min. | typ. | max. | min. | typ. | | max. |
| Input Voltage | V _{IN} | | | 8 | | | 8 | | | 8 | | | 8 | V |
| Output Voltage | V _O | 2.9 | 3.0 | 3.1 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.2 | 3.3 | 3.4 | V |
| | Conditions | V _{IN} =4 to 8V, I _o =0 to 0.1A | | | | | | V _{IN} =4.5 to 8V, I _o =0 to 0.1A | | | | | | |
| Dropout Voltage | V _{DIF} | | | 0.15 | | | 0.15 | | | 0.15 | | | 0.15 | V |
| | Conditions | I _o =60mA | | | | | | | | | | | | |
| Line Regulation | ΔV _{OLINE} | | 7 | 20 | | 7 | 20 | | 7 | 20 | | 7 | 20 | mV |
| | Conditions | V _{IN} =4.5 to 6V, I _o =0A | | | | | | | | | | | | |
| Load Regulation | ΔV _{OLOAD} | | 30 | 90 | | 30 | 90 | | 30 | 90 | | 30 | 90 | mV |
| | Conditions | V _{IN} =6V, I _o =0 to 0.1A | | | | | | | | | | | | |
| Temperature Coefficient of Output Voltage | ΔV _O /ΔT _a | -1.0 | | 1.0 | -1.0 | | 1.0 | -1.0 | | 1.0 | -1.0 | | 1.0 | mV/°C |
| | Conditions | T _J =-30 to +85°C | | | | | | | | | | | | |
| Circuit Current | I _q | | 45 | 60 | | 45 | 60 | | 45 | 60 | | 45 | 60 | μA |
| | Conditions | V _{IN} =6V, I _o =0 to 0.1A | | | | | | | | | | | | |
| Quiescent Circuit Current | I _{q(off)} | | | 5 | | | | | | 5 | | | | μA |
| | Conditions | V _{IN} =4.5 to 8V, V _c =0.4V | | | — | | | V _{IN} =4.5 to 8V, V _c =0.4V | | | — | | | |
| V _c Terminal | Control Voltage (Output ON) | V _{O(off)} | 2.0 | | | | | 2.0 | | | | | | V |
| | | Conditions | V _{IN} =6V | | | — | | | V _{IN} =6V | | | — | | |
| | Control Voltage (Output OFF) | V _{c.OL} | | | 0.8 | | | | | | 0.8 | | | V |
| | | Conditions | V _{IN} =6V | | | — | | | V _{IN} =6V | | | — | | |
| Input Current | I _c | -1.0 | | 1.0 | | | | -1.0 | | 1.0 | | | | μA |
| | Conditions | V _{IN} =6V | | | — | | | V _{IN} =6V | | | — | | | |

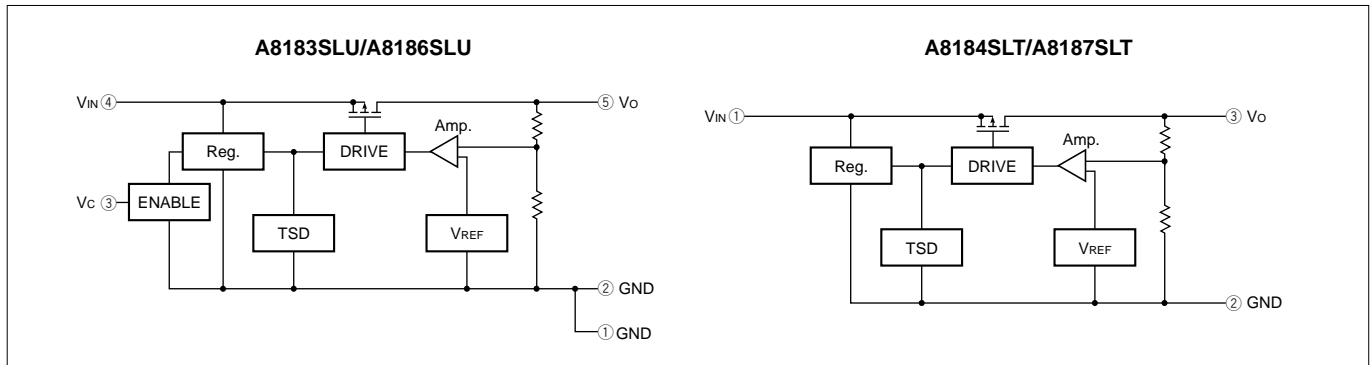
*Output is OFF when output ON/OFF terminal (V_c terminal) is open.

■Outline Drawing

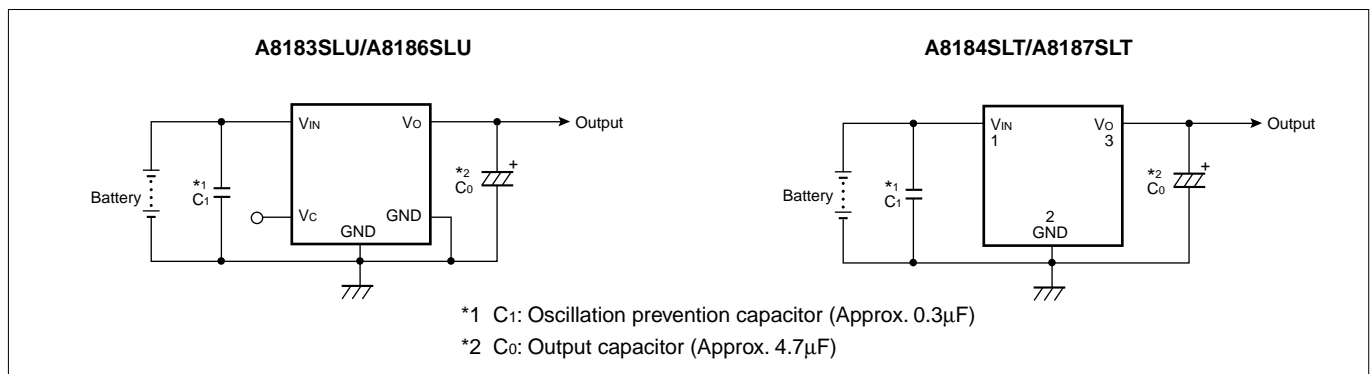
(unit: mm)



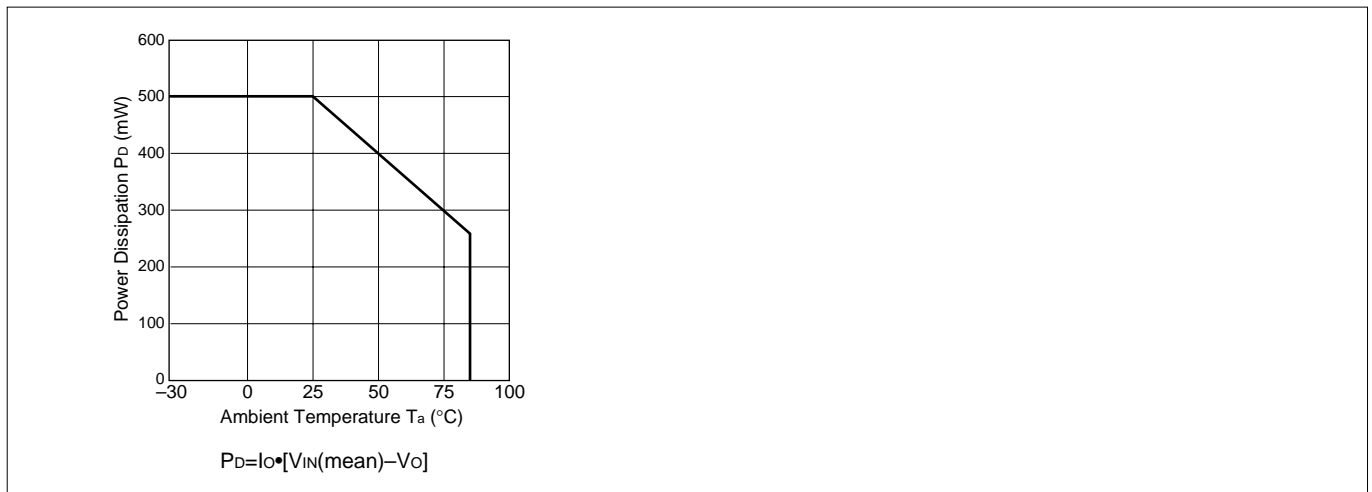
■Block Diagram



■Standard External Circuit



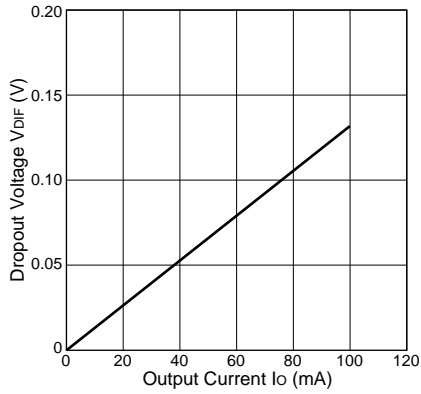
■T_a-P_D Characteristics



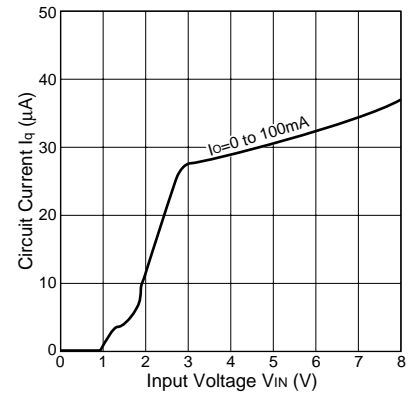
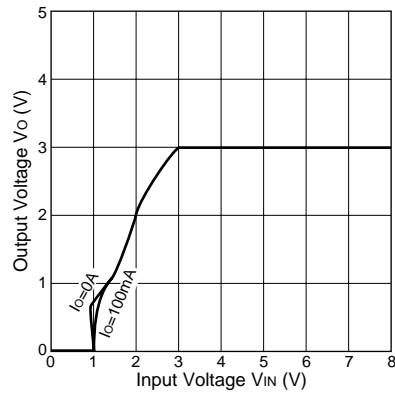
■Typical Characteristics

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

I_o vs. V_{DIF} Characteristics



Rise Characteristics (A8183SLU/A8184SLT) Circuit Current



Output ON/OFF Control (A8183SLU)

