

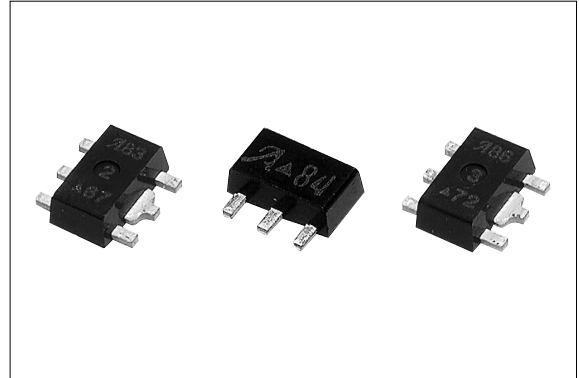
# A8180SLU/SLT Series

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

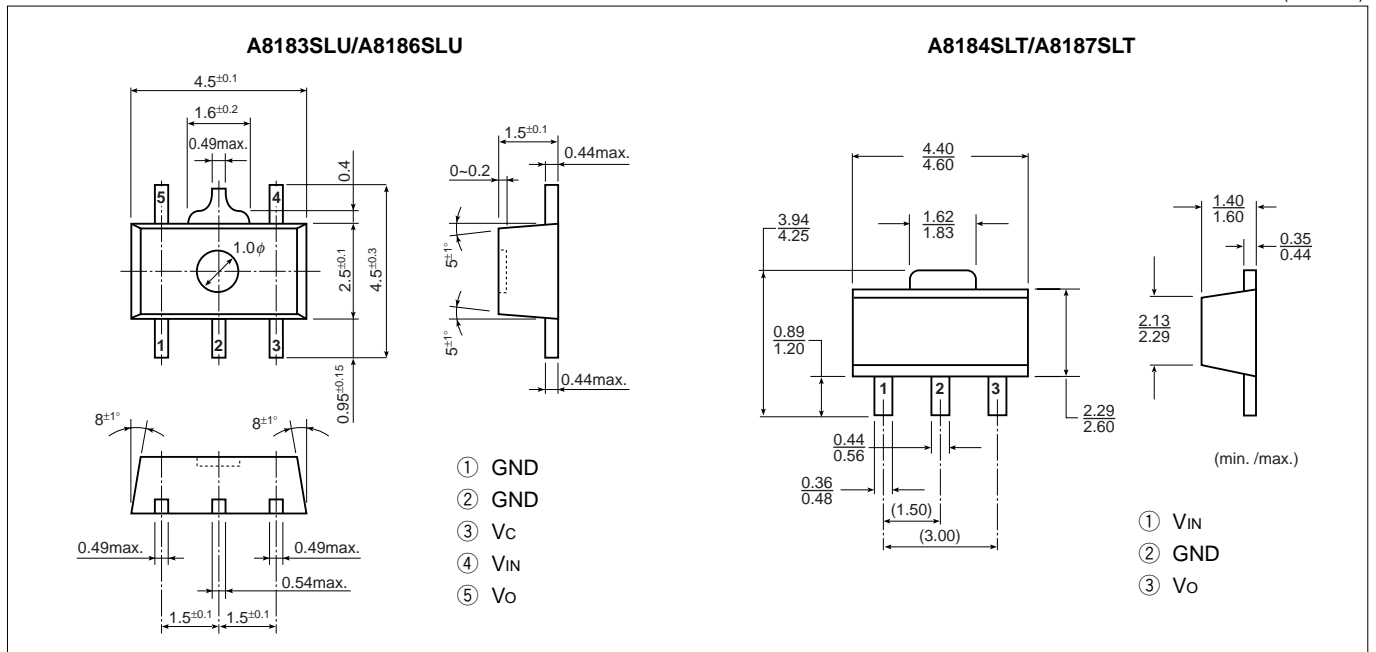
(Ta=25°C unless otherwise specified)

Parameter	Symbol	Ratings											Unit	
		A8183SLU			A8184SLT			A8186SLU			A8187SLT			
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.		max.
Input Voltage	V <sub>IN</sub>			8			8			8			8	V
Output Voltage	V <sub>O</sub>	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 <sub>IN</sub> =4 to 8V, I <sub>o</sub> =0 to 0.1A						V <sub>IN</sub> =4.5 to 8V, I <sub>o</sub> =0 to 0.1A						
Dropout Voltage	V <sub>DIF</sub>			0.15			0.15			0.15			0.15	V
	Conditions	I <sub>o</sub> =60mA												
Line Regulation	ΔV <sub>OLINE</sub>		7	20		7	20		7	20		7	20	mV
	Conditions	V <sub>IN</sub> =4.5 to 6V, I <sub>o</sub> =0A												
Load Regulation	ΔV <sub>OLOAD</sub>		30	90		30	90		30	90		30	90	mV
	Conditions	V <sub>IN</sub> =6V, I <sub>o</sub> =0 to 0.1A												
Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔT <sub>a</sub>	-1.0		1.0	-1.0		1.0	-1.0		1.0	-1.0		1.0	mV/°C
	Conditions	T <sub>J</sub> =-30 to +85°C												
Circuit Current	I <sub>q</sub>		45	60		45	60		45	60		45	60	μA
	Conditions	V <sub>IN</sub> =6V, I <sub>o</sub> =0 to 0.1A												
Quiescent Circuit Current	I <sub>q(off)</sub>			5						5				μA
	Conditions	V <sub>IN</sub> =4.5 to 8V, V <sub>C</sub> =0.4V						V <sub>IN</sub> =4.5 to 8V, V <sub>C</sub> =0.4V						
V <sub>C</sub> Terminal	Control Voltage (Output ON)	V <sub>O(off)</sub>	2.0					2.0						V
		Conditions	V <sub>IN</sub> =6V						V <sub>IN</sub> =6V					
	Control Voltage (Output OFF)	V <sub>C.OL</sub>			0.8						0.8			V
		Conditions	V <sub>IN</sub> =6V						V <sub>IN</sub> =6V					
Input Current	I <sub>C</sub>	-1.0		1.0				-1.0		1.0			μA	
	Conditions	V <sub>IN</sub> =6V						V <sub>IN</sub> =6V						

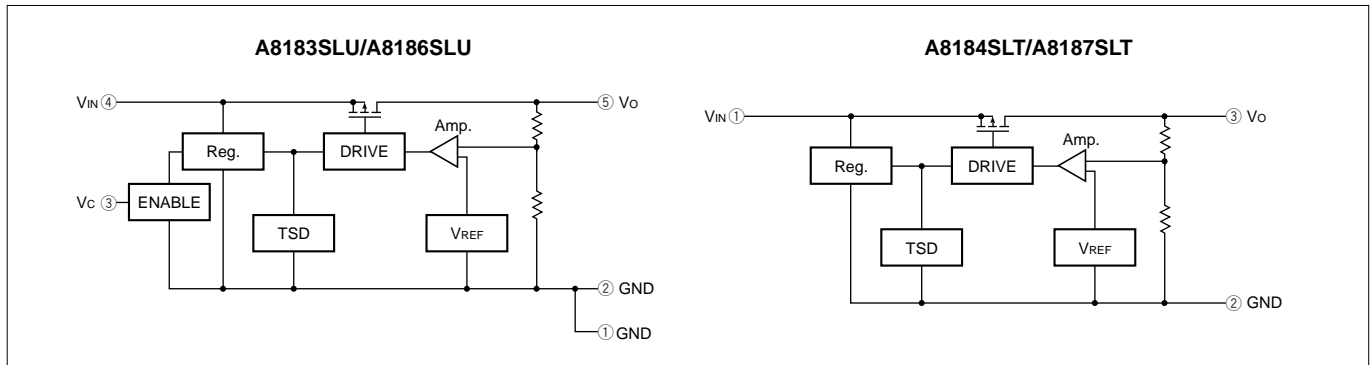
\*Output is OFF when output ON/OFF terminal (V<sub>C</sub> terminal) is open.

■Outline Drawing

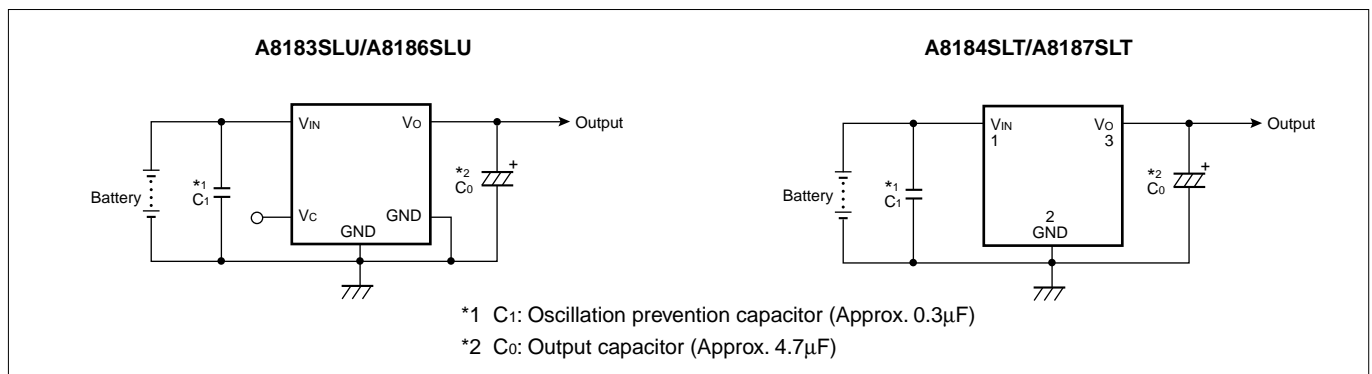
(unit: mm)



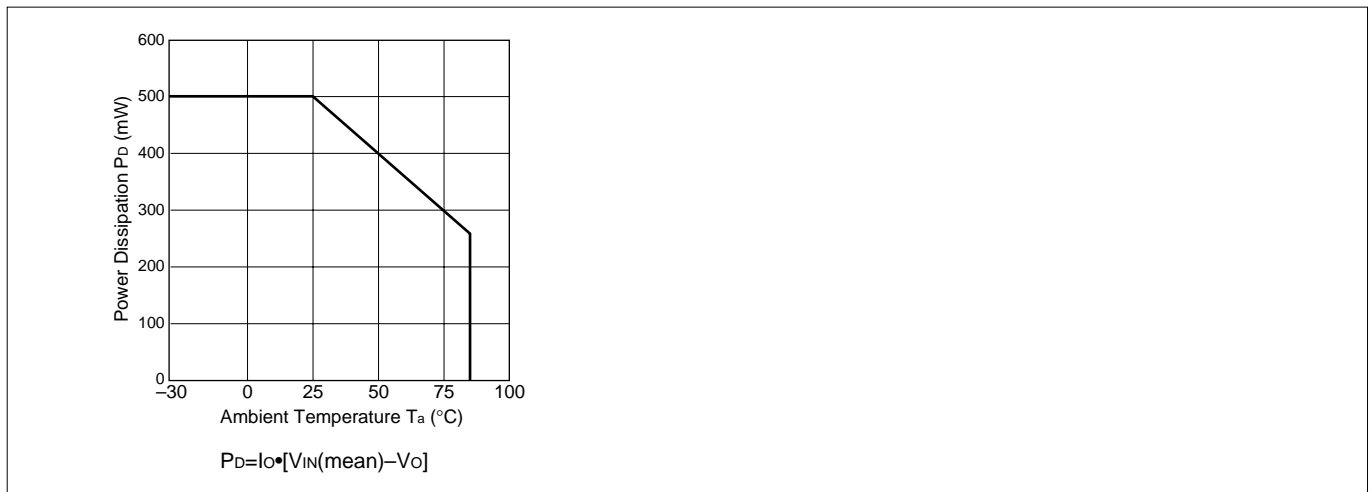
■Block Diagram



■Standard External Circuit



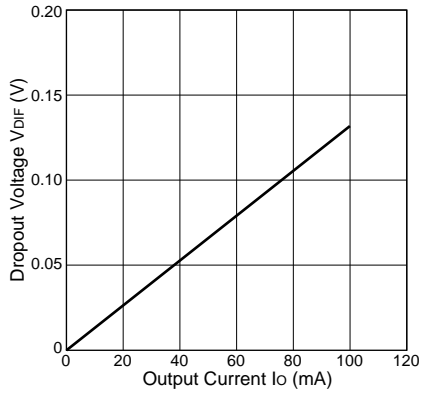
■T<sub>a</sub>-P<sub>D</sub> Characteristics



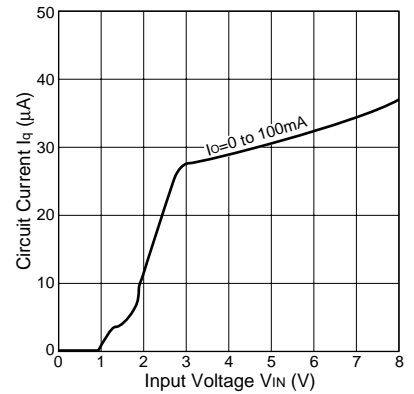
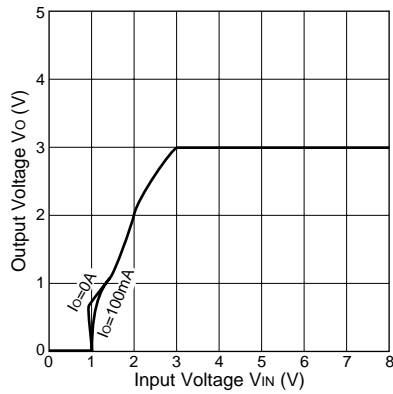
■Typical Characteristics

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

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



**Rise Characteristics (A8183SLU/A8184SLT) Circuit Current**



**Output ON/OFF Control (A8183SLU)**

