

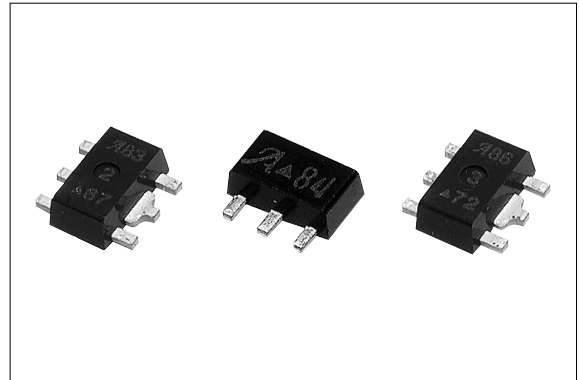
A8180SLU/SLT Series

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

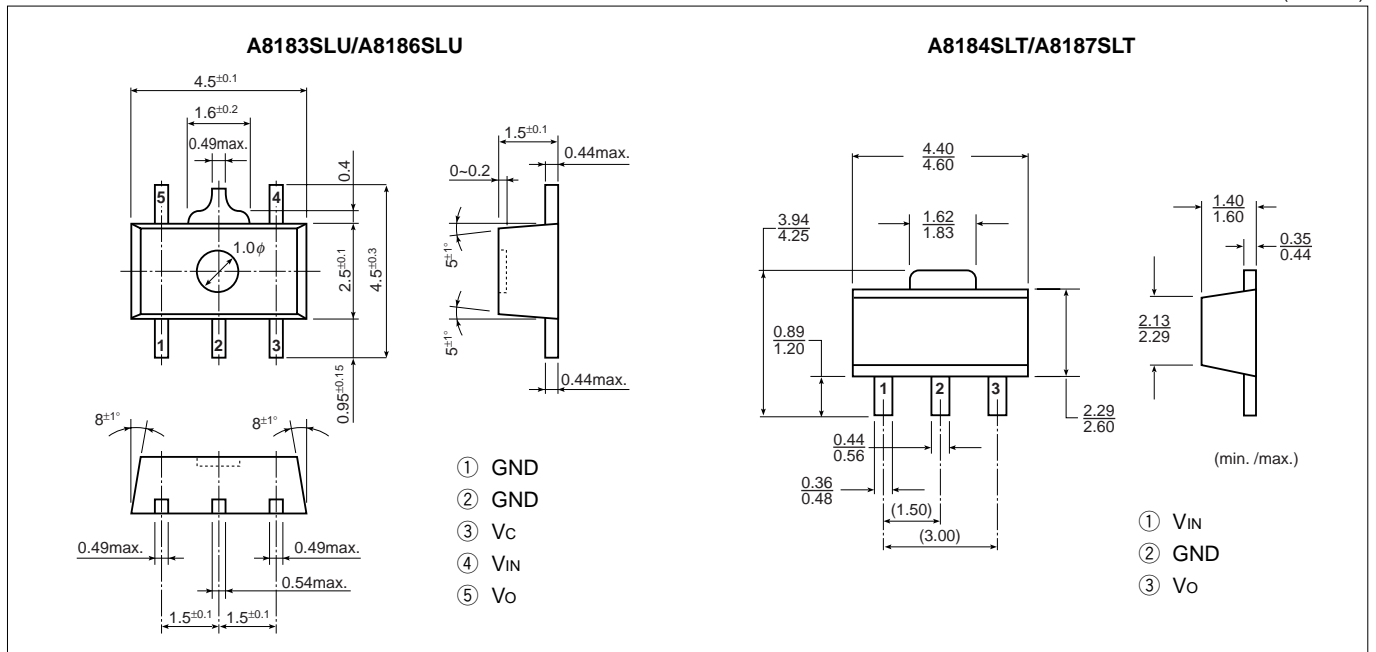
(Ta=25°C unless otherwise specified)

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			—			

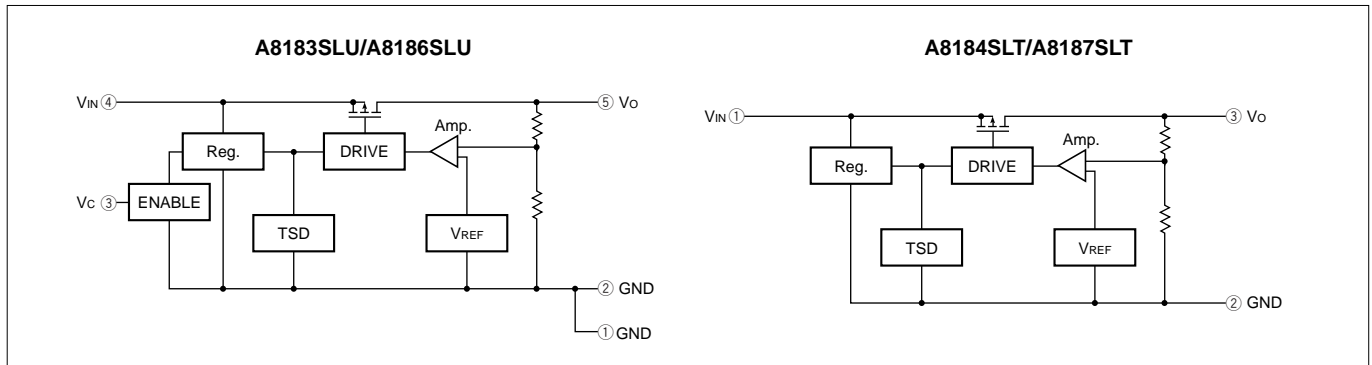
*Output is OFF when output ON/OFF terminal (V_C terminal) is open.

■Outline Drawing

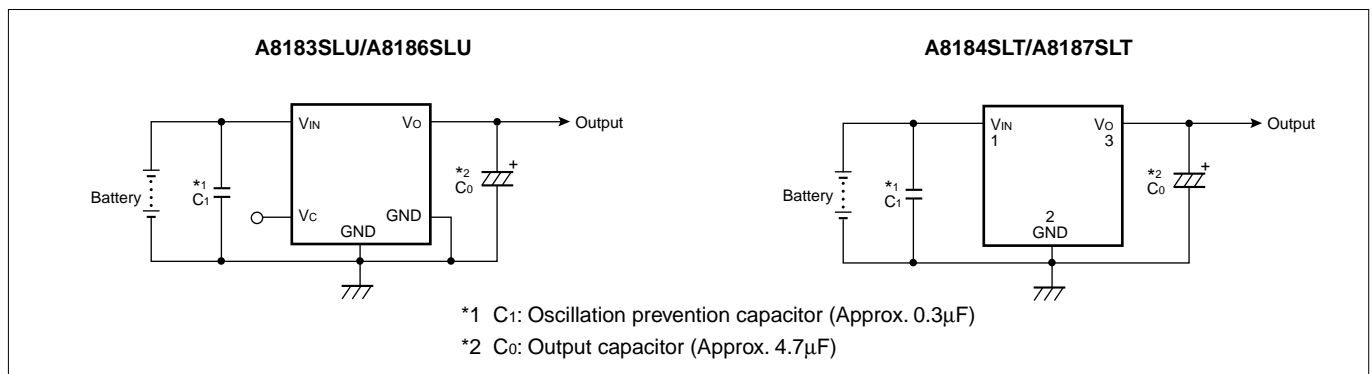
(unit: mm)



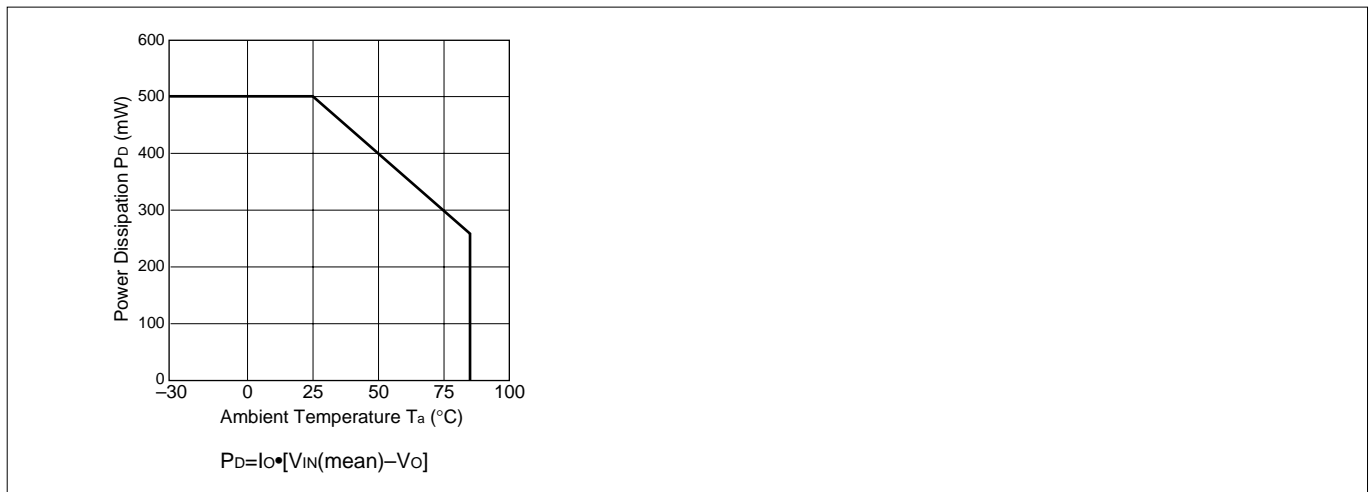
■Block Diagram



■Standard External Circuit



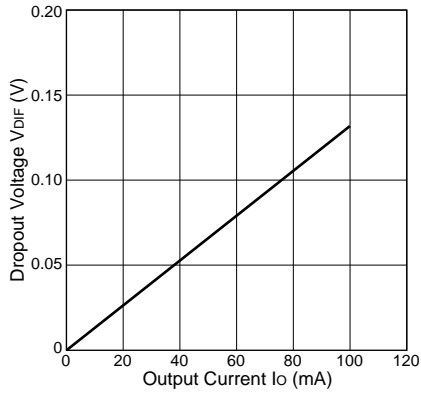
■T_a-P_D Characteristics



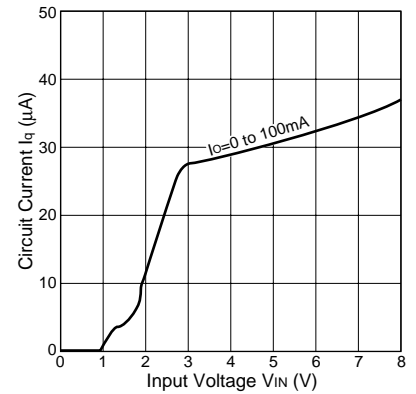
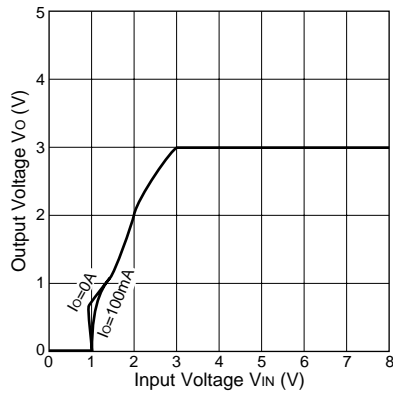
■Typical Characteristics

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

I_o vs. V_{DIF} Characteristics



Rise Characteristics (A8183SLU/A8184SLT) Circuit Current



Output ON/OFF Control (A8183SLU)

