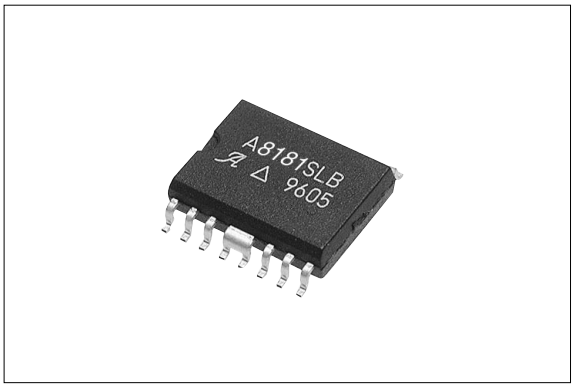
A8181SLB Series

Allegro Microsystems, INC. product

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

■Features

- Surface-mount package
- Output current: 0.5A
- Low circuit current
  Iq≤120μA (Output ON)
  Iq(off)≤20μA(Output OFF)
- Low dropout voltage: V_{DIF}≤0.3V (at I_O=0.5A)
- 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°C)

Parameter	Symbol	Ratings	Unit
DC Input Voltage	V_{IN}	10	V
DC Output Current	I_O	0.6	A
Power Dissipation	P_D	1.9(T_C=25°C)	W
Junction Temperature	T_j	+150	°C
Ambient Operating Temperature	T_{op}	–20 to +85	°C
Storage Temperature	T_{stg}	–40 to +150	°C

■Electrical Characteristics

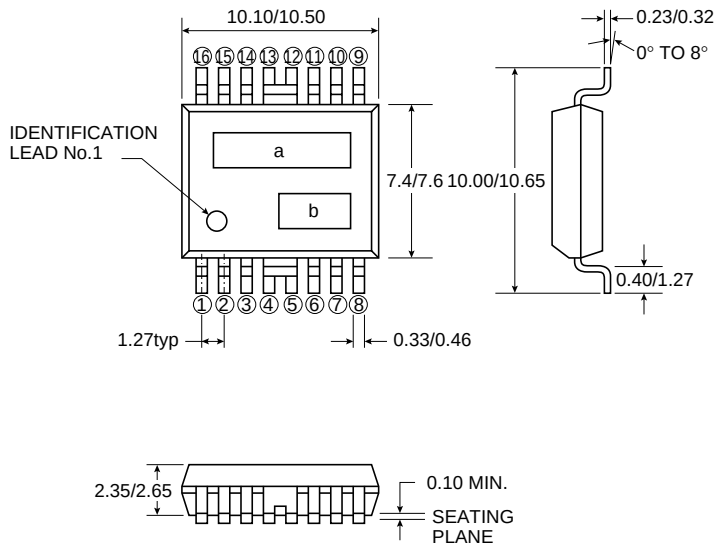
(T_a=25°C unless otherwise specified)

Parameter		Symbol	Ratings A8181SLB typ.	Ratings A8181SLB min.	Ratings A8181SLB max.	Unit
Input Voltage		V_{IN}			10	V
Output Voltage		V_O	4.85	5.00	5.15	V
		Conditions	V_{IN}=5.5 to 10V, I_O=0 to 0.5A, T_a=–20 to +85°C			
Dropout Voltage		V_{DIF}			0.3	V
		Conditions	I_O=0.5A			
Line Regulation		ΔV_{OLINE}		10	30	mV
		Conditions	V_{IN}=5.5 to 10V, I_O=0A			
Load Regulation		ΔV_{OLOAD}		50	100	mV
		Conditions	V_{IN}=6V, I_O=0 to 0.5A			
Temperature Coefficient of Output Voltage		$\Delta V_O/\Delta T_a$		±0.5	±1.0	mV/°C
		Conditions	T_j=–20 to +85°C			
Circuit Current		I_q		92	120	µA
		Conditions	V_{IN}=10V, I_O=0 to 0.5A			
Quiescent Circuit Current		$I_{q(off)}$		10	20	µA
		Conditions	V_{IN}=10V, I_O=0A, V_C=0.4V			
V_C Terminal*	Control Voltage (Output ON)	$V_{O(off)}$	2.4			V
		Conditions	V_{IN}=10V, T_a=–20 to +85°C			
	Control Voltage (Output OFF)	$V_{C.\,OL}$			0.4	V
		Conditions	V_{IN}=10V, T_a=–20 to +85°C			
	Input Current	I_C	–0.1		+0.1	µA
		Conditions	T_a=25°C			
		I_C	–1.0		+1.0	µA
		Conditions	T_a=85°C			

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

■Outline Drawing

(unit: mm)

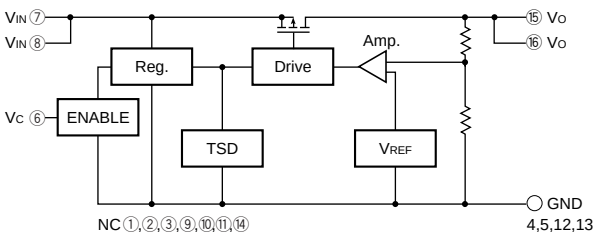


a. Part Number
b. Lot Number

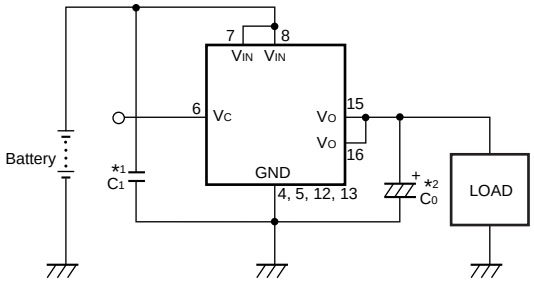
①	NC	⑨	NC
②	NC	⑩	NC
③	NC	⑪	NC
④	GND	⑫	GND
⑤	GND	⑬	GND
⑥	V_C	⑭	NC
⑦	V_{IN}	⑮	V_O
⑧	V_{IN}	⑯	V_O

Connect V_{IN} terminals (pin 7,8) and V_O terminals (pin 15,16) externally.

■Block Diagram

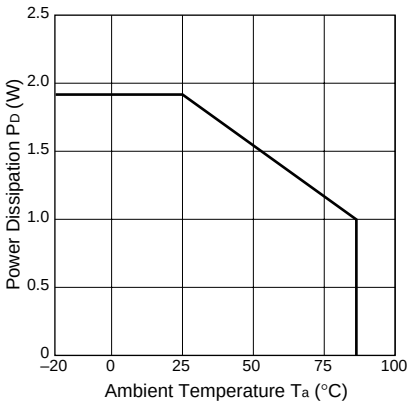


■Standard External Circuit



*1 C_1: Oscillation prevention capacitor (Approx. 0.33µF)
*2 C_2: Output capacitor (Approx. 4.7µF)

■T_a-P_D Characteristics

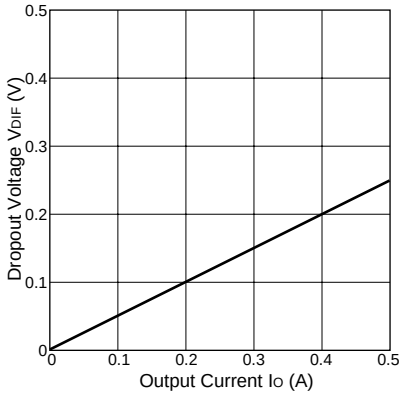


$P_D=I_O•[V_{IN}(mean)–V_O]$

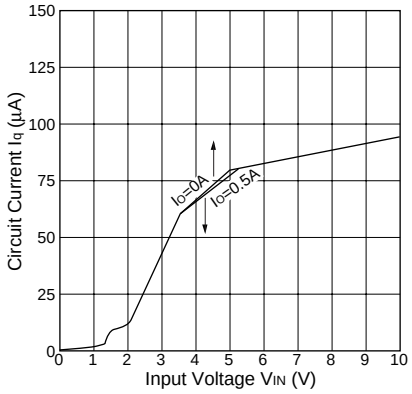
■Typical Characteristics

(T_a=25°C)

I_O vs. V_{DIF} Characteristics



Circuit Current



Rise Characteristics

