

### 簡介

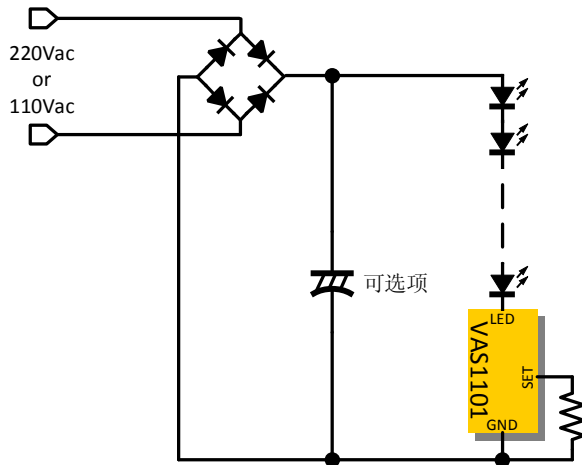
VAS1101是一顆電流可調恆流源，它為負載提供持續電流而不受恆流源兩端電壓、負載變動等影響，尤其適用於保持 LED 電流恆定的驅動等裝置：LED VF 差異和供應電壓的變動不會影響LED亮度。VAS1101能在寬輸入電壓範圍內工作，為各領域工程師提供簡單、高性價比恆流方案，且維持高性能。

與恆流二極管相比，具有電流可調功能（5mA-100mA），這給設計帶來很大的便利性。VAS1101採用SOT89-5Lh和TO252-5L封裝，具備良好的散熱性能。高達500V的工作電壓，擴展了其應用範圍、提升了可靠性。

### 訂購信息

產品型號	封裝	溫度範圍
VAS1101IQ05E	TO252-5L	-40 °C to 85°C
VAS1101IB05E	SOT89-5L	-40 °C to 85°C

### 應用線路圖



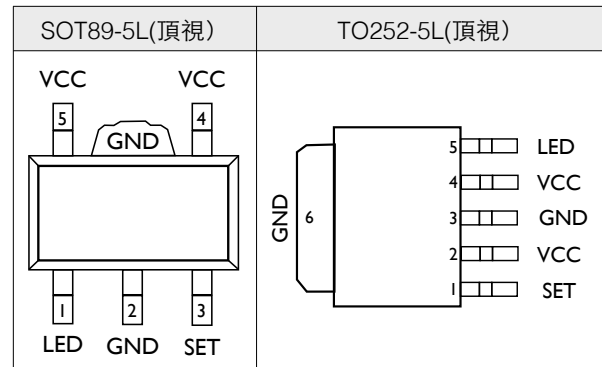
### 特色

- 高達500V的耐壓
- 輸出電流5mA~100mA可調
- 多顆並聯可以獲得更大輸出電流
- 獨特的溫度補償特性
- ±5%的恆流精度

### 應用領域

- LED燈具，照明

### 引腳配置



### 引腳說明

Name	SOT89-5L	TO252-5L	說明
LED	1	1	接LED負端
GND	2	3	參考地
SET	3	5	接一個電阻到GND。LED電流=350mV/RSET
VCC	4, 5	2, 4	5V Output, 使用時浮空
EP	散熱焊盤	散熱焊盤	參考地，與GND PIN相連



絕對最大值

Parameters	Maximum Ratings
LED to GND	-0.3V to 500V
VCC, SET to GND	-0.3V to 6V
Operating temperature range	-40°C to +85°C
Junction temperature	-40°C to +150°C
Storage temperature range	-65°C to +150°C
ESD human body model	2000V

電氣參數

Symbol	Parameter	Test Condition	SPEC			Unit
			Min.	Typ.	Max.	
VLED	LED工作電壓		8		500	V
V <sub>SET</sub>	SET電壓			350		mV
I <sub>LED</sub>	LED電流	R <sub>SET</sub> =70Ω		5		mA
		R <sub>SET</sub> =35Ω		10		
		R <sub>SET</sub> =23Ω		15		
		R <sub>SET</sub> =17.5Ω		20		
		R <sub>SET</sub> =14Ω		25		
		R <sub>SET</sub> =11.7Ω		30		
		R <sub>SET</sub> =10Ω		35		
		R <sub>SET</sub> =8.55Ω		40		
I <sub>ACCU</sub>	LED電流精度	V <sub>LED</sub> =12V	-5		+5	%

典型電氣特性

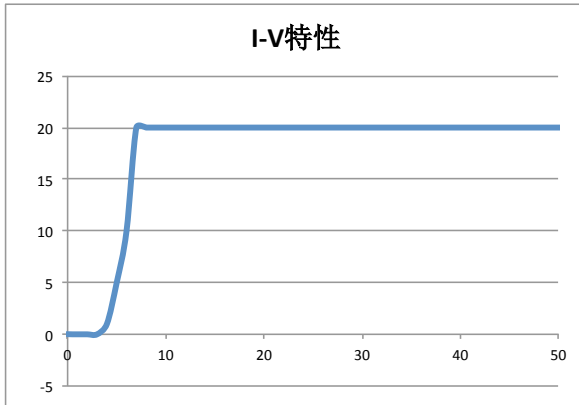
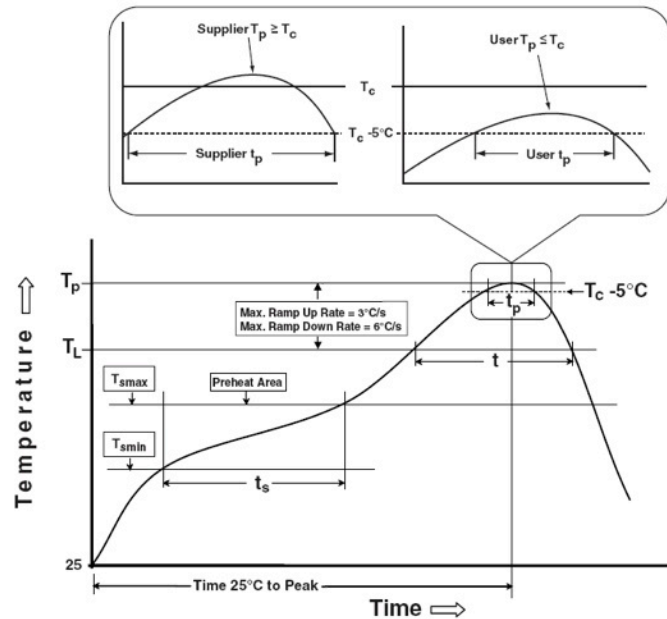


圖4 典型V-I曲線（橫座標是LED-GND電壓，縱座標是輸出電流，R = 17.5Ω）



迴流焊曲線

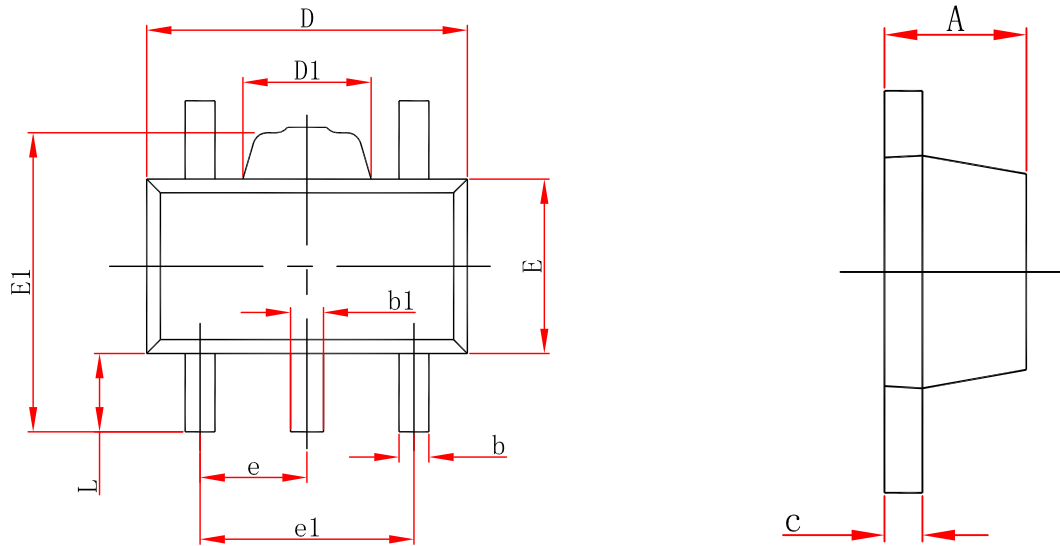
Profile Feature	Pb-Free Assembly
Preheat & Soak Temperature min (T <sub>min</sub> ) Temperature max (T <sub>max</sub> ) Time (T <sub>min</sub> to T <sub>max</sub> ) (t <sub>s</sub> )	150°C 200°C 60-120 seconds
Average ramp-up rate (T <sub>max</sub> to T <sub>p</sub> )	3°C/second max.
Liquidous temperature (T <sub>L</sub> ) Time at liquidous (t <sub>L</sub> )	217°C 60-150 seconds
Peak package body temperature (T <sub>p</sub> )*	Max 260°C
Time (t <sub>p</sub> )** within 5°C of the specified classification temperature (T <sub>c</sub> )	Max 30 seconds
Average ramp-down rate (T <sub>p</sub> to T <sub>max</sub> )	6°C/second max.
Time 25°C to peak temperature	8 minutes max.



Classification Profile



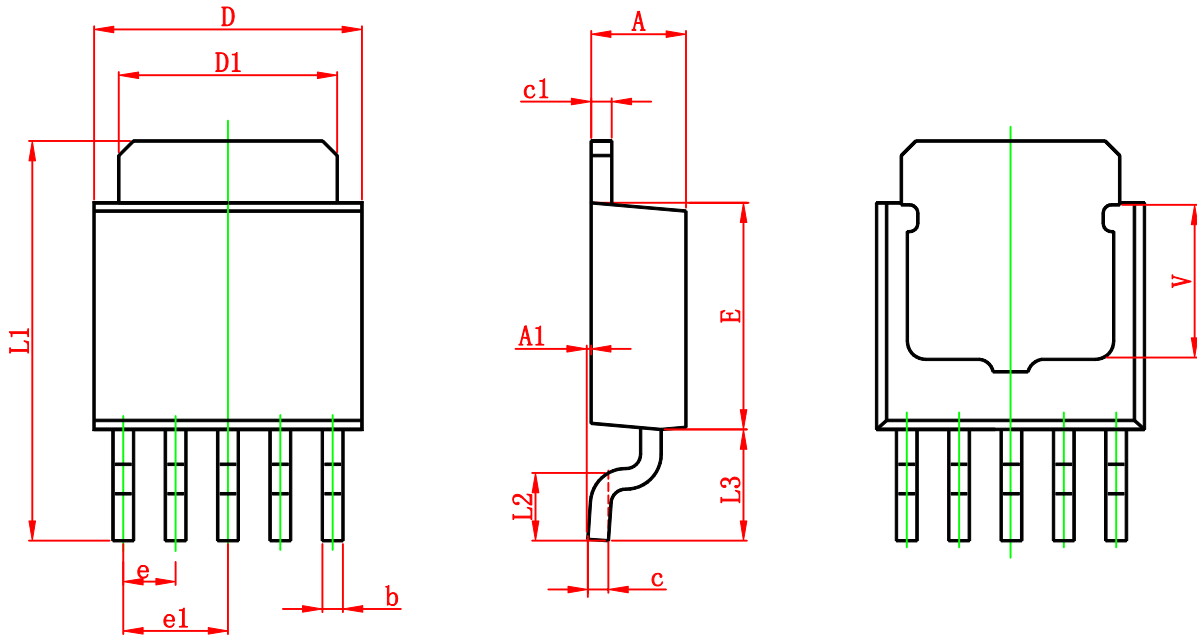
封装信息(SOT89-5L)



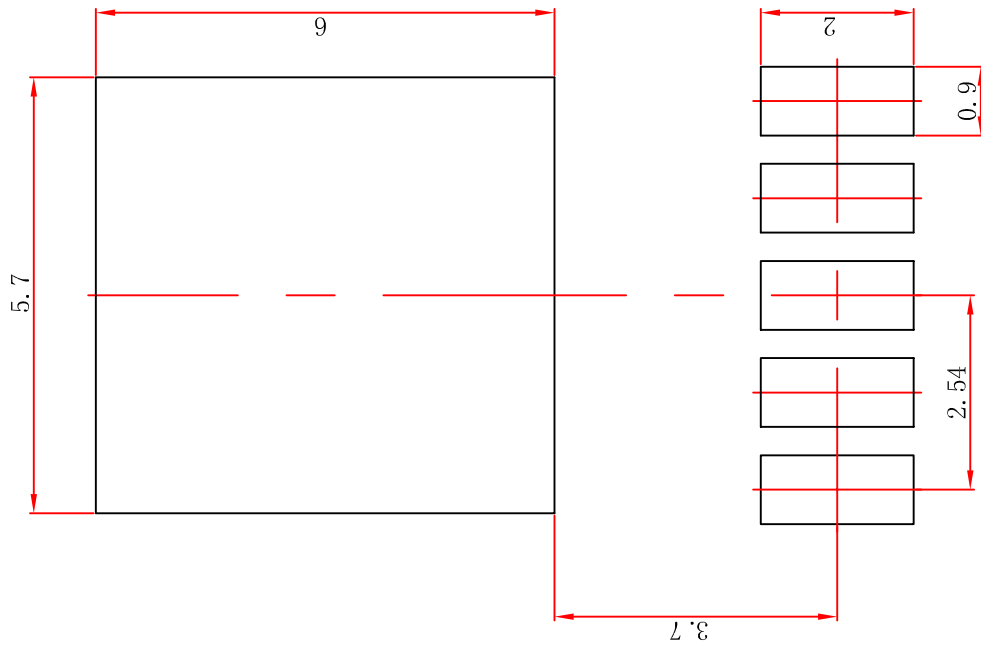
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP.		0.060TYP.	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043



封装信息(TO252-5L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.400	0.600	0.016	0.024
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	1.270 TYP		0.050 TYP	
e1	2.540 TYP		1.000 TYP	
L1	9.500	9.900	0.374	0.390
L2	1.400	1.780	0.055	0.070
L3	2.550	2.900	0.100	0.114
V	3.800 REF		0.150 REF	



(TO252-5L底部散热焊盘尺寸)

 CAUTION

Storage Conditions

- 1) This product should be used within 12 months after delivered. Store in manufacturer's package keeping the seal of aluminum coated baggage or tightly re-closed box with the following conditions.  
[Temperature:8°C...30°C, Humidity:30%...70% R.H.]
- 2) Keep the seal of aluminum coated baggage immediately before usage.
- 3) After breaking the seal of aluminum coated baggage, this product should be used within 1 week on the following conditions.  
[Temperature:≤30°C, Humidity: ≤60% R.H.]