

# SI-3000KWM Series 2-Output, Surface-Mount, Low Dropout Voltage

## ■ Features

- Compact surface-mount package (TO252-5)
- Output current: 1.0A × 2
- Low dropout voltage:  $V_{DIF} \leq 0.6V$  (at  $I_O = 1A$ )
- Built-in overcurrent and thermal protection circuits

## ■ Applications

- Secondary stabilized power supply (local power supply)

## ■ Absolute Maximum Ratings

(T<sub>a</sub>=25°C)

Parameter	Symbol	Ratings		Unit
		SI-3002KWM		
DC Input Voltage	V <sub>IN</sub> <sup>*1</sup>	18		V
Output Control Terminal Voltage	V <sub>c</sub>	6		V
Output Current <sup>*1</sup>	I <sub>O1</sub>	1.0		A
	I <sub>O2</sub>	1.0		
Power Dissipation (with two outputs ON)	P <sub>D</sub> <sup>*2</sup>	1		W
Junction Temperature	T <sub>j</sub>	-30 to +125		°C
Operating Ambient Temperature	T <sub>op</sub>	-30 to +85		°C
Storage Temperature	T <sub>stg</sub>	-40 to +125		°C
Thermal Resistance (Junction to Ambient Air)	θ <sub>ja</sub>	95		°C/W
Thermal Resistance (Junction to Lead)	θ <sub>jc</sub>	6		°C/W

\*1: V<sub>IN</sub> (max), I<sub>O1</sub> (max) and I<sub>O2</sub> (max) are restricted by the relation  $P_D = (V_{IN} - V_{O1}) \times I_{O1} + (V_{IN} - V_{O2}) \times I_{O2}$ .

\*2: When mounted on glass-epoxy board of 30 × 30mm<sup>2</sup> (copper laminate area 4.3%)

Thermal protection may operate when the junction temperature exceeds 135°C.

## ■ Electrical Characteristics

Parameter	Symbol	Ratings			Unit
		SI-3002KWM			
		min.	typ.	max.	
Output Voltage	V <sub>O1</sub>	3.234	3.300	3.366	V
	Conditions	V <sub>IN</sub> =5V, I <sub>O</sub> =10mA			
	V <sub>O2</sub>	2.450	2.500	2.550	V
	Conditions	V <sub>IN</sub> =5V, I <sub>O</sub> =10mA			
Line Regulation	ΔV <sub>OLINE1</sub>			20	mV
	Conditions	V <sub>IN</sub> =4.5 to 10V, I <sub>O</sub> =10mA			
	ΔV <sub>OLINE2</sub>			20	mV
	Conditions	V <sub>IN</sub> =4.5 to 10V, I <sub>O</sub> =10mA			
Load Regulation	ΔV <sub>OLOAD1</sub>			30	mV
	Conditions	V <sub>IN</sub> =5V, I <sub>O</sub> =0 to 1A			
	ΔV <sub>OLOAD2</sub>			30	mV
	Conditions	V <sub>IN</sub> =5V, I <sub>O</sub> =0 to 1A			
Dropout Voltage	V <sub>DIF1</sub>			0.6	V
	Conditions	I <sub>O</sub> =1A			
Temperature Coefficient of Output Voltage	ΔV <sub>O1</sub> /ΔT <sub>a</sub>		±0.3		mV/°C
	Conditions	T <sub>j</sub> =0 to 100°C			
	ΔV <sub>O2</sub> /ΔT <sub>a</sub>		±0.3		mV/°C
	Conditions	T <sub>j</sub> =0 to 100°C			
Ripple Rejection	R <sub>REJ1</sub>		60		dB
	Conditions	V <sub>IN</sub> =5V, f=100 to 120Hz			
	R <sub>REJ2</sub>		60		dB
	Conditions	V <sub>IN</sub> =5V, f=100 to 120Hz			
Overcurrent Protection Starting Current <sup>*1</sup>	I <sub>S1 1</sub>	1.2			A
	Conditions	V <sub>IN</sub> =5V			
	I <sub>S1 2</sub>	1.2			A
	Conditions	V <sub>IN</sub> =5V			
Quiescent Circuit Current	I <sub>q</sub>		1	1.5	mA
	Conditions	V <sub>IN</sub> =5V, I <sub>O</sub> =0A, V <sub>c</sub> =2V			
Circuit Current at Output OFF	I <sub>q(OFF)</sub>			0.5	mA
	Conditions	V <sub>IN</sub> =5V, V <sub>c</sub> =0V			
V <sub>c</sub> Terminal	Control Voltage (Output ON) <sup>*2</sup>	V <sub>c, IH</sub>	2		V
	Control Voltage (Output OFF)	V <sub>c, IL</sub>		0.8	V
	Control Current (Output ON)	I <sub>c, IH</sub>		5	μA
	Conditions	V <sub>c</sub> =2.7V			
Control Current (Output OFF)	I <sub>c, IL</sub>	-100			μA
	Conditions	V <sub>c</sub> =0.4V			
Output OFF Voltage	V <sub>O(OFF)</sub>			0.5	V

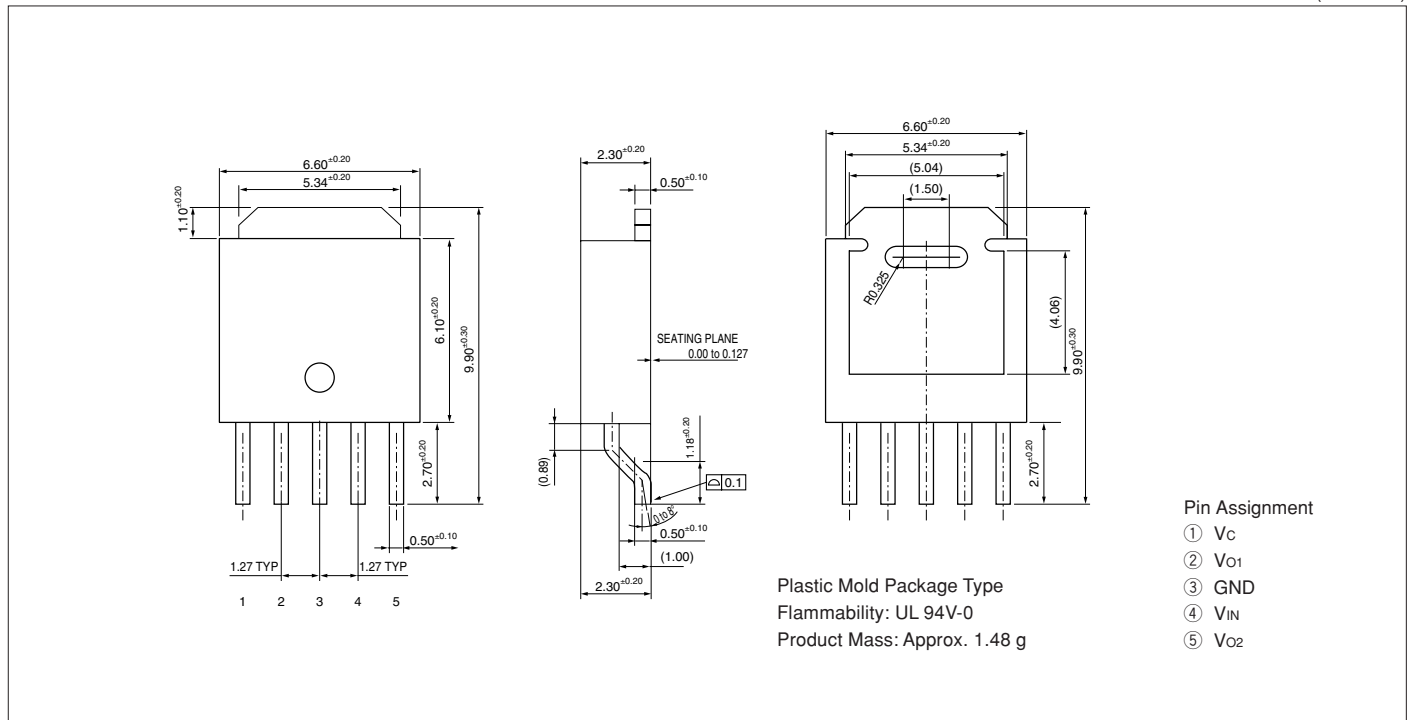
\*1: I<sub>S1 1</sub> and I<sub>S1 2</sub> are specified at the 5% drop points of output voltages V<sub>O1</sub> and V<sub>O2</sub> on the condition that V<sub>IN</sub> = the condition of protection starting current, I<sub>O</sub> = 10 mA.

\*2: Output is ON when the output control terminal V<sub>c</sub> is open. Each input level is equivalent to LS-TTL. Therefore, the devices can be driven directly by LS-TTLs.

Channels 1 and 2 are turned on or off at the same time.

External Dimensions (TO252-5)

(Unit : mm)



Block Diagram

