

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

## Features

- Compact surface-mount package (TO252-5)
- Output current:  $1.0A \times 2$
- 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

( $T_a=25^\circ C$ )

Parameter	Symbol	Ratings		Unit
		SI-3002KWM		
DC Input Voltage	$V_{IN}^{*1}$	18		V
Output Control Terminal Voltage	$V_c$	6		V
Output Current <sup>*1</sup>	$I_{o1}$	1.0		A
	$I_{o2}$	1.0		
Power Dissipation (with two outputs ON)	$P_D^{*2}$	1		W
Junction Temperature	$T_j$	-30 to +125		$^\circ C$
Operating Ambient Temperature	$T_{op}$	-30 to +85		$^\circ C$
Storage Temperature	$T_{stg}$	-40 to +125		$^\circ C$
Thermal Resistance (Junction to Ambient Air)	$\theta_{j-a}$	95		$^\circ C/W$
Thermal Resistance (Junction to Lead)	$\theta_{j-c}$	6		$^\circ C/W$

\*1:  $V_{IN}$  (max),  $I_{o1}$  (max) and  $I_{o2}$  (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  $30 \times 30mm^2$  (copper laminate area 4.3%)

Thermal protection may operate when the junction temperature exceeds  $135^\circ C$ .

## Electrical Characteristics

Parameter	Symbol	Ratings			Unit
		SI-3002KWM			
		min.	typ.	max.	
Output Voltage	$V_{O1}$	3.234	3.300	3.366	V
	Conditions	$V_{IN}=5V, I_o=10mA$			
	$V_{O2}$	2.450	2.500	2.550	V
	Conditions	$V_{IN}=5V, I_o=10mA$			
Line Regulation	$\Delta V_{OLINE1}$			20	mV
	Conditions	$V_{IN}=4.5$ to $10V, I_o=10mA$			
	$\Delta V_{OLINE2}$			20	
Load Regulation	Conditions	$V_{IN}=4.5$ to $10V, I_o=10mA$			
	$\Delta V_{OLOAD1}$			30	mV
	Conditions	$V_{IN}=5V, I_o=0$ to $1A$			
$\Delta V_{OLOAD2}$			30		
Dropout Voltage	$V_{DIF1}$			0.6	V
	Conditions	$I_o=1A$			
Temperature Coefficient of Output Voltage	$\Delta V_{O1}/\Delta T_a$		$\pm 0.3$		mV/ $^\circ C$
	Conditions	$T_j=0$ to $100^\circ C$			
	$\Delta V_{O2}/\Delta T_a$		$\pm 0.3$		
Ripple Rejection	Conditions	$T_j=0$ to $100^\circ C$			
	$R_{REJ1}$		60		dB
	Conditions	$V_{IN}=5V, f=100$ to $120Hz$			
$R_{REJ2}$		60			
Overcurrent Protection Starting Current <sup>*1</sup>	Conditions	$V_{IN}=5V, f=100$ to $120Hz$			
	$I_{S1 1}$	1.2			A
	Conditions	$V_{IN}=5V$			
$I_{S1 2}$	1.2				
Quiescent Circuit Current	Conditions	$V_{IN}=5V$			
	$I_q$		1	1.5	mA
Circuit Current at Output OFF	Conditions	$V_{IN}=5V, I_o=0A, V_c=2V$			
	$I_{q(OFF)}$			0.5	mA
Control Voltage (Output ON) <sup>*2</sup>	Conditions	$V_{IN}=5V, V_c=0V$			
	$V_c, IH$	2			V
Control Voltage (Output OFF)	Conditions				
	$V_c, IL$			0.8	V
	Conditions				
	$I_c, IH$			5	$\mu A$
Control Current (Output ON)	Conditions	$V_c=2.7V$			
	$I_c, IL$	-100			$\mu A$
Control Current (Output OFF)	Conditions	$V_c=0.4V$			
	$I_c, IL$				$\mu A$
Output OFF Voltage	$V_{O(OFF)}$			0.5	V

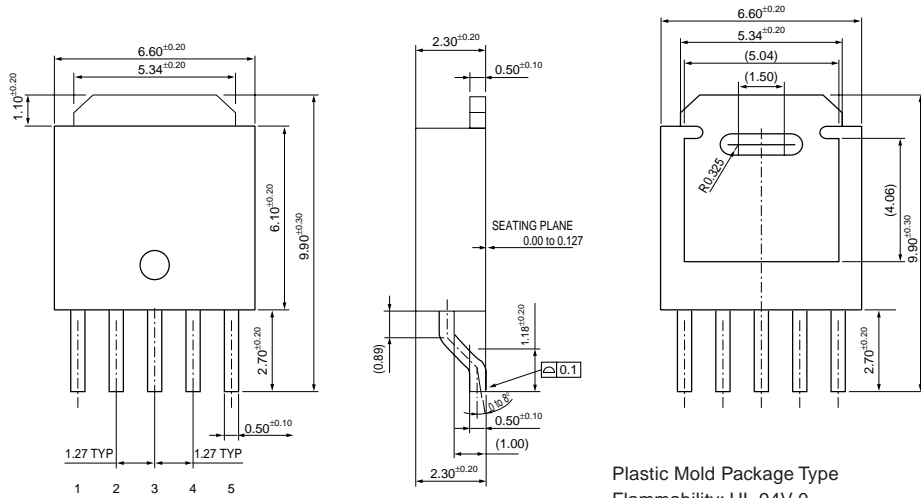
\*1:  $I_{S1 1}$  and  $I_{S1 2}$  are specified at the 5% drop points of output voltages  $V_{O1}$  and  $V_{O2}$  on the condition that  $V_{IN}$  = the condition of protection starting current,  $I_o = 10 mA$ .

\*2: Output is ON when the output control terminal  $V_c$  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)



Plastic Mold Package Type  
 Flammability: UL 94V-0  
 Product Mass: Approx. 1.48 g

- Pin Assignment
- ① Vc
  - ② Vo1
  - ③ GND
  - ④ Vin
  - ⑤ Vo2

Block Diagram

