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

■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_a=25°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*1	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	°C
Operating Ambient Temperature	T_{op}	–30 to +85	°C
Storage Temperature	T_{stg}	–40 to +125	°C
Thermal Resistance (Junction to Ambient Air)	$\theta_{j\text{-}a}$	95	°C/W
Thermal Resistance (Junction to Lead)	$\theta_{j\text{-}c}$	6	°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 × 30mm^2 (copper laminate area 4.3%)
Thermal protection may operate when the junction temperature exceeds 135°C.

■Electrical Characteristics

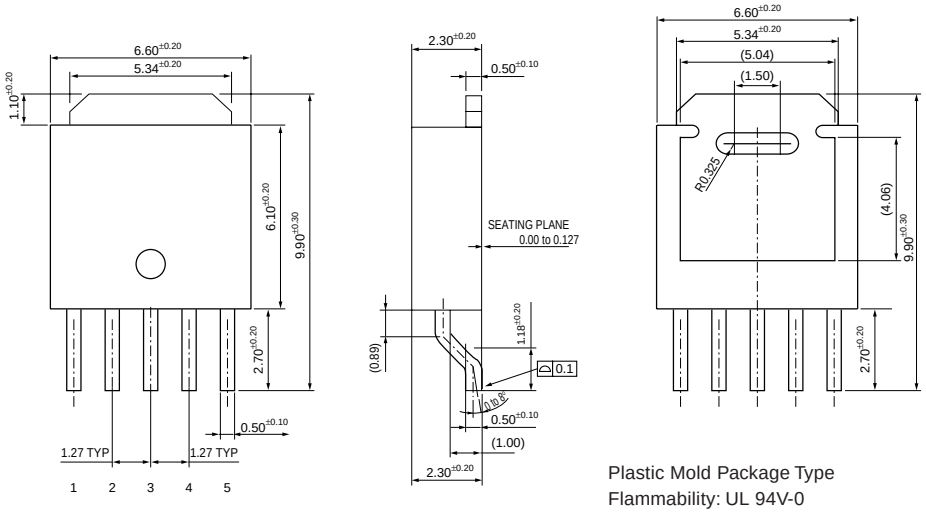
Parameter		Symbol	Ratings			Unit
			SI-3002KWM			
			min.	typ.	max.	
Output Voltage		V_{O1}	3.234	3.300	3.366	V
		Conditions	V_{IN}=5V, I_O=10mA			
		V_{O2}	2.450	2.500	2.550	
		Conditions	V_{IN}=5V, I_O=10mA			
Line Regulation		ΔV_{OLINE1}			20	mV
		Conditions	V_{IN}=4.5 to 10V, I_O=10mA			
		ΔV_{OLINE2}			20	
		Conditions	V_{IN}=4.5 to 10V, I_O=10mA			
Load Regulation		ΔV_{OLOAD1}			30	mV
		Conditions	V_{IN}=5V, I_O=0 to 1A			
		ΔV_{OLOAD2}			30	
		Conditions	V_{IN}=5V, I_O=0 to 1A			
Dropout Voltage		V_{DIF1}			0.6	V
		Conditions	I_O=1A			
Temperature Coefficient of Output Voltage		$\Delta V_{O1}/\Delta T_a$		±0.3		mV/°C
		Conditions	T_j=0 to 100°C			
		$\Delta V_{O2}/\Delta T_a$		±0.3		
		Conditions	T_j=0 to 100°C			
Ripple Rejection		R_{REJ1}		60		dB
		Conditions	V_{IN}=5V, f=100 to 120Hz			
		R_{REJ2}		60		
		Conditions	V_{IN}=5V, f=100 to 120Hz			
Overcurrent Protection Starting Current*1		I_{S1} 1	1.2			A
		Conditions	V_{IN}=5V			
		I_{S1} 2	1.2			
		Conditions	V_{IN}=5V			
Quiescent Circuit Current		I_q		1	1.5	mA
		Conditions	V_{IN}=5V, I_O=0A, V_C=2V			
Circuit Current at Output OFF		$I_{q\ (OFF)}$			0.5	mA
		Conditions	V_{IN}=5V, V_C=0V			
V_C Terminal	Control Voltage (Output ON)*2	V_C, IH	2			V
	Control Voltage (Output OFF)	V_C, IL			0.8	V
	Control Current (Output ON)	I_C, IH			5	μA
		Conditions	V_C=2.7V			
	Control Current (Output OFF)	I_C, IL	–100			μA
		Conditions	V_C=0.4V			
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 V_C
② V_{O1}
③ GND
④ V_{IN}
⑤ V_{O2}

■Block Diagram