

HYBRID RECTIFIER VOLTAGE REGULATOR

SERIES SI-3000G

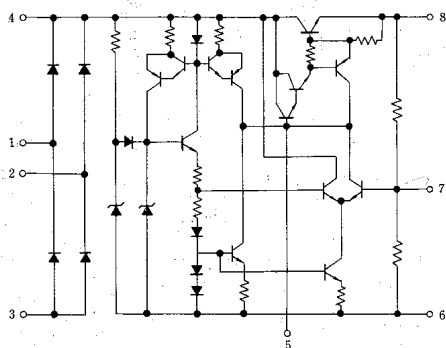
SI-3050G(5V, 2A) SI-3120G(12V, 1.5A)

SI-3150G(15V, 1.5A) SI-3240G(24V, 1.5A)

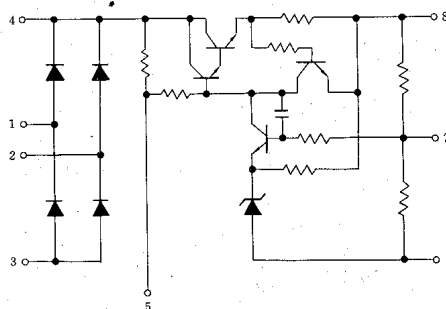
- *High power hybrid voltage regulator incorporating bridge rectifier circuit inside.
- *Incorporate a power transistor and flip-chip structure devices requiring few external components and no adjustment.
- *Built-in circuit protection against overload and short circuit.
- *Can provide production cost economy and assembly simplicity.

EQUIVALENT CIRCUIT

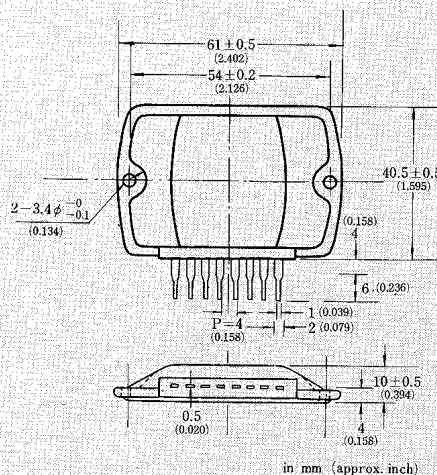
SI-3050G



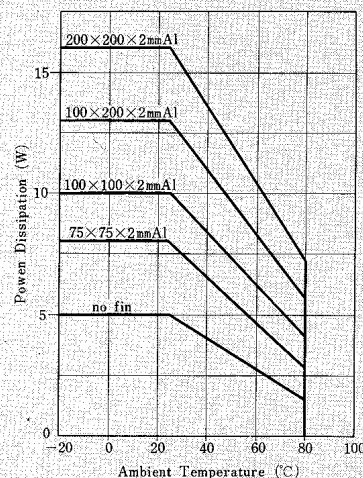
SI-3120G, SI-3150G, SI-3240G



OUTLINE DRAWING



DARATING



ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Parameter	Unit	SI-3050G	SI-3120G	SI-3150G	SI-3240G	Conditions
AC Input Voltage	V _{rms}	25	35	40	45	
Output Current	A	3.5	3.5	3.5	3.5	
Power Dissipation	W	40	40	40	40	T _c =25°C
		5	5	5	5	No Fin
Thermal Resistance (Junction to Case)	°C/W	2.5	2.5	2.5	2.5	
Allowable Surge Current for Built-in Rectifier Diode	A _{peak}	50	50	50	50	Sine half wave 10 msec
Operating Temperature	°C	-20 to +80	-20 to +80	-20 to +80	-20 to +80	
Storage Temperature	°C	-30 to +100	-30 to +100	-30 to +100	-30 to +100	

ELECTRICAL CHARACTERISTICS (T_a=25°C)

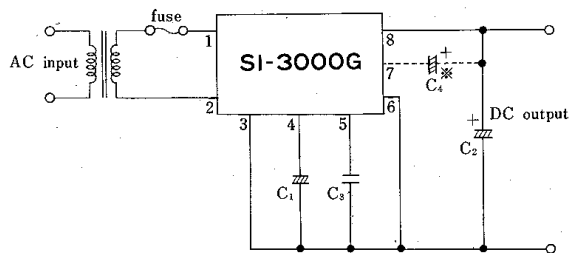
Type Number		SI-3050G			SI-3120G			SI-3150G			SI-3240G		
Parameter	Unit	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
AC Input Voltage *1	V _{rms}	10	—	20	14.5	—	30	17	—	35	24	—	40
	Conditions	I _o =1.5A			I _o =1A			I _o =1A			I _o =1A		
Output Voltage	V _{DC}	4.9	5.0	5.1	11.8	12.0	12.2	14.8	15.0	15.2	23.8	24.0	24.2
	Conditions	V _{AC} =12V, I _o =1.5A			V _{AC} =17V, I _o =1A			V _{AC} =20V, I _o =1A			V _{AC} =28V, I _o =1A		
Output Current *1	A	0	—	2	0	—	1.5	0	—	1.5	0	—	1.5
	mV	—	10	30	—	100	200	—	100	200	—	200	300
Line Regulation	Conditions	V _{AC} =10~14V, I _o =1.5A			V _{AC} =14.5~19.5V, I _o =1A			V _{AC} =17~23V, I _o =1A			V _{AC} =24~32V, I _o =1A		
	mV	—	30	60	—	80	160	—	90	180	—	100	200
Load Regulation	Conditions	V _{AC} =12V, I _o =0~2A			V _{AC} =17V, I _o =0~1.5A			V _{AC} =20V, I _o =0~1.5A			V _{AC} =28V, I _o =0~1.5A		
	mV/°C	—	±0.5	—	—	±1.5	—	—	±2	—	—	±3	—
Output Ripple Voltage	mV _{P-P}	—	2	5	—	4	8	—	4	8	—	5	10
	Conditions	V _{AC} =12V, I _o =1.5A			V _{AC} =17V, I _o =1A			V _{AC} =20V, I _o =1A			V _{AC} =28V, I _o =1A		
Output Current Limiting	A	2.7	—	3.5	1.7	—	3.5	1.7	—	3.5	1.7	—	3.5
	Conditions	V _{AC} =12V			V _{AC} =17V			V _{AC} =20V			V _{AC} =28V		

* 1 Do not exceed the power dissipation shown in the power derating.

* 2 Capacitors

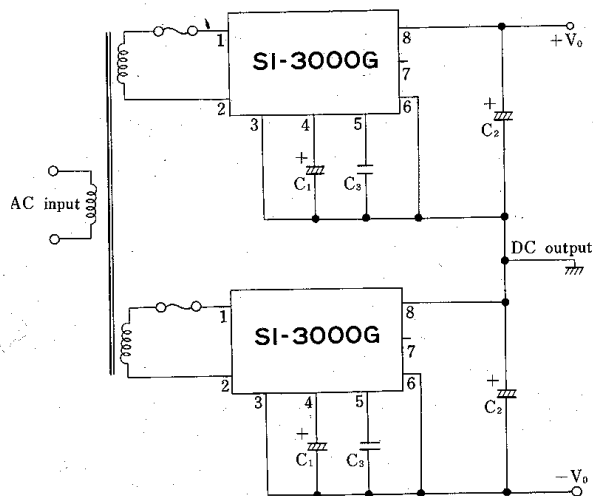
	C ₁	C ₂	C ₃
SI-3050G	3300μF	47μF	0.001μF
SI-3120G	2200μF	47μF	10μF
SI-3150G	2200μF	47μF	10μF
SI-3240G	2200μF	47μF	10μF

CONNECTIONS



* C_4 can be connected to SI-3120G, SI-3150G, and SI-3240G to reduce output ripple voltage.

CONNECTIONS FOR DUAL POWER SUPPLY (POSITIVE AND NEGATIVE)



C4 VS. RIPPLE VOLTAGE

