



Features

Dimensions:

50.8×40.6×12.7 (mm)

- High efficiency :82% typical
- Low output noise and ripple
- Output Over-current Protection
- Baseplate operating temperature range - 25°C to +85°C
- RoHS (2002/95/EC) complaint

Numbering Convention

$$\frac{\text{SF}}{\text{①}} - \frac{\text{48}}{\text{②}} \frac{\text{S}}{\text{③}} \frac{\text{5}}{\text{④}} - \frac{\text{20W}}{\text{⑤}} \frac{\text{G}}{\text{⑥}}$$

No	Features	Descriptions
①	Product Series	SF Series
②	Typical Input Voltage	C – Input Voltage: 48V
③	Number of Outputs	S – Single Output
④	Typical Output Voltage	5 – Output Voltage: 5V
⑤	Typical Output Power	20 – Output Power: 20W
⑥	RoHS feature	G – lead-free, RoHS6

1. Description

The SF48S5-20WG series products feature wide input voltage range, high power density, constant switching frequency, hexahedral metal package and high anti-interference.

2. Technical Specifications

Parameter		Test Condition	Min	Typ	Max	Unit
2.1 Input Specifications						
Nominal Input Voltage (Vinom)		————	—	48	—	Vdc
Input Voltage Range		————	36	—	72	Vdc
Remote	On	High Level (reference to -Vin, 3.6V~20V or open circuits)				
	Off	Low Level (reference to -Vin, 0~0.4V or shorted to -Vin)				
2.2 Output Specifications						
Output voltage set-point (Vonom)		Vinom, Ionom	4.95	5.00	5.05	Vdc
Typical load (Ionom)		————	—	4.0	—	A
Output voltage Adjustment Range (Voadj)		Vinom	-10	—	+10	%Vo
Line Regulation (Vov)		Vimin~Vimax, Ionom	—	-	± 0.2	%Vo
Load Regulation (Vol)		10%~100%Ionom, Vinom	—	-	± 0.5	%Vo
Output Over-current protection		————	4.6	-	6.2	A
Output Short-circuit protection		Continuous, Auto-recovery				
Dynamic Load Response	Peak Deviation	25%-50%-25%Ionom	—	—	±5	%Vo
	Settling Time	50%-75%-50%Ionom	—	—	200	μs
Output Ripple and Noise (Vrp)		Vinom ,20MHz	—	-	75	mV(pk-pk)
External Output Capacitance (Co)			0	—	4700	μF
2.3 General Specifications						
Temperature Coefficient (Tcoeff)		————	—	—	±0.02	%/°C
Efficiency (η)		Vinom, Ionom	—	82	—	%
Insulation Strength	Input to Output	Leak Current≤5mA, 1min	1500	—	—	Vdc
	Input to Case	Leak Current≤5mA, 1min	1000	—	—	Vdc
	Output to Case	Leak Current≤5mA, 1min	500	—	—	Vdc
Insulation Resistance		————	50	—	—	MΩ
Storage Temperature (Tst)		————	-55	—	+125	°C

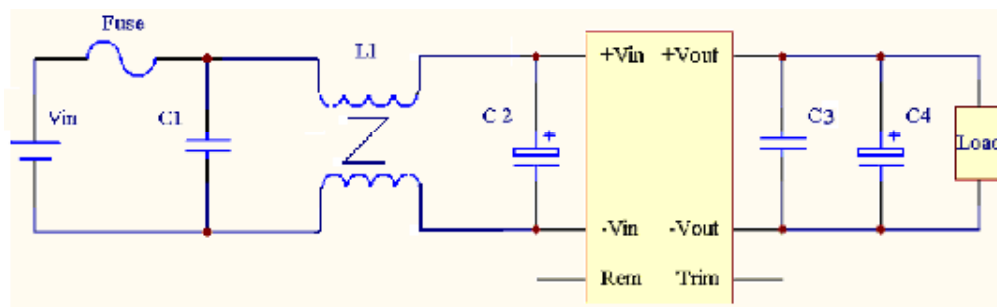
Parameter	Test Condition	Min	Typ	Max	Unit
Ambient Operating Temperature (Ta) ②	————	-25	—	+85	°C
Relative Humidity	(40±2)°C, No Dew	—	—	90	%RH
Cooling	————	Natural Convection			
MTBF	Bellcore	2×10 ⁵ h			
RoHS	RoHS (2002/95/EC)				

Importance Notice:

- ① Unless otherwise stated, all specifications are typical at nominal input voltage, full load and 25°C.
- ② See "4. Thermal Derating Curve"

3. Basic Application Circuit and Considerations

3.1 Typical Application



Recommended:

Fuse: 3A

L1: 1mH

C2: 1μF/100V ceramic capacitor

C3: 1μF/10V ceramic capacitor

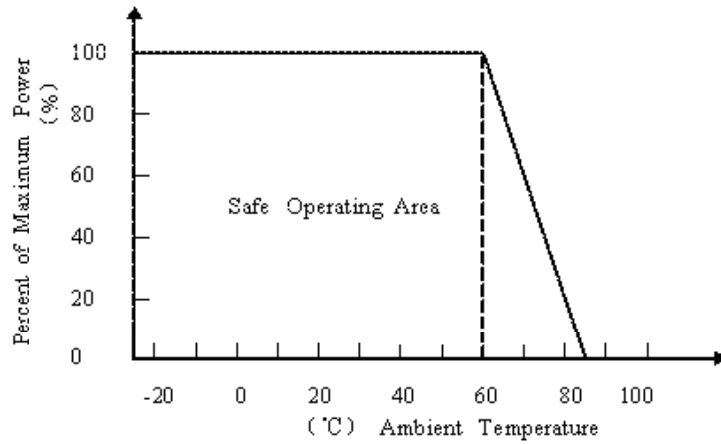
C1: 47μF /100V electrolytic capacitor

C4: 220μF /10V Tantalum electrolytic capacitor

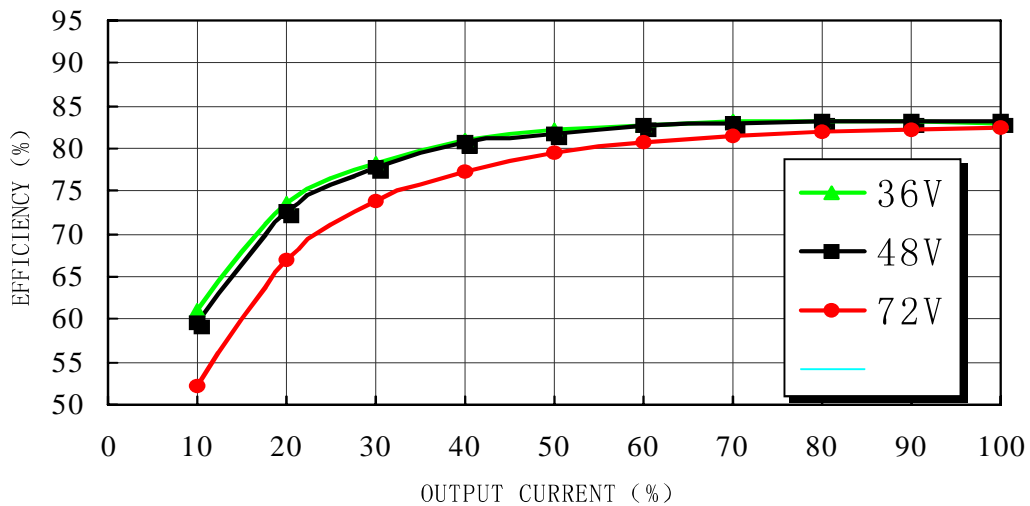
3.2 Input Voltage up to 80Vdc would cause the module damaged.

3.3 Reverse input polarity would cause the module damaged.

4 Thermal Derating Curve

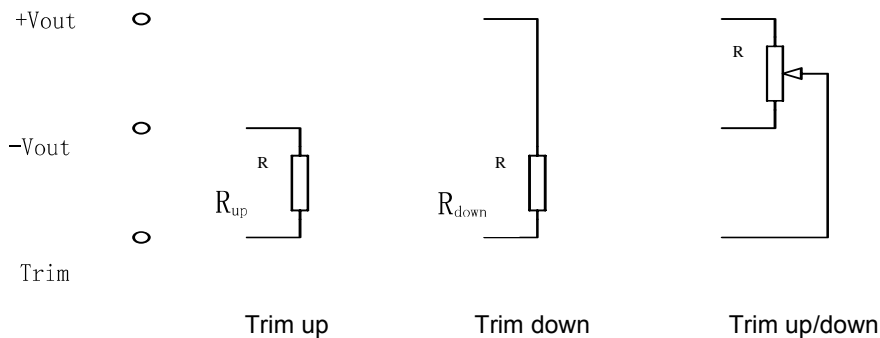


5 Efficiency Curve



6 Output Voltage Adjustment (Trim)

6.1 Output Trim Circuit



6.2 Output Trim Equations

(1) To increase the output voltage, the value of the external resistor should be

$$R_{up} = \frac{6.225}{\Delta V_{out}} - 8.2 (K\Omega)$$

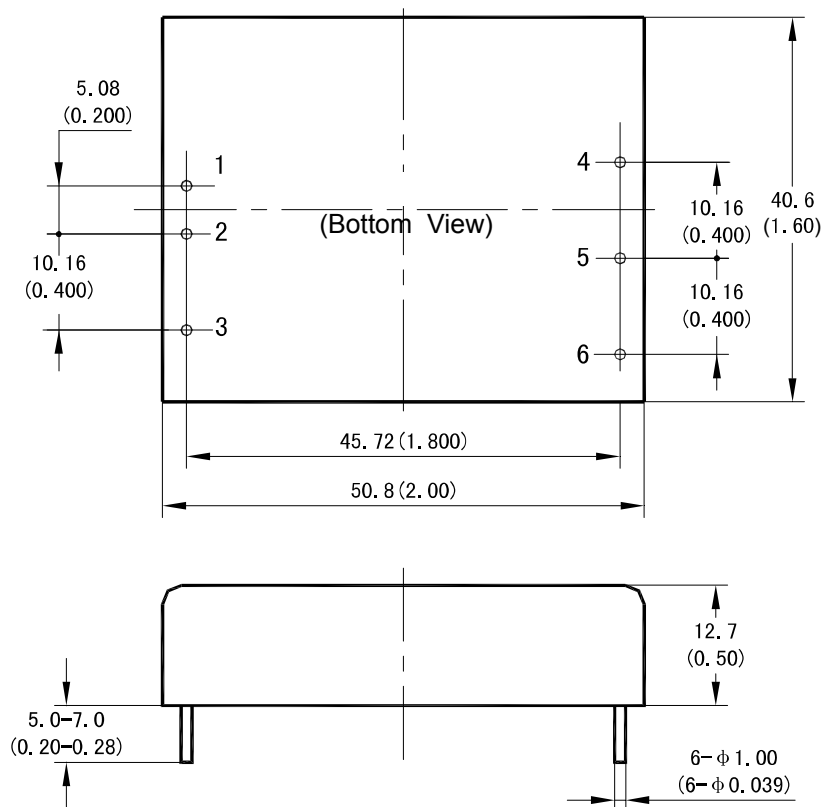
(2) To decrease the output voltage, the value of the external resistor should be

$$R_{down} = \frac{6.225}{\Delta V_{out}} - 10.69 (K\Omega)$$

Where ΔV_{out} is changes of output voltage after changing R_{up}/R_{down}

7 Dimensions and Pin definition

7.1 Dimensions Unit: mm (inch) Tolerances: .X±0.5; .XX±0.13(.X X±0.02; .X X X ±0.005)



7.2 Pin Definition

No	1	2	3	4	5	6
Symbol	+Vin	-Vin	Rem	+Vout	-Vout	Trim
Definition	Positive input	Negative input	Remote	Positive output	Negative output	Trim