

# SS SERIES

## 2~3W DC/DC CONVERTERS Single Output & Dual Outputs



H10×W21×L33 (mm)

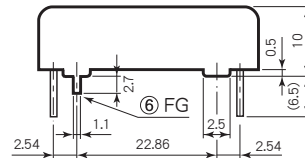
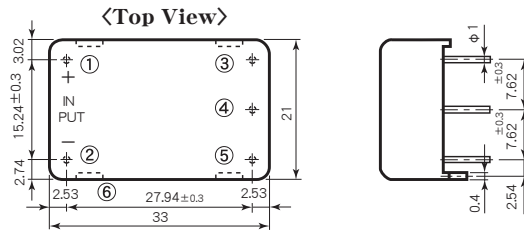
### Features

- 10mm in Height
  - Built-in Input Filter
  - Input-Output Isolation
  - High Efficiency 75~82%
  - Wide Input Voltage Range
  - High Reliability
  - Low No Load Current
  - 5 Sided Metal Shielding
  - Operating Ambient Temp. -40°C~+85°C
  - Max. Case Temperature +100°C
  - Conformity to RoHS Directive
  - Not built-in aluminum and tantalum electrolytic capacitor
- 高さ10mm
  - 入力フィルタ内蔵
  - 入出力間絶縁
  - 高効率 75~82%
  - 広範囲な入力電圧
  - 高信頼性
  - 無負荷電流が少ない
  - 5面メタルシールド
  - 動作周囲温度 -40°C~+85°C
  - 最大ケース温度 +100°C
  - RoHS指令対応
  - アルミ電解コンデンサ及びタンタルコンデンサ不使用

### General Characteristics

- Input Voltage, Range DC5, 12, 24, 48V (See Table 1)
- Output Voltage, Current See Table 1
- Output Voltage Accuracy ±2%  
±3%(5, 6V Vout only)
- Efficiency See Table 1
- Line Regulation 0.3% max. (at Vin Range)
- Load Regulation Single : ±0.5% max. (0~100% Load)  
Dual : ±3% max. (0~100% Load) (3% Vin)Vp-p max.
- Reflected Input Ripple and Noise 20mVp-p max.
- Output Ripple 100mVp-p max.
- Output Noise Built-in, Auto-restart (See Fig. 2)
- Short Circuit Protection 0.02%/°C max.
- Temperature Coefficient -40°C~+85°C (See Fig. 1)
- Operating Ambient Temp. -30°C~+85°C (5V Vin only)
- Storage Temperature -40°C~+100°C
- Isolation Voltage AC500V one minute (Input-Output-Case)
- Isolation Impedance 100MΩ min. (at DC1000V) (Input-Output-Case)
- Weight 18g max.
- Humidity 20~95% RH
- Shock 490m/s<sup>2</sup> (11msec 3directions)
- Vibration 10~55Hz 98m/s<sup>2</sup> (30minutes 3directions)
- Surface Structure 5 Sided Steel Case
- Soldering Conditions Soldering DIP 260°C, for 15 seconds max.  
Soldering iron 360°C, for 5 seconds max.
- MTBF Single : 1,200,000H  
Dual : 1,000,000H  
(Ta : 25°C, 80% Load, Nominal Vin)
- Warranty 5 years

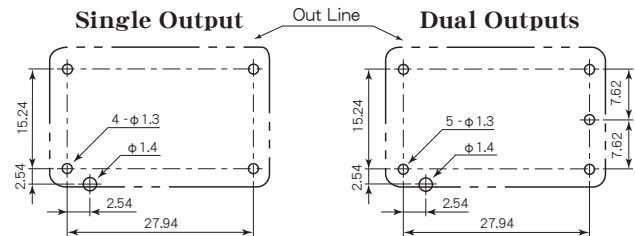
### Pin Outs & Dimensions (±0.5mm)



### Pin Outs

Single Output		Dual Outputs	
①	+Vdc in	①	+Vdc in
②	-Vdc in	②	-Vdc in
③	+Vdc out	③	+Vdc out
④	No Pin	④	Common
⑤	-Vdc out	⑤	-Vdc out
⑥	Frame Ground	⑥	Frame Ground

### Hole Configurations on PCB (Top View)



### Selection Guide

Table 1

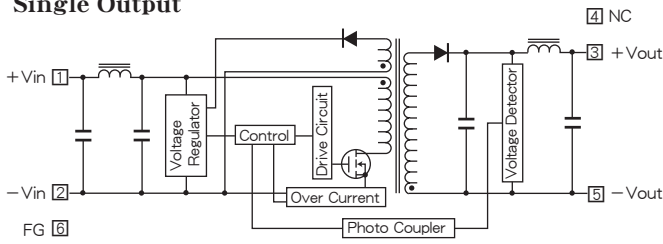
Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. DC)	Output Current (mA)	Efficiency (Typical) (%)
SS 5 - 5S400	5 (4.5~9)	5	400	76
SS 5 - 6S350		6	350	76
SS 5 - 12S200		12	200	78
SS 5 - 15S160		15	160	79
SS 5 - 24S100		24	100	75
SS 5 - 5D200		±5	±200	75
SS 5 - 12D100		±12	±100	76
SS 5 - 15D80		±15	±80	78
SS 12 - 5S500		12 (8~18)	5	500
SS 12 - 6S450	6		450	79
SS 12 - 12S250	12		250	80
SS 12 - 15S200	15		200	80
SS 12 - 24S125	24		125	80
SS 12 - 5D250	±5		±250	75
SS 12 - 12D125	±12		±125	82
SS 12 - 15D100	±15		±100	80
SS 24 - 5S500	24 (16~36)		5	500
SS 24 - 6S450		6	450	79
SS 24 - 12S250		12	250	81
SS 24 - 15S200		15	200	80
SS 24 - 24S125		24	125	80
SS 24 - 5D250		±5	±250	75
SS 24 - 12D125		±12	±125	82
SS 24 - 15D100		±15	±100	82
SS 48 - 5S500		48 (32~72)	5	500
SS 48 - 6S450	6		450	78
SS 48 - 12S250	12		250	80
SS 48 - 15S200	15		200	80
SS 48 - 24S125	24		125	80
SS 48 - 5D250	±5		±250	75
SS 48 - 12D125	±12		±125	80
SS 48 - 15D100	±15		±100	80

※ 上記仕様以外にも対応可能ですのでお問い合わせ下さい。  
Please consult with us about other specification.

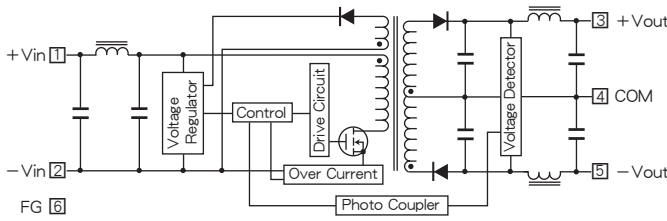
# SS SERIES DATA SHEET

## Block Diagram

### Single Output



### Dual Outputs



## Characteristic Curves

Fig. 1 Derating Curve

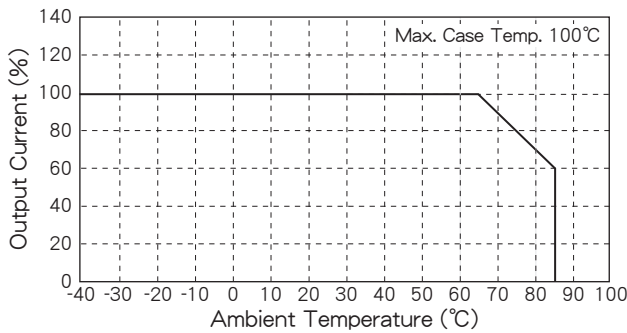


Fig. 2 Short Circuit Operating Area

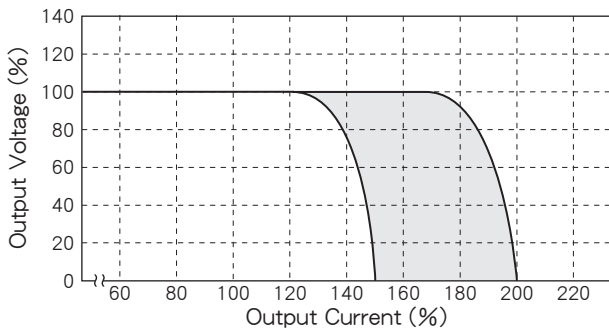


Fig. 3 Temperature Characteristic on Case Surface

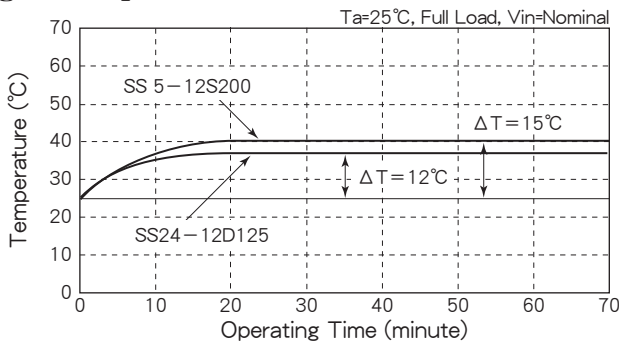


Fig. 4 No Load Current vs. Input Voltage

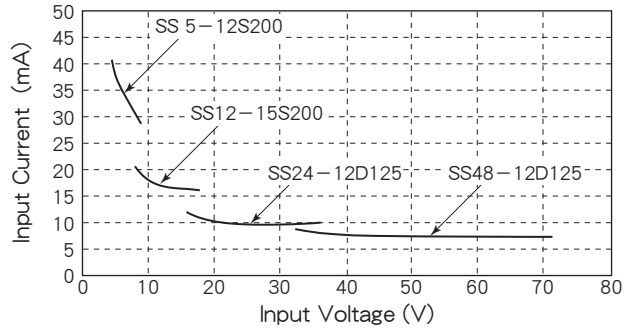


Fig. 5 Efficiency vs. Output Current (Single Output)

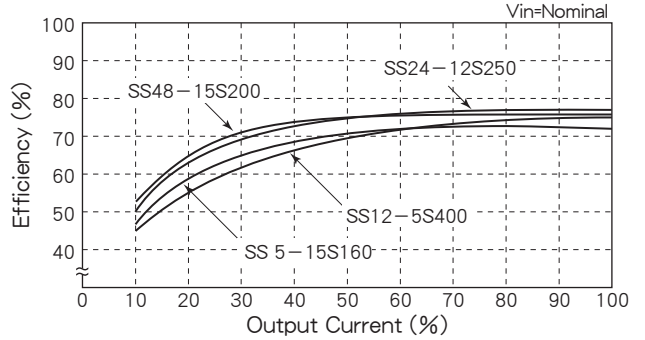


Fig. 6 Efficiency vs. Output Current (Dual Outputs)

