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℃～+85℃
- Max. Case Temperature +100℃
- Conformity to RoHS Directive
- Not built-in aluminum and tantalum electrolytic capacitor

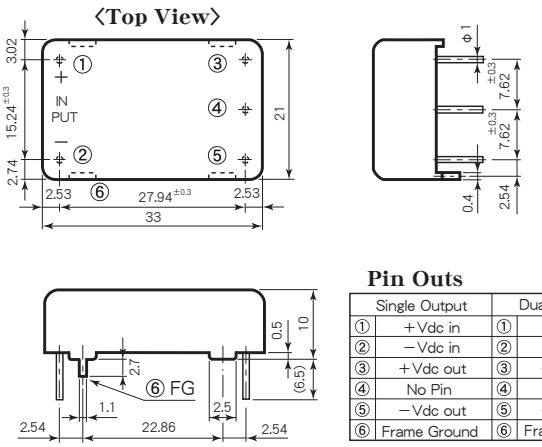
- ●高さ10mm
- ●入力フィルタ内蔵
- ●入出力間絶縁
- ●高効率 75～82%
- ●広範囲な入力電圧
- ●高信頼性
- ●無負荷電流が少ない
- ●５面メタルシールド
- ●動作周囲温度 −40℃～+85℃
- ●最大ケース温度 +100℃
- ●RoHS指令対応
- ●アルミ電解コンデンサ及び タンタルコンデンサ不使用

■ General Characteristics

(at Ta：25℃, Full Load, Nominal Vin)

- 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)
- Reflected Input Ripple and Noise: (3% Vin)Vp-p max.
- Output Ripple: 20mVp-p max.
- Output Noise: 100mVp-p max.
- Short Circuit Protection: Built-in, Auto-restart (See Fig. 2)
- Temperature Coefficient: 0.02%/℃ max.
- Operating Ambient Temp.: −40℃～+85℃ (See Fig. 1)
  −30℃～+85℃ (5V Vin only)
- Storage Temperature: −40℃～+100℃
- 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/s² (11msec 3directions)
- Vibration: 10～55Hz 98m/s²
  (30minutes 3directions)
- Surface Structure: 5 Sided Steel Case
- Soldering Conditions
  - Soldering DIP: 260℃, for 15 seconds max.
  - Soldering iron: 360℃, for 5 seconds max.
- MTBF: Single：1,200,000H
  Dual ：1,000,000H
  (Ta：25℃, 80% Load, Nominal Vin)
- Warranty: 5 years

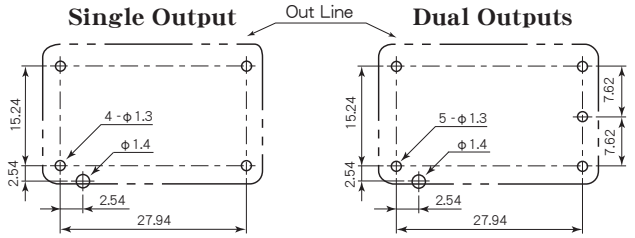
■ Pin Outs & Dimensions (±0.5mm)



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

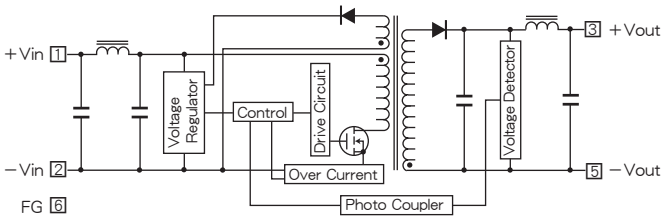
Table 1

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 5－15D 80		±15	± 80	78
SS12－ 5S500	12 (8～18)	5	500	79
SS12－ 6S450		6	450	79
SS12－12S250		12	250	80
SS12－15S200		15	200	80
SS12－24S125		24	125	80
SS12－ 5D250		±5	±250	75
SS12－12D125		±12	±125	82
SS12－15D100		±15	±100	80
SS24－ 5S500	24 (16～36)	5	500	79
SS24－ 6S450		6	450	79
SS24－12S250		12	250	81
SS24－15S200		15	200	80
SS24－24S125		24	125	80
SS24－ 5D250		±5	±250	75
SS24－12D125		±12	±125	82
SS24－15D100		±15	±100	82
SS48－ 5S500	48 (32～72)	5	500	78
SS48－ 6S450		6	450	78
SS48－12S250		12	250	80
SS48－15S200		15	200	80
SS48－24S125		24	125	80
SS48－ 5D250		±5	±250	75
SS48－12D125		±12	±125	80
SS48－15D100		±15	±100	80

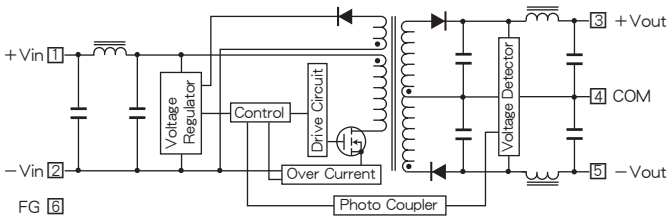
※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram

Single Output



Dual Outputs



■ Characteristic Curves

Fig. 1 Derating Curve

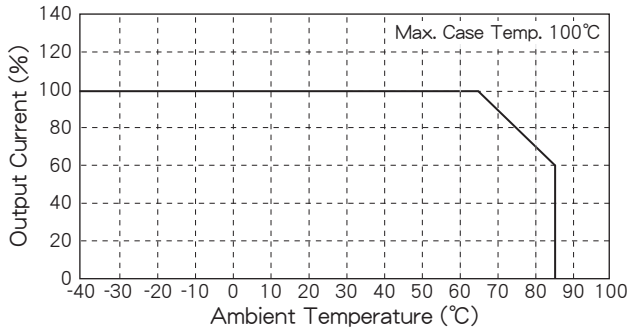


Fig. 2 Short Circuit Operating Area

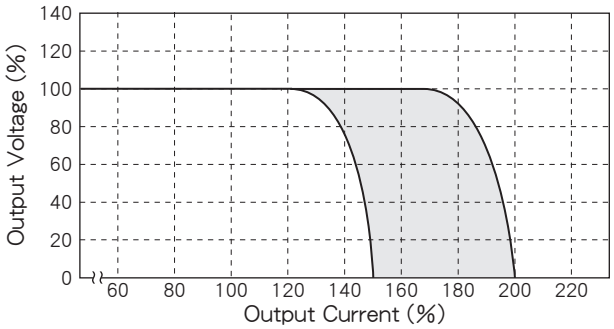


Fig. 3 Temperature Characteristic on Case Surface

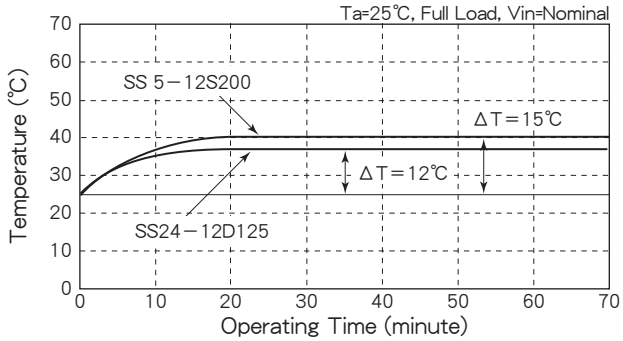


Fig. 4 No Load Current vs. Input Voltage

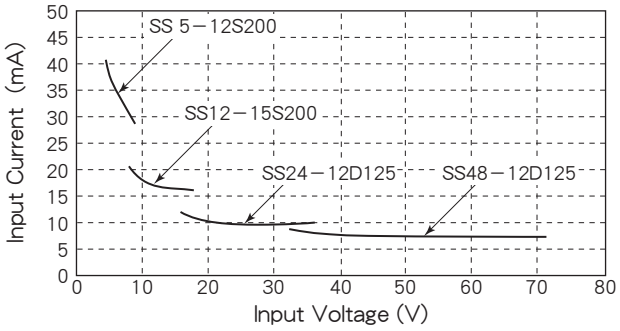


Fig. 5 Efficiency vs. Output Current (Single Output)

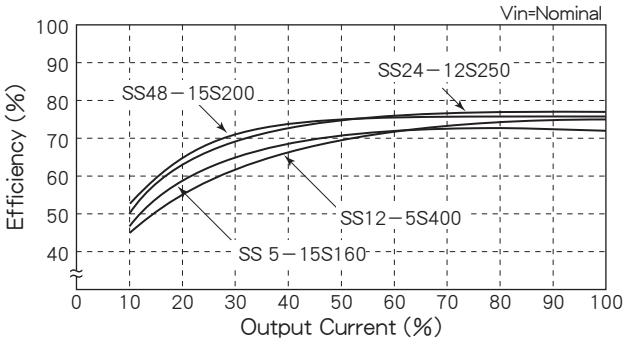


Fig. 6 Efficiency vs. Output Current (Dual Outputs)