

# SQ SERIES

## 5~6W DC/DC CONVERTERS Single Output & Dual Outputs



H10×W30×L47 (mm)

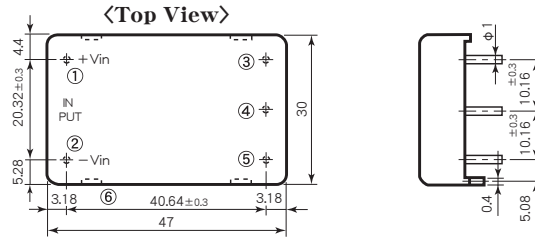
### Features

- 10mm in Height
- 高さ10mm
- Built-in Input Filter
- 入力フィルタ内蔵
- Input-Output Isolation
- 入出力間絶縁
- High Efficiency 79~87%
- 高効率 79~87%
- Wide Input Voltage Range
- 広範囲な入力電圧
- High Reliability
- 高信頼性
- Low No Load Current
- 無負荷電流が少ない
- 5 Sided Metal Shielding
- 5面メタルシールド
- Operating Ambient Temp. -40°C~+85°C
- 動作周囲温度 -40°C~+85°C
- Max. Case Temperature +100°C
- 最大ケース温度 +100°C
- Conformity to RoHS2 Directive
- RoHS2指令対応
- Not built-in aluminum and tantalum electrolytic capacitor
- 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 (at Ta : 25°C, Full Load, Nominal Vin) DC5, 12, 24, 48V (See Table 1)
- Output Voltage, Current See Table 1
- Output Voltage Accuracy ±2%
- Efficiency ±3%(5, 6V Vout only)
- Line Regulation See Table 1
- Load Regulation 0.3% max. (at Vin Range)
- Reflected Input Ripple and Noise Single : ±0.5% max. (0~100% Load)
- Output Ripple 20mVp-p max. Dual : ±3% max. (0~100% Load) (2% Vin)Vp-p max.
- Output Noise 100mVp-p max.
- Short Circuit Protection Built-in, Auto-restart (See Fig. 2)
- Temperature Coefficient 0.02%/°C max.
- Operating Ambient Temp. -40°C~+85°C (See Fig. 1)
- Storage Temperature -30°C~+85°C (5V Vin only)
- Isolation Voltage -40°C~+100°C AC500V one minute (Input-Output-Case)
- Isolation Impedance 100MΩ min. (at DC1000V) (Input-Output-Case)
- Switching Frequency 230kHz typ.
- Weight 35g 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 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

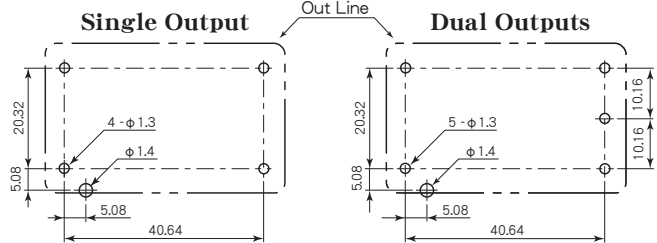
### Pin Outs & Dimensions (±0.5mm)



#### 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

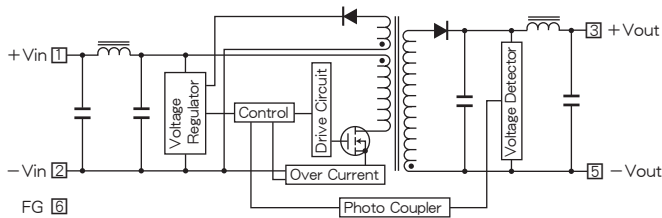
Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. DC)	Output Current (mA)	Efficiency (Typical) (%)
SQ 5 - 5S 1000	5 (4.5~9)	5	1000	79
SQ 5 - 6S 900		6	900	79
SQ 5 - 12S 500		12	500	83
SQ 5 - 15S 400		15	400	83
SQ 5 - 24S 250		24	250	83
SQ 5 - 5D 500		±5	±500	79
SQ 5 - 12D 250		±12	±250	83
SQ 5 - 15D 200		±15	±200	83
SQ 12 - 5S 1000		12 (8~18)	5	1000
SQ 12 - 6S 900	6		900	83
SQ 12 - 12S 500	12		500	85
SQ 12 - 15S 400	15		400	87
SQ 12 - 24S 250	24		250	85
SQ 12 - 5D 500	±5		±500	82
SQ 12 - 12D 250	±12		±250	86
SQ 12 - 15D 200	±15		±200	86
SQ 24 - 5S 1000	24 (16~36)		5	1000
SQ 24 - 6S 900		6	900	82
SQ 24 - 12S 500		12	500	85
SQ 24 - 15S 400		15	400	85
SQ 24 - 24S 250		24	250	85
SQ 24 - 5D 500		±5	±500	81
SQ 24 - 12D 250		±12	±250	85
SQ 24 - 15D 200		±15	±200	85
SQ 48 - 5S 1000		48 (32~72)	5	1000
SQ 48 - 6S 900	6		900	81
SQ 48 - 12S 500	12		500	85
SQ 48 - 15S 400	15		400	85
SQ 48 - 24S 250	24		250	85
SQ 48 - 5D 500	±5		±500	81
SQ 48 - 12D 250	±12		±250	85
SQ 48 - 15D 200	±15		±200	85

※ 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.

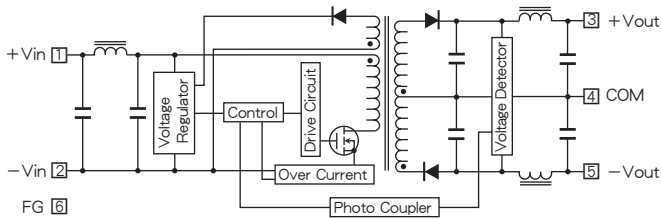
# SQ SERIES DATA SHEET

## Block Diagram

### Single Output



### Dual Outputs



## Characteristic Curves

Fig. 1 Derating Curve

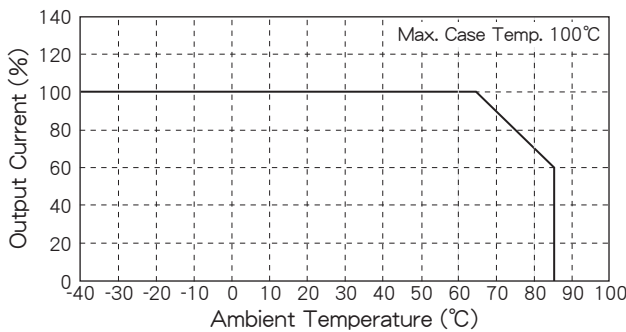


Fig. 2 Short Circuit Operating Area

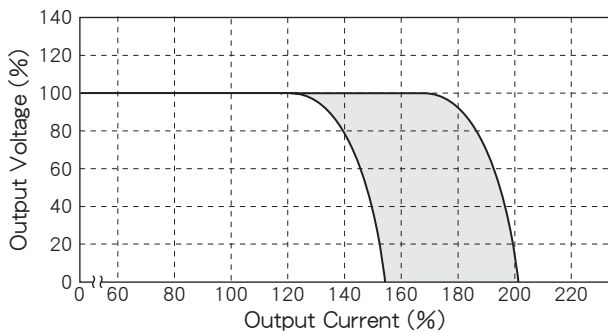


Fig. 3 Temperature Characteristic on Case Surface

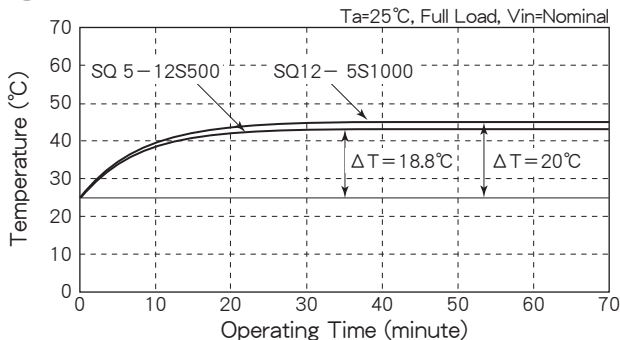


Fig. 4 No Load Current vs. Input Voltage

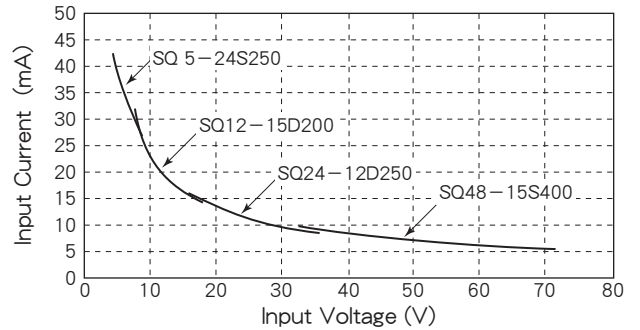


Fig. 5 Efficiency vs. Output Current

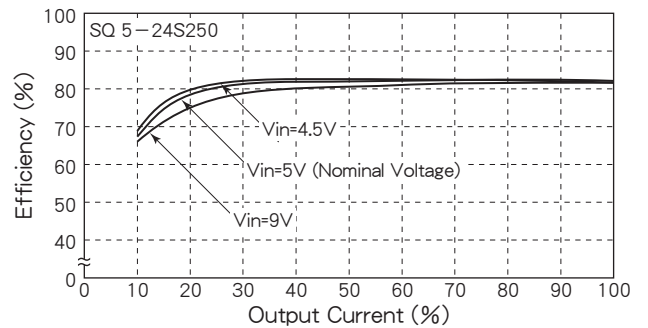


Fig. 6 Efficiency vs. Output Current

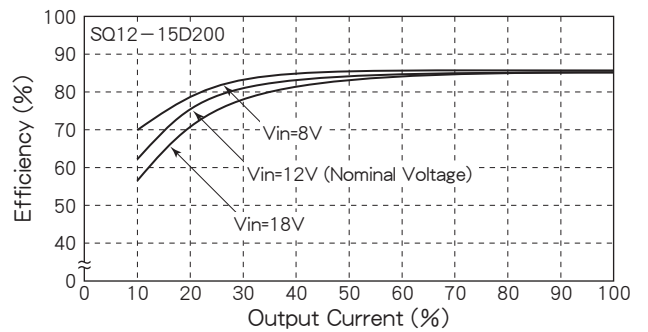


Fig. 7 Efficiency vs. Output Current

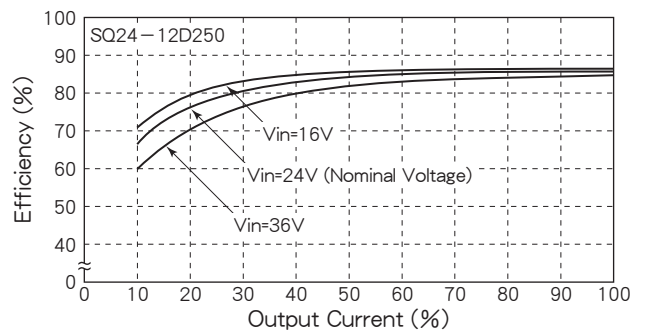


Fig. 8 Efficiency vs. Output Current

