SQ SERIES

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

H10×W30×L47 (mm)

■ Features

- ● 10mm in Height
- ● Built-in Input Filter
- ● Input-Output Isolation
- ● High Efficiency 79～87%
- ● 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

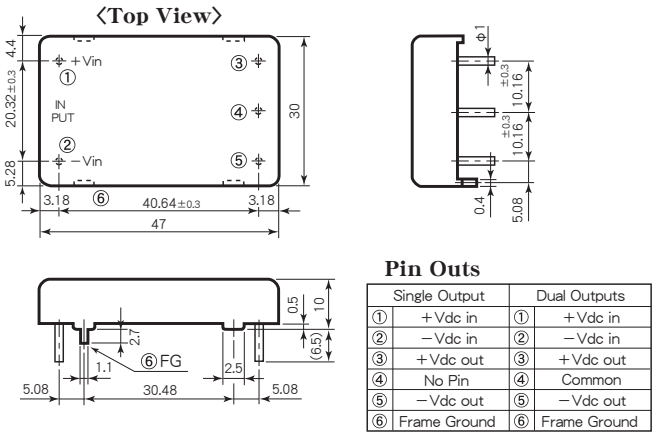
- ●高さ10mm
- ●入力フィルタ内蔵
- ●入出力間絶縁
- ●高効率 79～87%
- ●広範囲な入力電圧
- ●高信頼性
- ●無負荷電流が少ない
- ●５面メタルシールド
- ●動作周囲温度 −40℃～+85℃
- ●最大ケース温度 +100℃
- ●RoHS指令対応
- ●アルミ電解コンデンサ及び タンタルコンデンサ不使用

■ General Characteristics

(at Ta : 25℃, Full Load, Nominal Vin)

●Input Voltage, Range	DC 5, 12, 24, 48V (See Table 1)
●Output Voltage, Current	See Table 1
●Output Voltage Accuracy	±2% (5V, 6V Vout : ±3%)
●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	(2% 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)
●Storage Temperature	−40℃～+100℃
●Isolation Voltage	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/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

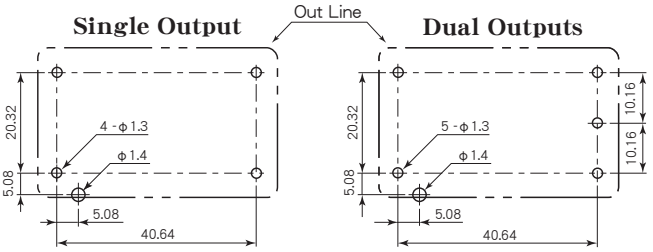
■ Pin Outs & Dimensions (±0.5mm)



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

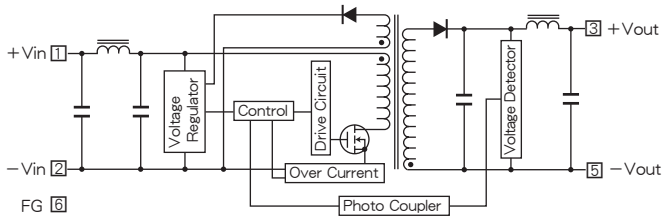
Table 1

Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. DC)	Output Current (mA)	Efficiency (Typical) (%)
SQ 5− 5S1000	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
SQ12− 5S1000	12 (8～18)	5	1000	83
SQ12− 6S 900		6	900	83
SQ12−12S 500		12	500	85
SQ12−15S 400		15	400	87
SQ12−24S 250		24	250	85
SQ12− 5D 500		± 5	± 500	82
SQ12−12D 250		±12	± 250	86
SQ12−15D 200		±15	± 200	86
SQ24− 5S1000	24 (16～36)	5	1000	81
SQ24− 6S 900		6	900	82
SQ24−12S 500		12	500	85
SQ24−15S 400		15	400	85
SQ24−24S 250		24	250	85
SQ24− 5D 500		± 5	± 500	81
SQ24−12D 250		±12	± 250	85
SQ24−15D 200		±15	± 200	85
SQ48− 5S1000	48 (32～72)	5	1000	81
SQ48− 6S 900		6	900	81
SQ48−12S 500		12	500	85
SQ48−15S 400		15	400	85
SQ48−24S 250		24	250	85
SQ48− 5D 500		± 5	± 500	81
SQ48−12D 250		±12	± 250	85
SQ48−15D 200		±15	± 200	85

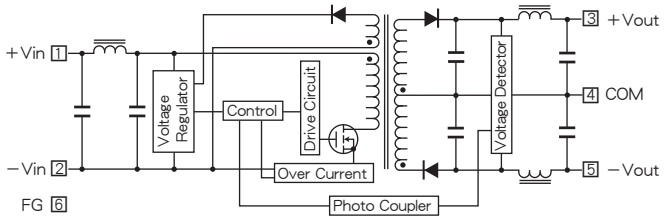
※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram

Single Output



Dual Outputs



■ Characteristic Curves

Fig 1 Derating Curve

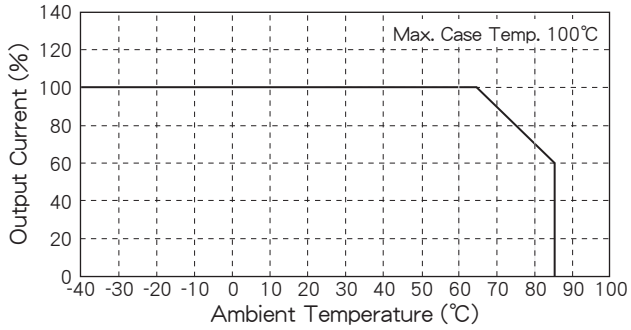


Fig 2 Short Circuit Operating Area

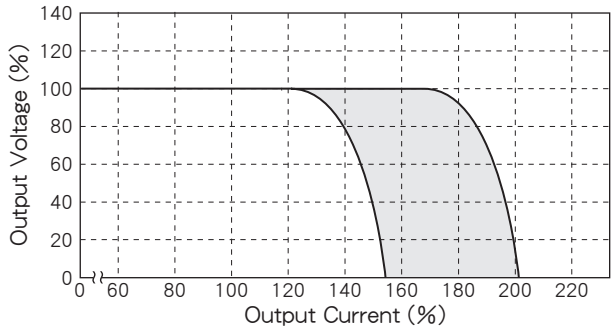


Fig 3 Temperature Characteristic on Case Surface

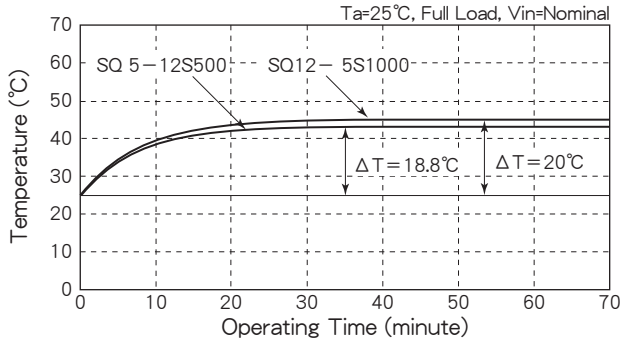


Fig 4 No Load Current vs. Input Voltage

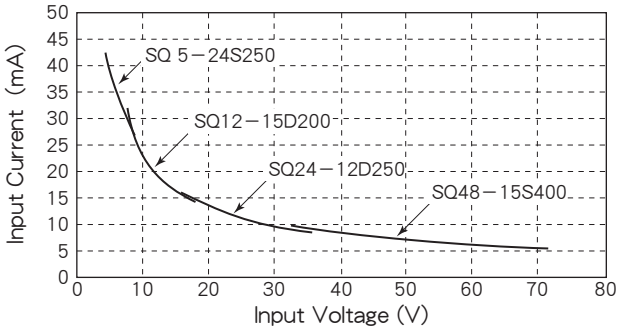


Fig 5 Efficiency vs. Output Current

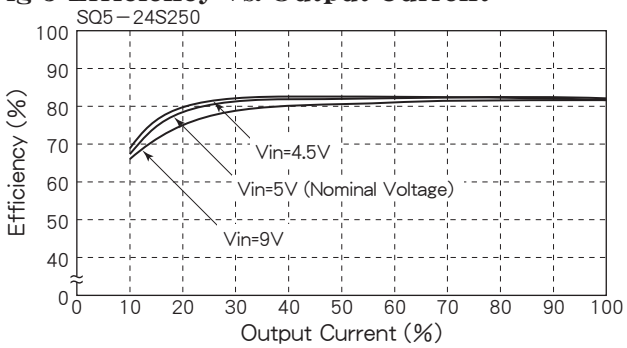


Fig 6 Efficiency vs. Output Current

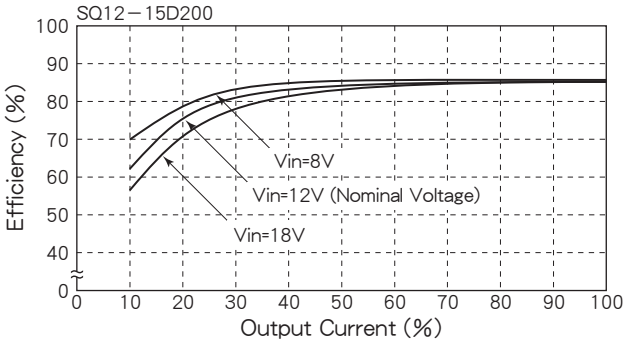


Fig 7 Efficiency vs. Output Current

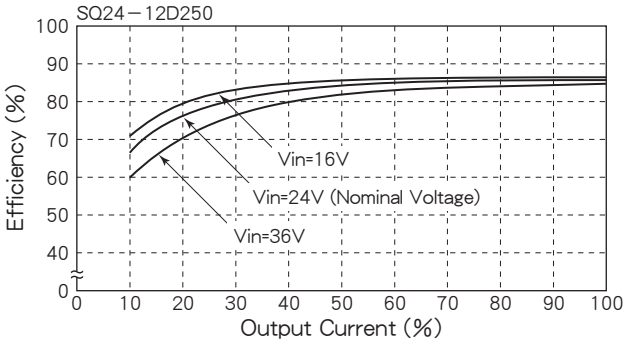


Fig 8 Efficiency vs. Output Current