

# QD SERIES

## 40~50W DC/DC CONVERTERS

### Single Output

QDU type

QDS type



H16×W50×L82 (mm)

H16×W50×L82 (mm)

### Features

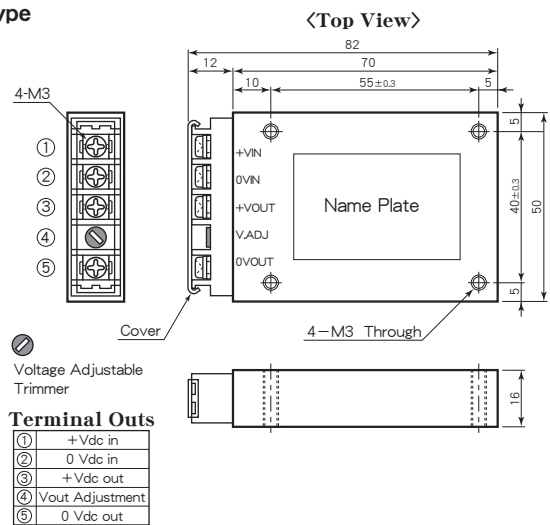
- |   |                            |
|---|----------------------------|
| ● Low Profile 16mm  | ● 薄型 16mm                  |
| ● Built-in Input Filter                                     | ● 入力フィルタ内蔵                 |
| ● Wide Input Voltage Range                                  | ● 広範囲な入力電圧                 |
| ● Input-Output Isolation                                    | ● 入出力間絶縁                   |
| ● Adjustable Output Volt. ±5%                               | ● 出力電圧可変可能 ±5%             |
| ● Input Low Voltage Protection                              | ● 入力低電圧保護回路内蔵              |
| ● Input Over Voltage Protection                             | ● 入力過電圧保護回路内蔵              |
| ● Output Over Voltage Protection                            | ● 出力過電圧保護回路内蔵              |
| 115~140% Operation  | 115~140%にて動作               |
| ● High Efficiency 86~90%                                    | ● 高効率 86~90%               |
| ● Operating Ambient Temperature -40°C~+85°C                 | ● 動作周囲温度 -40°C~+85°C       |
| ● Conformity to RoHS Directive                              | ● RoHS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

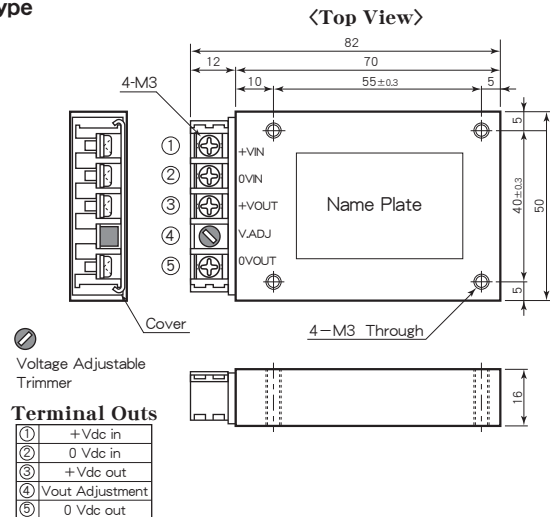
- |                                 |  |
|---------------------------------|--|
| ● Input Voltage, Range          | (at Ta : 25°C, Full Load, Nominal Vin)<br>DC12, 24, 48, 100V (See Table 1) |
| ● Output Voltage, Current       | See Table 1  |
| ● Output Voltage Range          | ±5% Adjustable   |
| ● Efficiency                    | See Table 1  |
| ● Line Regulation               | ±0.3% max. (at Vin Range)  |
| ● Load Regulation               | ±0.5% max. (0~100% Load)   |
| ● Reflected Input Ripple, Noise | (3% Vin)Vp-p max.  |
| ● Output Ripple                 | 40mVp-p max.   |
| ● Output Noise                  | 100mVp-p max.  |
| ● Short Circuit Protection      | Built-in, Auto-restart (See Fig. 2)  |
| ● Over Voltage Protection       | 115~140% Output Voltage  |
| ● Temperature Coefficient       | 0.02%/°C max.  |
| ● Operating Ambient Temp.       | -40°C~+85°C (See Fig. 1)   |
| ● Storage Temperature           | -40°C~+115°C   |
| ● Isolation Voltage             | AC1500V one minute<br>(Input-Output-Case)                                  |
| ● Isolation Impedance           | 100MΩ min. (at DC1000V)<br>(Input-Output-Case)                             |
| ● Weight                        | 150g max.  |
| ● Humidity                      | 20~95% RH  |
| ● Shock                         | 490m/s <sup>2</sup> (11msec 3directions)                                   |
| ● Vibration                     | 10~55Hz 98m/s <sup>2</sup><br>(30minutes 3directions)                      |
| ● Surface Structure             | 6 Sided Aluminum Case  |
| ● MTBF                          | 500,000H<br>(Ta : 25°C, 80% Load, Nominal Vin)                             |
| ● Warranty                      | 5 years  |

### Terminal Outs & Dimensions (±0.5mm)

QDU type



QDS type



### Selection Guide

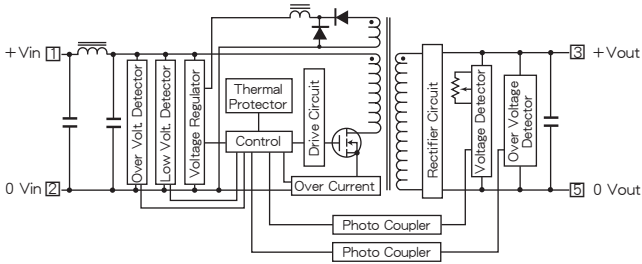
Table 1

Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical)(%)	
				20% Load	80% Load
QDU(QDS) 12-3.3S 12A	12 (8~18)	3.3	12	81	86
QDU(QDS) 12-5S 10A		5	10	82	88
QDU(QDS) 12-6S 8.4A		6	8.4	82	88
QDU(QDS) 12-12S 4.2A		12	4.2	83	88
QDU(QDS) 12-15S 3.3A		15	3.3	83	88
QDU(QDS) 12-24S 2.1A		24	2.1	83	88
QDU(QDS) 24-3.3S 12A	24 (16~36)	3.3	12	81	86
QDU(QDS) 24-5S 10A		5	10	85	88
QDU(QDS) 24-6S 8.4A		6	8.4	85	88
QDU(QDS) 24-12S 4.2A		12	4.2	84	89
QDU(QDS) 24-15S 3.3A	15	3.3	84	89	
QDU(QDS) 24-24S 2.1A	24	2.1	84	89	
QDU(QDS) 48-3.3S 12A	48 (32~72)	3.3	12	81	86
QDU(QDS) 48-5S 10A		5	10	83	88
QDU(QDS) 48-6S 8.4A		6	8.4	83	88
QDU(QDS) 48-12S 4.2A		12	4.2	85	90
QDU(QDS) 48-15S 3.3A		15	3.3	85	90
QDU(QDS) 48-24S 2.1A		24	2.1	79	89
QDU(QDS)100-3.3S 12A	100 (64~144)	3.3	12	82	87
QDU(QDS)100-5S 10A		5	10	84	89
QDU(QDS)100-6S 8.4A		6	8.4	84	89
QDU(QDS)100-12S 4.2A		12	4.2	85	90
QDU(QDS)100-15S 3.3A		15	3.3	85	90
QDU(QDS)100-24S 2.1A		24	2.1	79	89

\* 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.

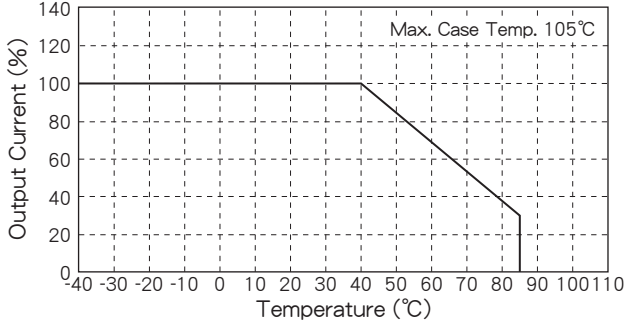
# QD SERIES DATA SHEET

## ■ Block Diagram

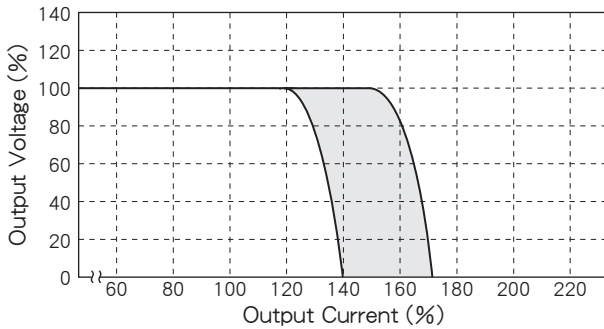


## ■ Characteristic Curves

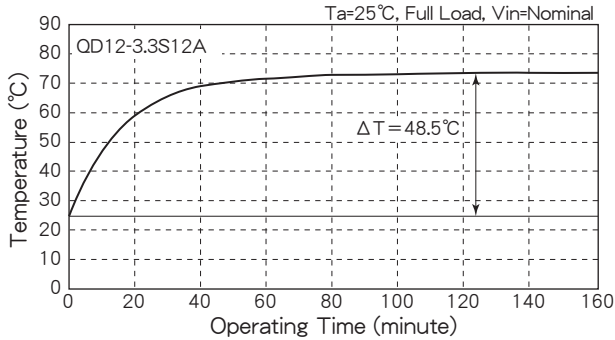
**Fig. 1 Derating Curve**



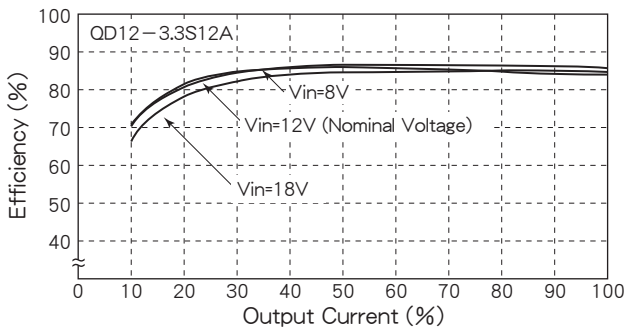
**Fig. 2 Short Circuit Operating Area**



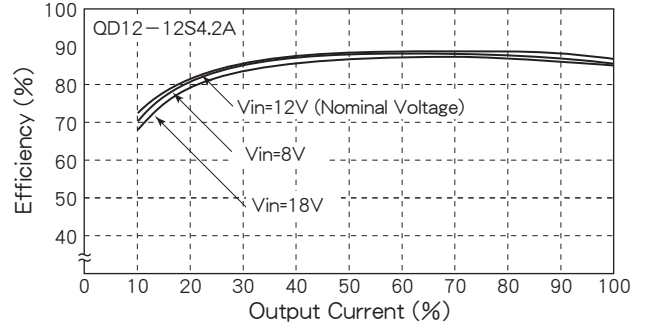
**Fig. 3 Temperature Characteristic on Case Surface**



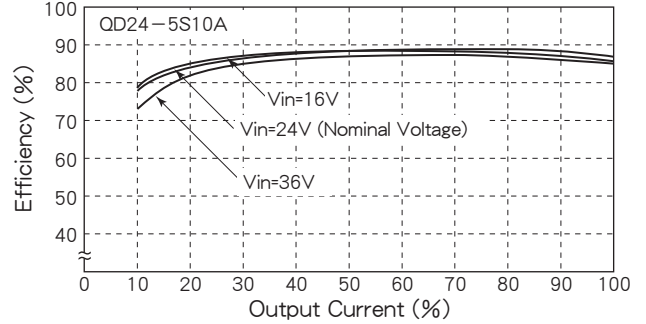
**Fig. 4 Efficiency vs. Output Current (Vin=12V)**



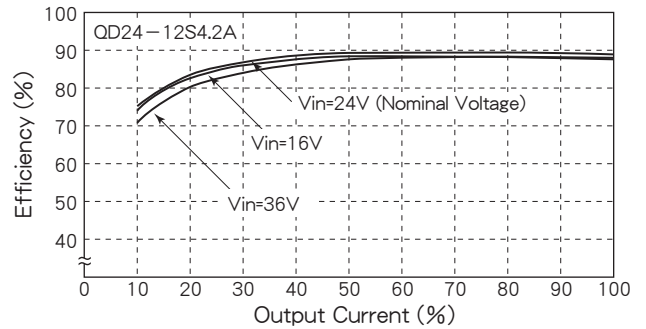
**Fig. 5 Efficiency vs. Output Current (Vin=12V)**



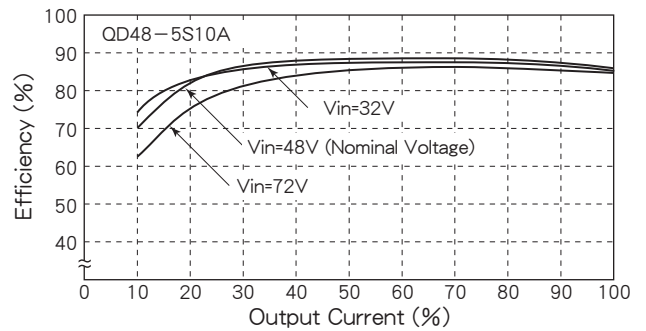
**Fig. 6 Efficiency vs. Output Current (Vin=24V)**



**Fig. 7 Efficiency vs. Output Current (Vin=24V)**



**Fig. 8 Efficiency vs. Output Current (Vin=48V)**



**Fig. 9 Efficiency vs. Output Current (Vin=100V)**

