

# DC-DC Converter Short Form

## MPDTY303S (Low Profile POL)

### ■ Features

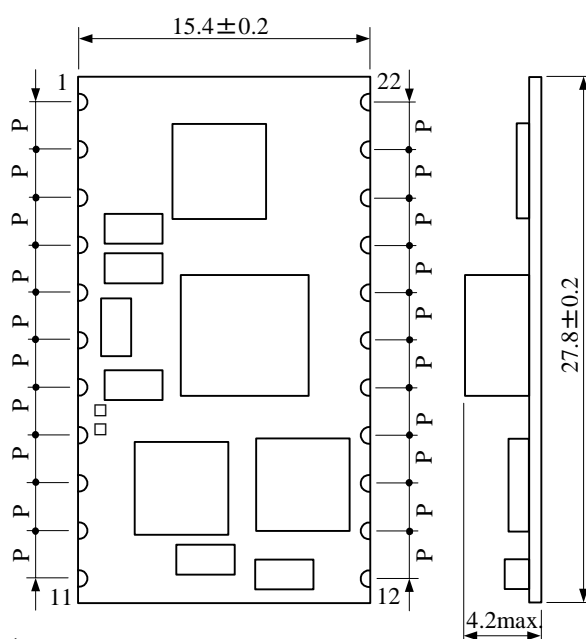
- Low profile (H<4.2mm) surface mount
- No adhesive is needed to mount on the reverse side of the user board
- Wide input range ( 6.5V to 14V )
- Wide output range ( 0.8V to 5.5V )
- Wide operational temperature ( -40°C to +85°C )
- High efficiency up to 96%
- ON/OFF control function
- Voltage sense function
- Over-current protection
- Over-temperature protection.



### ■ GENERAL SPECIFICATIONS (Ta=25°C, Cout=44μF)

Item	Symbol	Condition	MIN.	TYP.	MAX.	UNIT
Input Voltage	Vin		6.5	-	14	V
Output Voltage Adjustable Range	Vout	Vin-Vout >2.5V	0.8	-	5.5	V
Output Current	Iout	See Thermal Derating	0	-	8	A
Output Voltage Accuracy	Vo-tol	Over Vin, Io Range	-3	0	+3	%
Ripple Voltage	Vrip	Vin=12V, Vout=3.3V, Io=8A, Cout=44μF, BW=20MHz	-	25	-	mVpp
Efficiency	EFF	Vin=12V, Vout=3.3V, Io=8A	-	92	-	%

### ■ DIMENSIONS

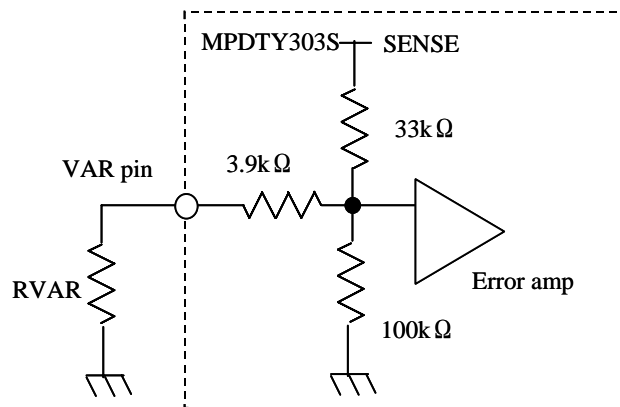


Pin No	Symbol	Function
1,2,3,4,5	Vout	Voltage Output
6,7,8,9,10,18,19,20,21	GND	GND
11	VAR	Output Voltage Adjustment
12	ON/OFF	Remote ON/OFF
13,14,15,16,17	Vin	Voltage Input
22	SENSE	Output Voltage Sense

#### ⚠ Note:

1. This datasheet is downloaded from the website of Murata Manufacturing co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This datasheet has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

## ■ OUTPUT VOLTAGE ADJUSTMENT

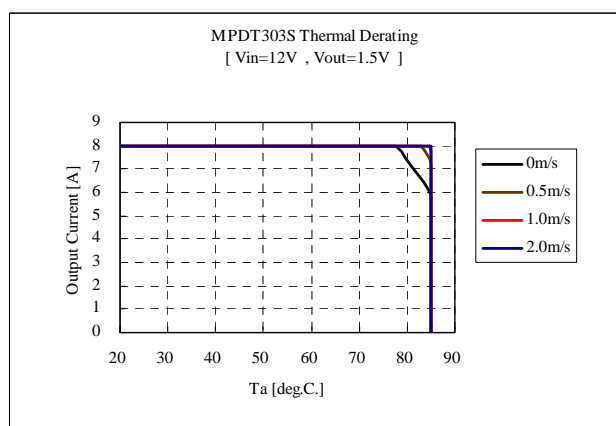
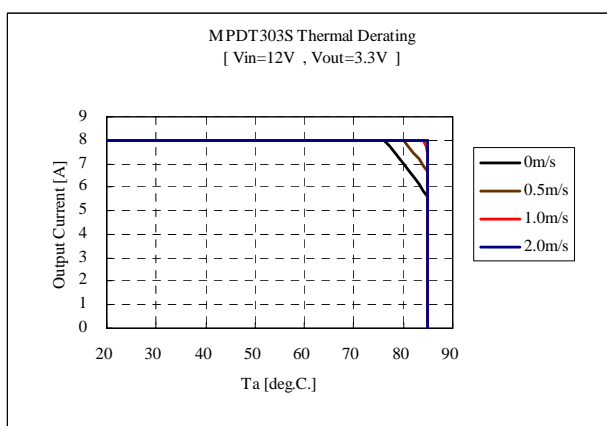


$$RVAR = \frac{19800}{V_{oadj}[V] - 0.798[V]} - 3900[\text{ohm}]$$

### <RTRIM CALCULATION EXAMPLE>

Voadj(V)	Calculated RVAR(ohm)	Rtrim example(ohm)
5.5	311	300
5.0	812	680 + 120
3.3	4013	3.9k + 110
2.5	7733	7.5k + 220
2.0	12573	12k + 560
1.8	15861	15k + 820
1.5	24305	24k + 300
1.2	45354	39k + 6.2k
1.0	94120	82k + 12k
0.8	9896100	Open

## ■ THERMAL DERATING

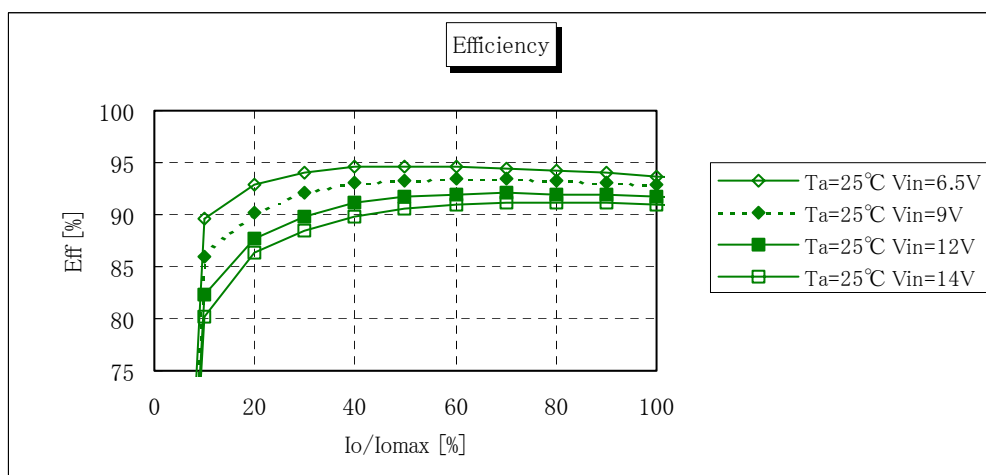
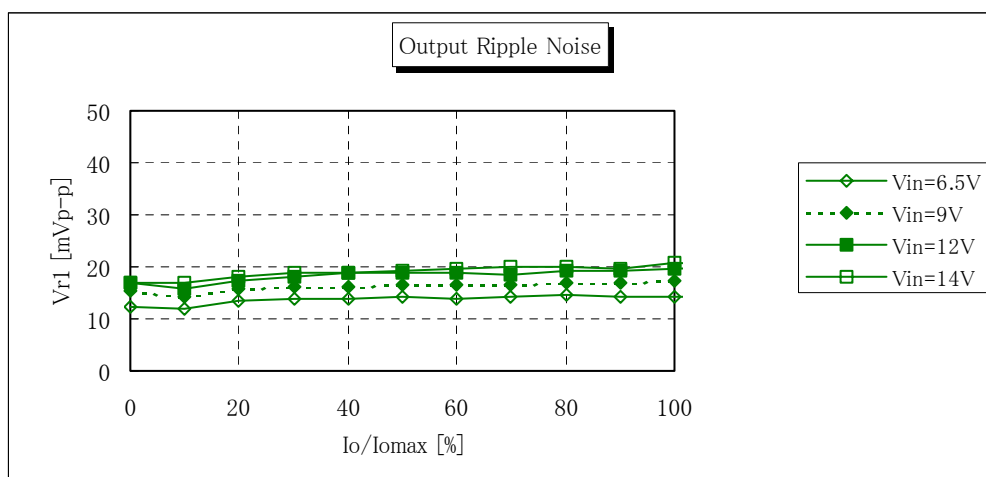
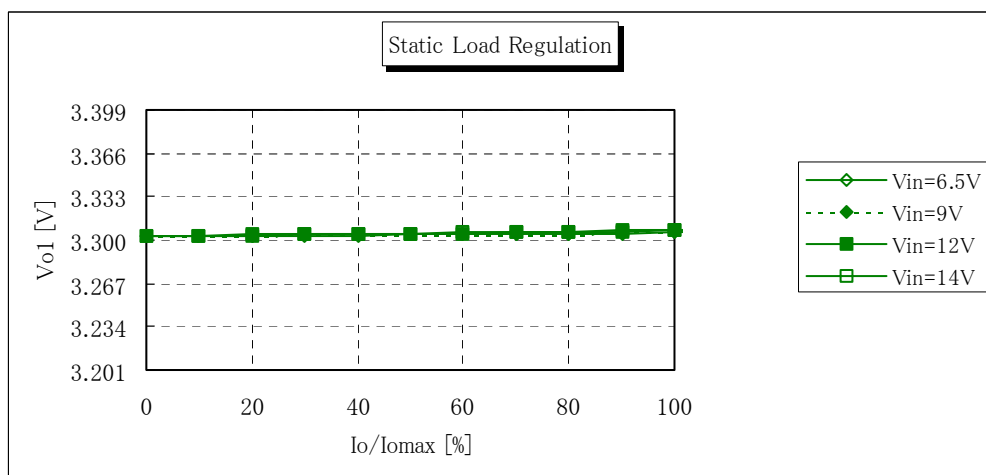


### ⚠ Note:

1. This datasheet is downloaded from the website of Murata Manufacturing co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This datasheet has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

# **TYPICAL ELECTRIC CHARACTERISTICS (Ta=25°C)**

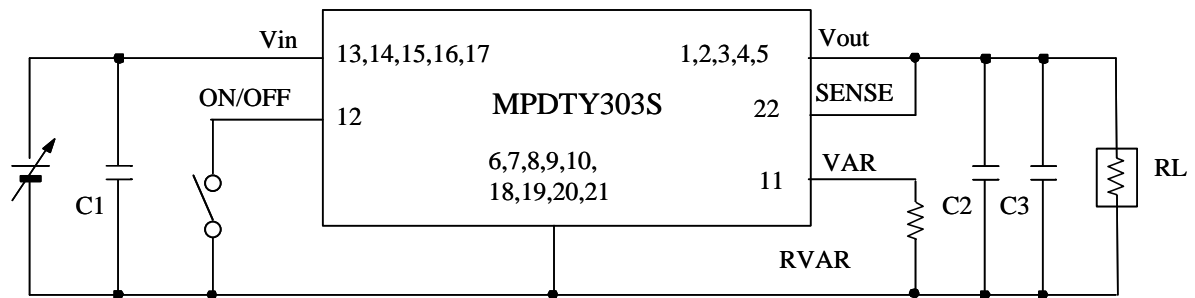
Vout=3.3V, Iomax=8A



## **Note:**

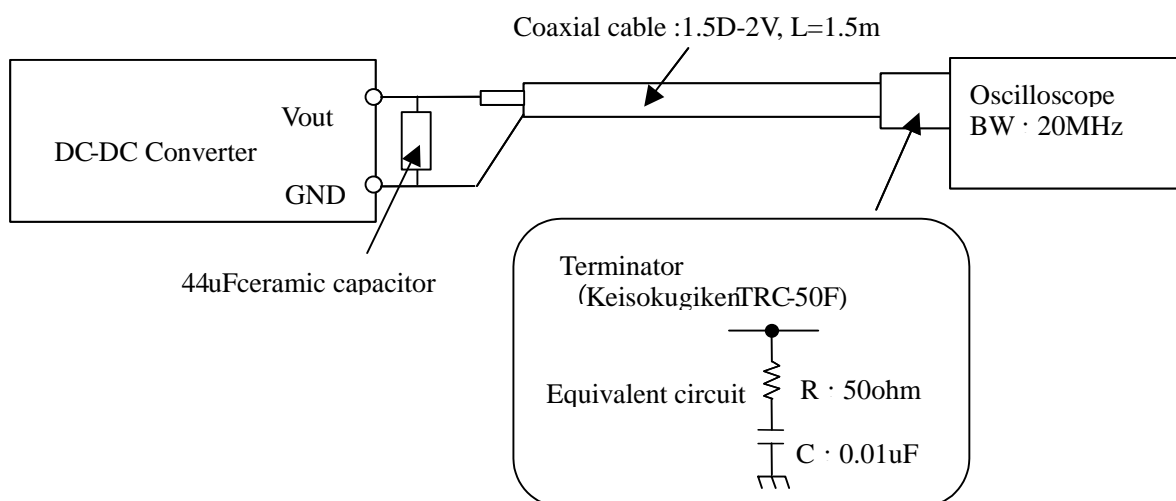
1. This datasheet is downloaded from the website of Murata Manufacturing co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This datasheet has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

## ■ TEST CIRCUIT



C1-C3 : 22 $\mu$ F/16V Ceramic capacitor or equivalent  
( C2 and C3 are required for stable operation.)

### Ripple Noise Measurement



#### ⚠ Note:

1. This datasheet is downloaded from the website of Murata Manufacturing co., ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This datasheet has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.