

# DC-DC Converter Short Form

## MPDRX103S (Ultra High Speed Response POL)

### ■ Features

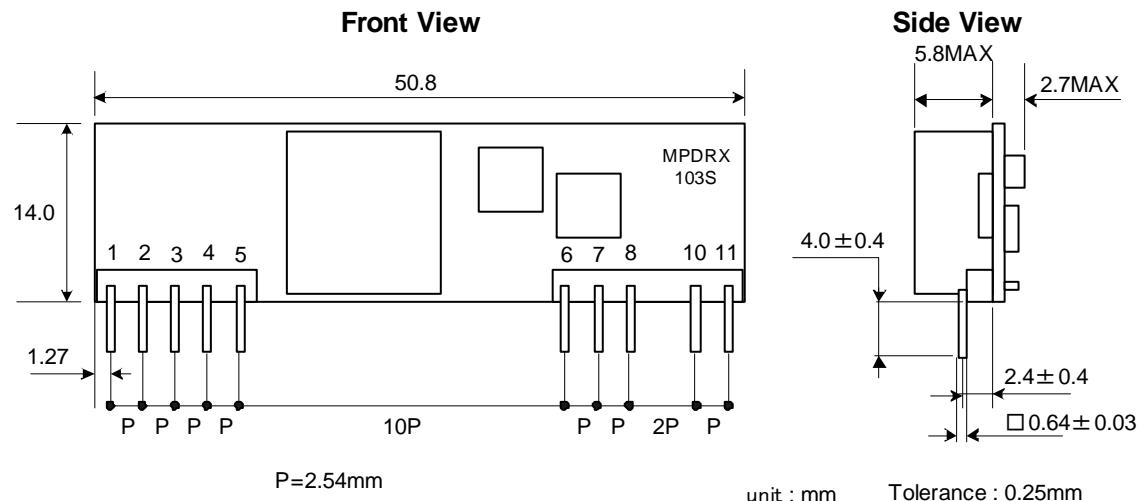
- 12V Input Voltage
- 16Amp. Output Current
- Ultra High Speed Response
- Wide Output Voltage (0.8-1.8V)
- On/Off Control Function
- Short Circuit Protection
- Over Temperature Protection
- SIP Type



### ■ GENERAL SPECIFICATIONS (Ta=25°C)

| Item           | Symbol | Condition                 | MIN. | TYP. | MAX. | UNIT |
|----------------|--------|---------------------------|------|------|------|------|
| Input Voltage  | Vin    |                           | 10.8 | 12.0 | 13.2 | V    |
| Rising UVLO    | UVLO-r |                           | 9.3  | 10.0 | 10.8 | V    |
| Falling UVLO   | UVLO-f |                           | 9.0  | 9.5  | 10.3 | V    |
| Output Voltage | Vout   | Vin=12V                   | 0.80 |      | 1.80 | V    |
| Output Current | Iout   |                           | 0    |      | 16   | A    |
| Ripple Voltage | Vrip   | Vin=12V, Vo=1.8V, Io=16A. |      | 15   |      | mVpp |
| Efficiency     | EFF    | Vin=12V, Vo=1.8V, Io=16A. |      | 86   |      | %    |

### ■ DIMENSIONS AND PIN ASSIGN

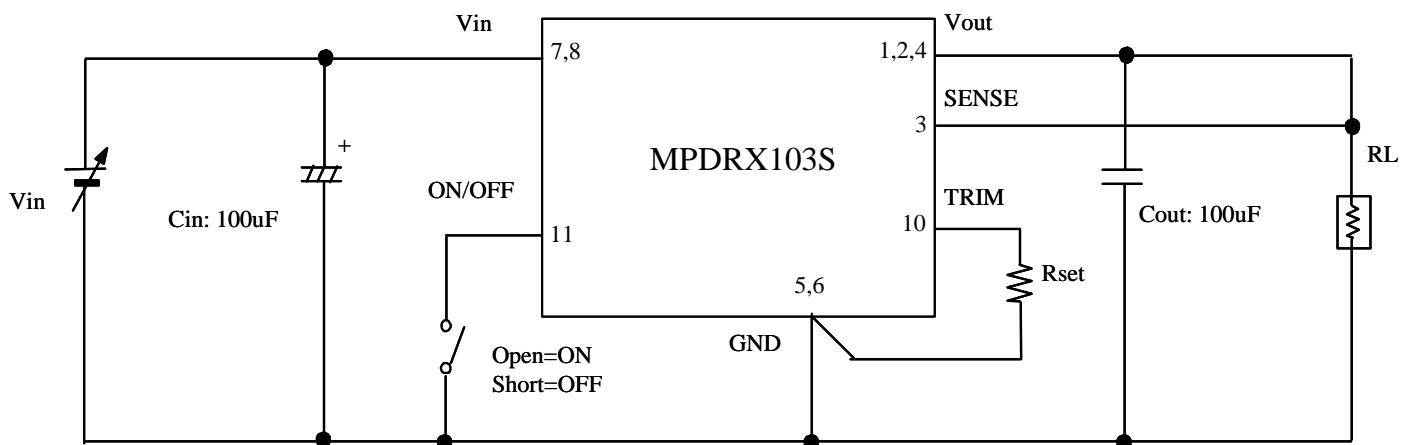


| Pin No. | Signal | Pin No. | Signal |
|---------|--------|---------|--------|
| 1,2,4.  | Vout   | 7,8.    | Vin    |
| 3.      | SENSE  | 10.     | TRIM   |
| 5,6.    | GND    | 11.     | ON/OFF |

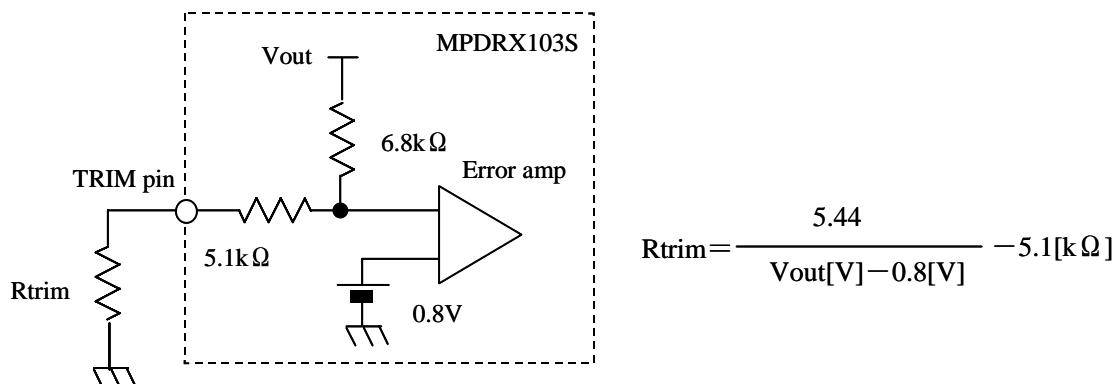
### ⚠ Note:

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



## ■ OUTPUT VOLTAGE ADJUSTMENT



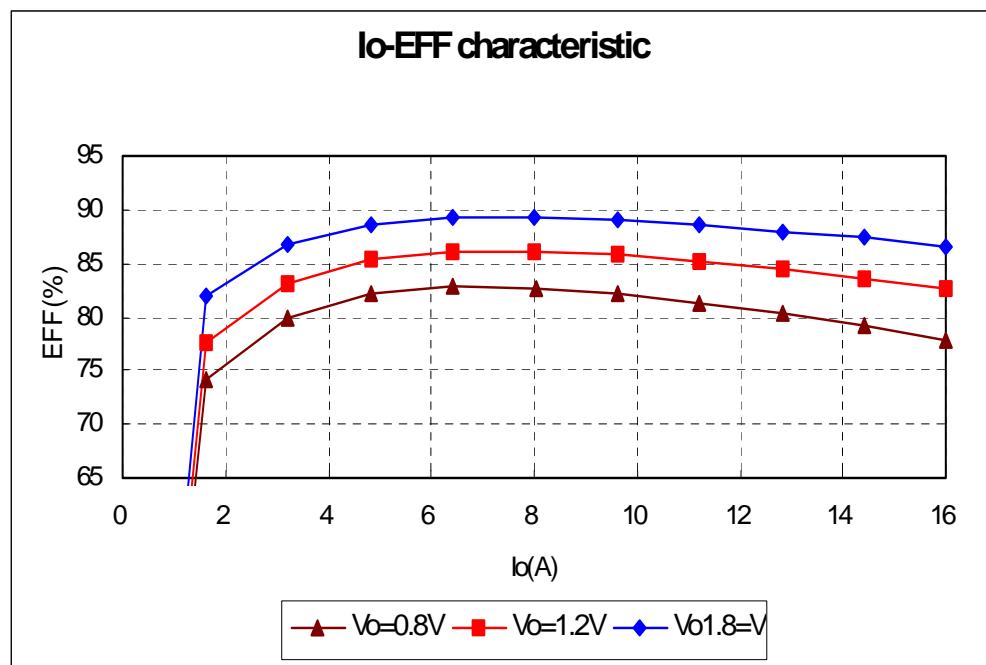
### <RTRIM CALCULATION EXAMPLE>

| Vout(V) | Calculated Rtrim(ohm) | Rtrim example(ohm) |
|---------|-----------------------|--------------------|
| 1.8     | 340                   | 340 + 10           |
| 1.5     | 2671                  | 2.4k + 270         |
| 1.2     | 8500                  | 8.1k + 390         |
| 1.0     | 22100                 | 22k + 100          |
| 0.8     | ∞                     | Open               |

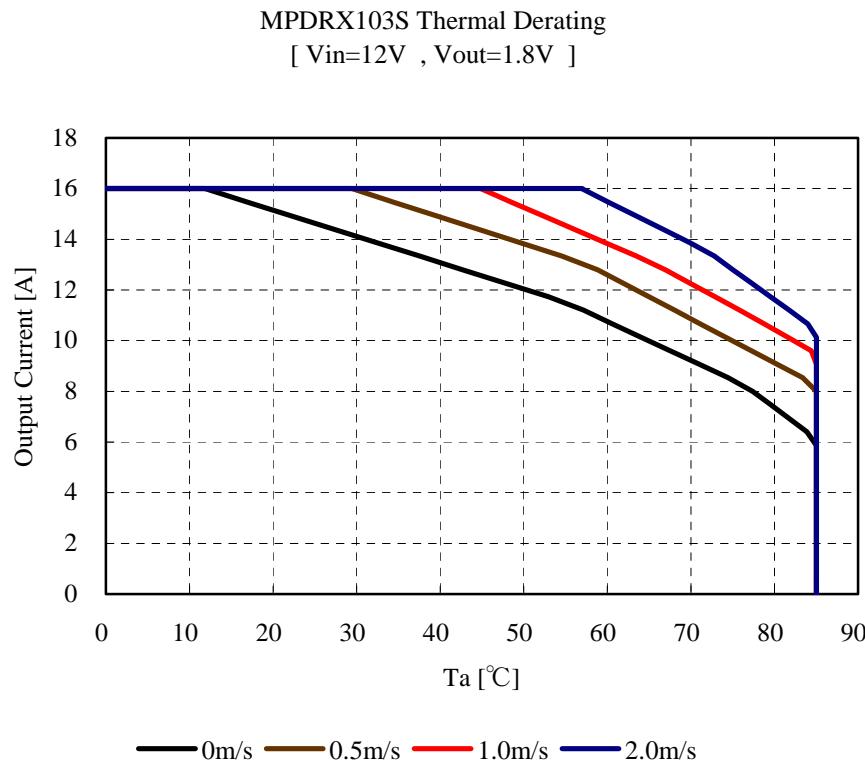
### ⚠ Note:

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.

## ■ EFFICIENCY CHARACTERISTICS



## ■ THERMAL DERATING

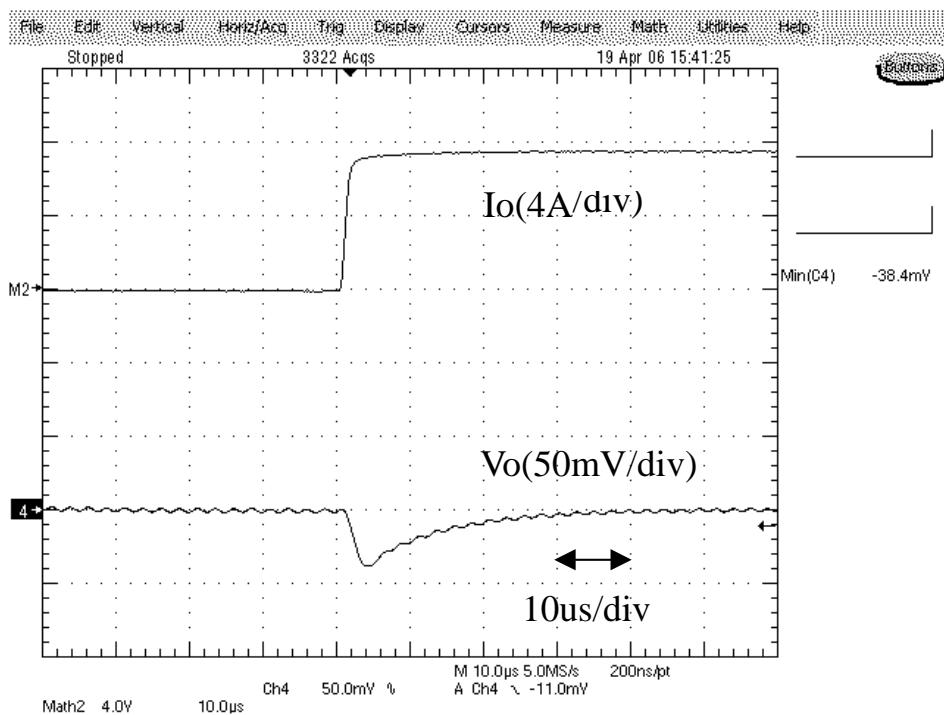


### ⚠ Note:

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.

## ■ THERMAL DERATING

$V_{in}=12V$ ,  $V_o=1.8V$ ,  $I_o=8A$  to  $16A$ ,  $di/dt=2A/\mu s$ ,  $C_{out}=100\mu F$



### ⚠ 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.