

# DC-DC Converter Short Form

## MPDRX307S,MPDRX308S (Ultra High Speed Response POL)

### ■ Features

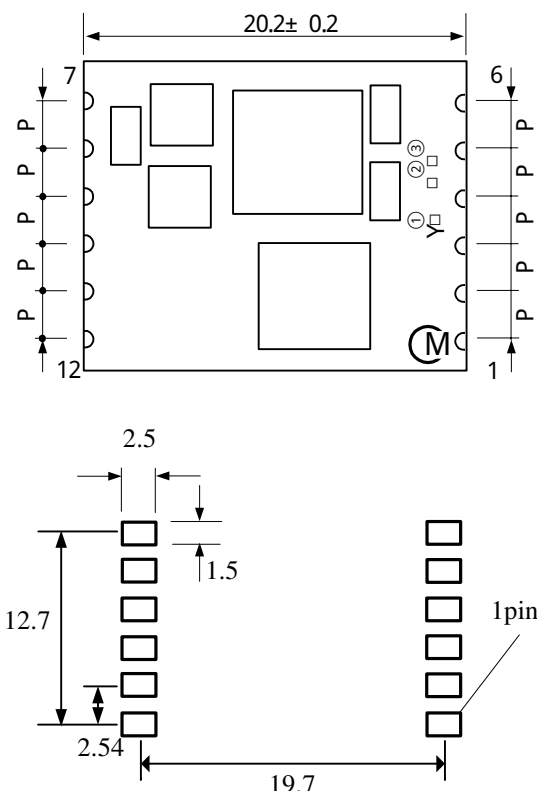
- Ultra High Speed Response
- Wide Input range (6.2V to 13.2V),
- Wide output range ( 0.8V to 1.65V / 1.6 to 3.63V )
- 6.5A Output Current
- Wide operational temperature ( -40°C to +85°C )
- ON/OFF / Output voltage sense / Over Current function / 2 P-good function / Variable Start-up Speed function (by external capacitor)



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

Item	Symbol	Condition	MIN.	TYP.	MAX.	UNIT
Input Voltage	Vin		6.2	-	13.2	V
Output Voltage Adjustable Range	Vout	MPDRX308S	0.8	-	1.65	V
		MPDRX307S	1.6	-	3.63	
Output Current	Iout		0	-	6.5	A
Ripple Voltage	Vrpl	Vin=9V, Vout=1.2V, Iout=5A	-	10	-	mVpp
		Vin=9V, Vout=3.3V, Iout=5A	-	10	-	
Efficiency	EFF	Vin=9V, Vout=1.2V, Iout=5A	-	82	-	%
		Vin=9V, Vout=3.3V, Iout=5A	-	91	-	

### ■ DIMENSIONS



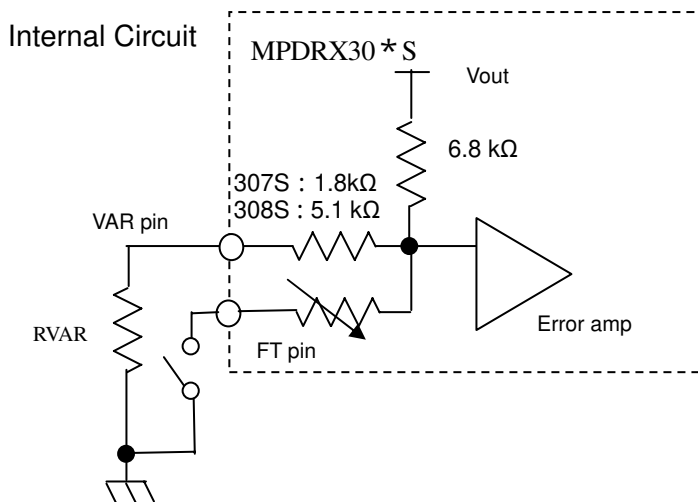
Pin No.	Symbol	Function
1	VAR	Vout Adjustment
2	FT	Output Trim
3,4	GND	GND
5	Vout	Output Voltage
6	SENSE	Output Voltage Sense
7	Vin	Input Voltage
8	GND	GND
9	ON/OFF	Remote ON/OFF
10	SS	Soft Start
11	POW-GOOD1	Power Good
12	POW-GOOD2	Power Good

( )...reference value  
 P=2.54 ± 0.2mm  
 Tolerance is not accumulated

### ⚠ 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



①MPDRX307S (FT-pin : SHORT to GND)

$$RVAR = \frac{5440}{Voadj[V] \times 1.002 - 1.5[V]} - 1800 \quad [\Omega]$$

②MPDRX308S

(a)  $0.8 \leq Vout < 0.95V$  (FT-pin : OPEN)

$$RVAR = \frac{5440}{Voadj[V] \times 1.002 - 0.8[V]} - 5100 \quad [\Omega]$$

(b)  $0.95 \leq Vout \leq 1.65V$  (FT-pin : SHORT to GND)

$$RVAR = \frac{5440}{Voadj[V] \times 1.002 - 0.95[V]} - 5100 \quad [\Omega]$$

<RVAR CALCULATION EXAMPLE>

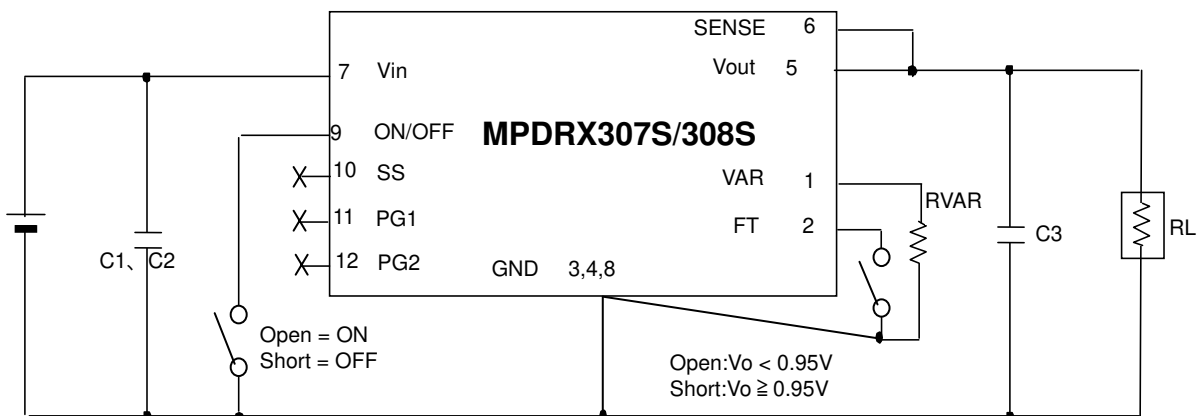
### MPDRX307S

Voadj [V]	Calculated RVAR[Ω]	FT pin (8pin)
3.63	745	Short to GND
3.3	1211	Short to GND
2.5	3613	Short to GND
1.8	16118	Short to GND
1.6	50913	Short to GND

### MPDRX308S

Voadj [V]	Calculated RVAR[Ω]	FT pin (8pin)
1.65	2635	Short to GND
1.5	4737	Short to GND
1.2	16453	Short to GND
1.0	99515	Short to GND
0.95	2858058	Short to GND
0.9	48338	Open
0.8	3394900	Open

## ■ TEST CIRCUIT



C1,C2 : 10 $\mu$ F / 25V Ceramic Capacitor

C3 : 100 $\mu$ F / 6.3V Ceramic Capacitor

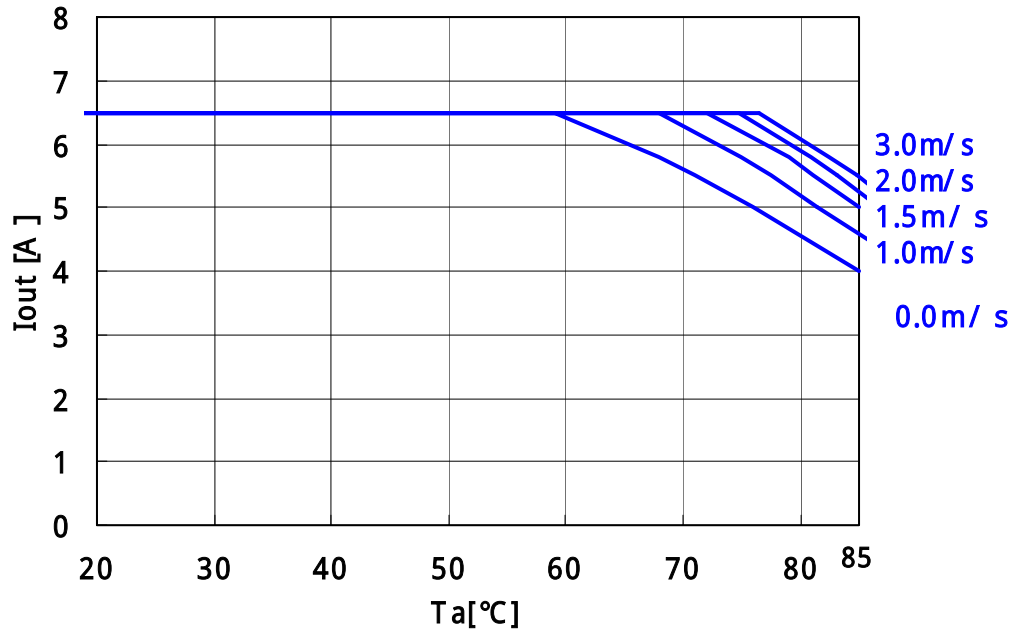
Please make sure to place C1 ,C2 and C3 nearby input and output terminal of DC-DC converter.

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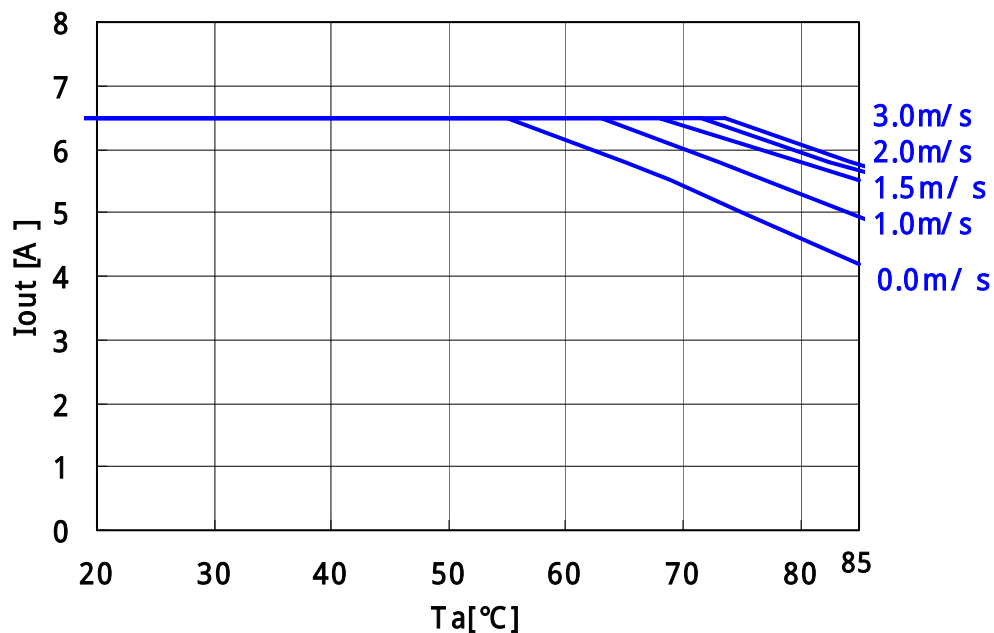
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## ■ THERMAL DERATING

MPDRX307S  
( $V_{in}=6.2 \sim 12V$ 、 $V_{out}=1.6 \sim 3.63V$ )



MPDRX308S  
( $V_{in}=6.2 \sim 12V$ 、 $V_{out}=0.8 \sim 1.65V$ )



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