

DC-DC Converter Short Form

MPDRX303S,MPDRX304S (Ultra High Speed Response POL)

Features

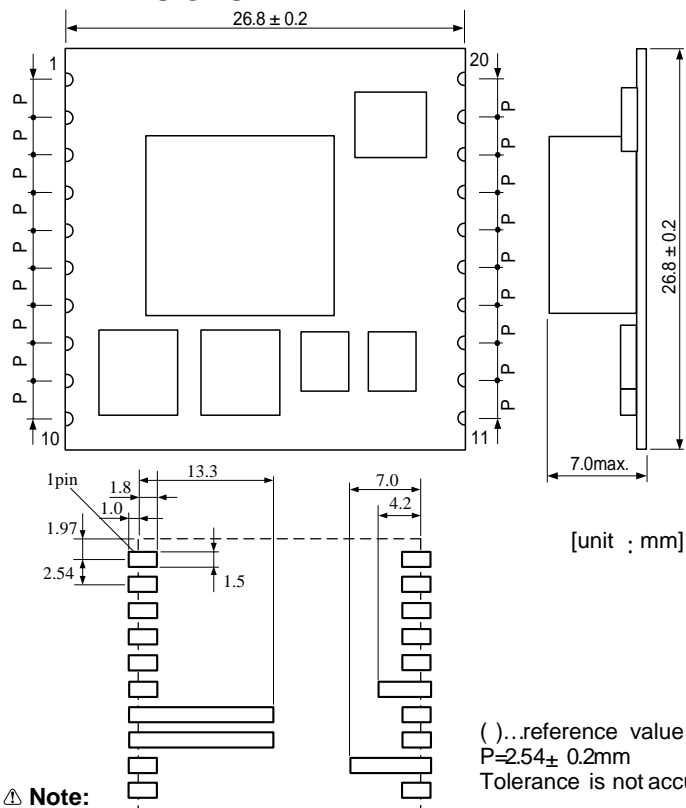
- Ultra High Speed Response
- Wide Input range (6.2V to 13.2V),
- Wide output range (0.8V to 1.65V / 1.6 to 3.63V)
- 26A Output Current
- Wide operational temperature (-40°C to +85°C)
- ON/OFF / Output voltage sense / Over Current function / 2 P-good function / Variable Start-up Speed function (by external capacitor)



GENERAL SPECIFICATIONS (Ta=25°C)

Item	Symbol	Condition	MIN.	TYP.	MAX.	UNIT
Input Voltage	Vin		6.2	9.6	13.2	V
Output Voltage Adjustable Range	Vout	MPDRX304S	0.8	-	1.65	V
		MPDRX303S	1.6	-	3.63	
Output Current	Iout		0	-	13	A
Ripple Voltage	Vrpl	Vin=9.6V, Vout=1.2V, Iout=26A	-	15	-	mVpp
		Vin=9.6V, Vout=3.3V, Iout=26A		20		
Efficiency	EFF	Vin=9.6V, Vout=1.2V, Iout=26A	-	84	-	%
		Vin=9.6V, Vout=3.3V, Iout=26A	-	90	-	

DIMENSIONS



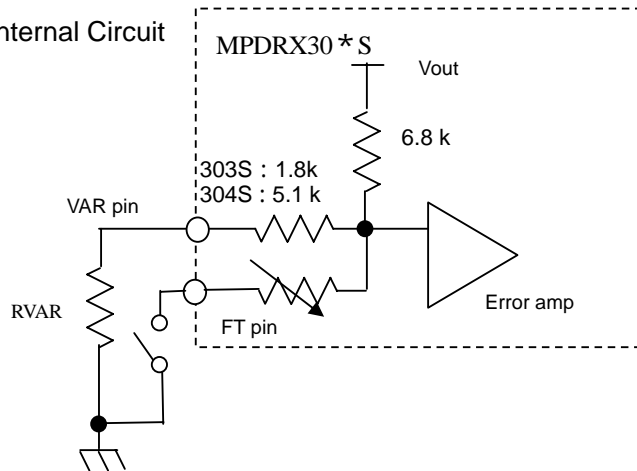
Pin No.	Symbol	Function
1	SENSE	Output voltage sense
2,3,4	Vout	Output
5,6,7, 8,13, 14,15	GND	GND
9	FT	Output trim
10	VAR	Output voltage adjustment
11,12	Vin	Input
17	SS	Soft start
18	N.C.	This pin must be left open.
19	POW-GOOD1	Power Good
20	POW-GOOD2	Power Good
16	ON/OFF	Remote ON/OFF

△ Note:

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OUTPUT VOLTAGE ADJUSTMENT

Internal Circuit



MPDRX303S (FT-pin : SHORT to GND)

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

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(a) 0.8 $V_{out} < 0.95V$ (FT-pin : OPEN)

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

(b) 0.95 $V_{out} = 1.65V$ (FT-pin : SHORT to GND)

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

<RVAR CALCULATION EXAMPLE>

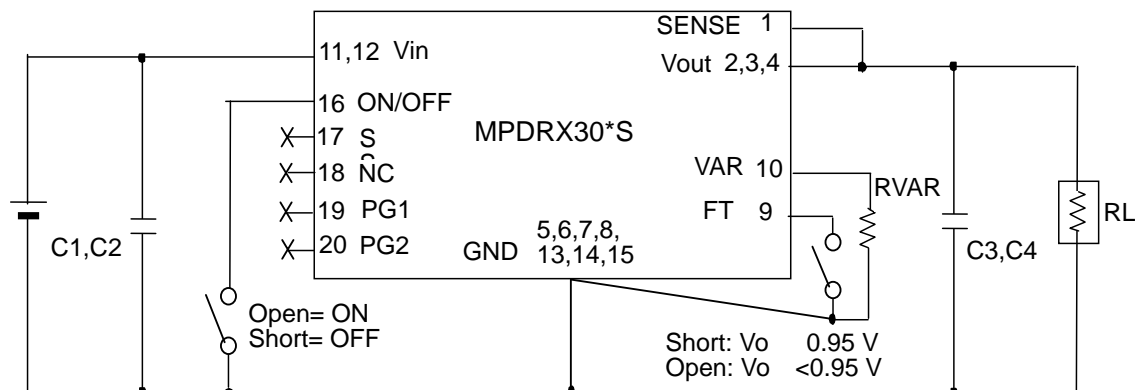
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Voadj [V]	Calculated RVAR[]	FT pin (8pin)
3.63	745	Short to GND
3.3	1211	Short to GND
2.5	3613	Short to GND
1.8	16118	Short to GND
1.6	50913	Short to GND

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Voadj [V]	Calculated RVAR[]	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 : 22 μ F / 25V \times 2 (Ceramic Capacitor)C3,C4 : 100 μ F / 6.3V \times 2 (Ceramic Capacitor)

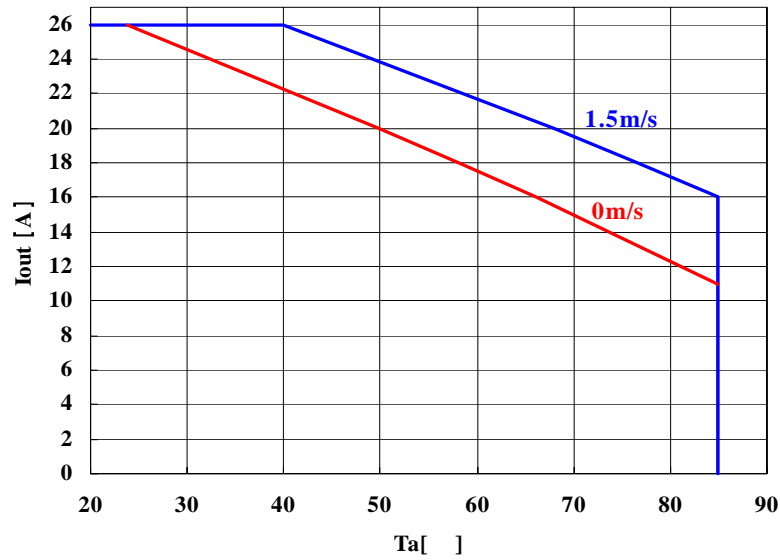
Please make sure to place C1, C2,C3 and C4 nearby input and output terminal of DC-DC converter.

⚠ Note:

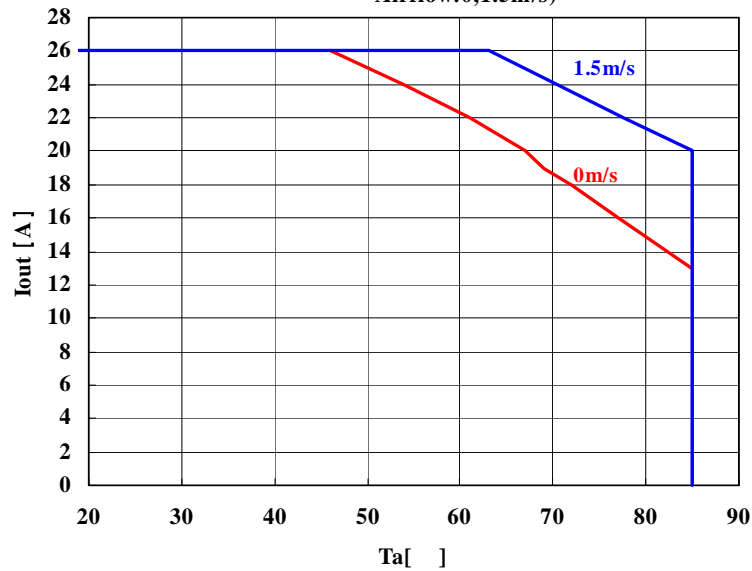
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THERMAL DERATING

MPDRX303S
 (Vin=6.2 ~ 12V, Vout=1.6 ~ 3.63V,
 Airflow: 0,1.5m/s)



MPDRX304S
 (Vin=6.2 ~ 12V, Vout=0.8 ~ 1.65V
 Airflow:0,1.5m/s)

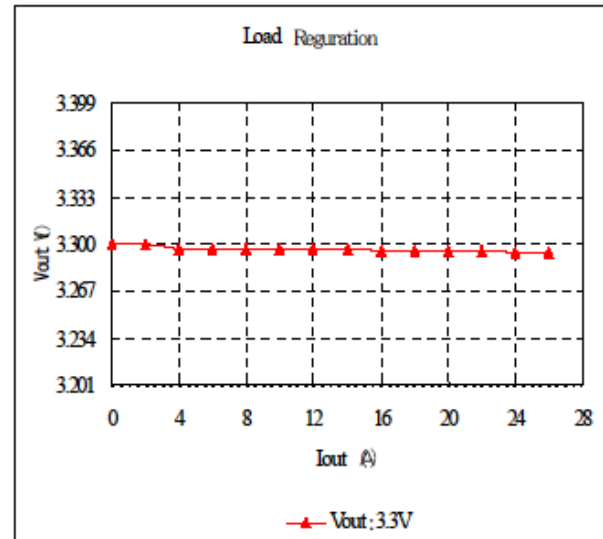
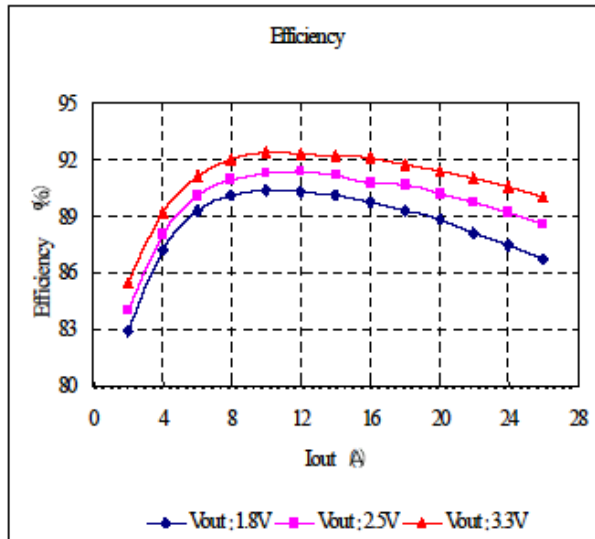


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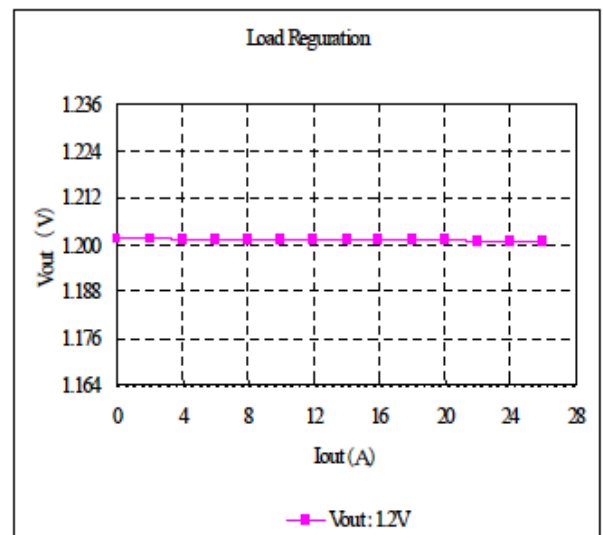
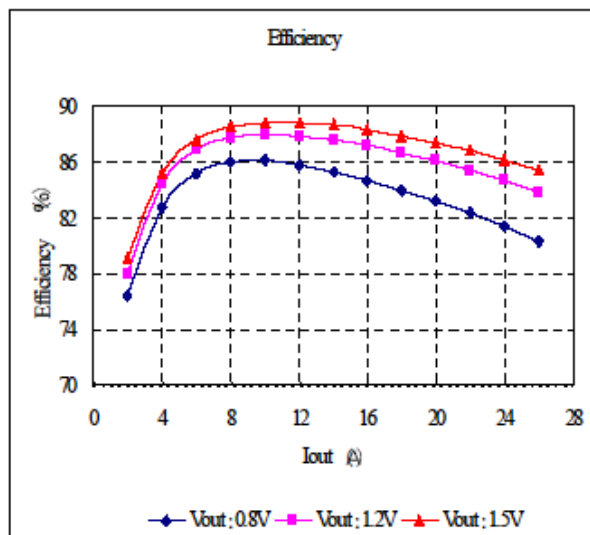
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EFFICIENCY & REGULATION CHARACTERISTICS

MPDRX303S



MPDRX304S



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