

DC-DC Converter Short Form

MPDRX312S (Ultra High Speed Response POL)

■ FEATURES

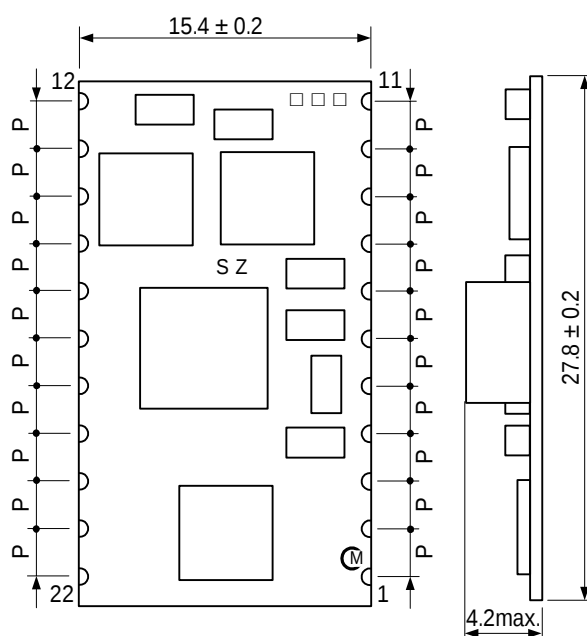
- Ultra High Speed Response
- Wide input range (3.0V to 5.5V), Output range (0.8V to 1.8V)
- 16A Output Current
- Wide operational temperature (-40°C to +85°C)
- ON/OFF / Output voltage sense / Over current function / P-good function / Variable Start-up Speed function (by external capacitor)



■ GENERAL SPECIFICATIONS (Ta=25°C)

Item	Symbol	Condition		MIN.	TYP.	MAX.	UNIT
Input Voltage	Vin			3.0	-	5.5	V
Output Voltage Adjustable Range	Vout	F.T. pin = open		0.8	-	0.9	V
		F.T. pin = short to GND		0.9	-	1.8	
Output Voltage tolerance	Vo tol	Over Io, Temperature range Vin=3.0~5.5V	Vo=0.8 ~ 0.9V	-3.0	-	+3.0	%
			Vo=0.9 ~ 1.8V	-2.5	-	+2.5	
Output Current	Iout			0	-	16	A
Ripple Voltage	Vrpl	Vin=3.3V, BW=20MHz, Cout=100μF		-	20	-	mVpp
Efficiency	EFF	Vin=3.3V, Vout=1.8V, Iout=16A		-	86.5	-	%

■ DIMENSIONS



[unit : mm]

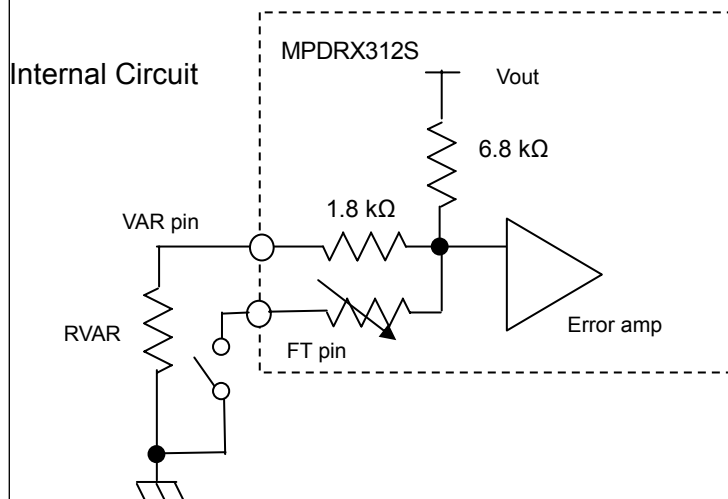
()...reference value
P=2.54± 0.2mm
Tolerance is not accumulated

Pin No.	Symbol	Function
2	SENSE	Output voltage sense
3,4,5	Vout	Output
6,7,8,9,16,17,18	GND	GND
10	FT	Output trim
11	VAR	Output voltage adjustment
12,13,14,15	Vin	Input
1	OVPOUT	Output Over-voltage Alarm
19	SS	Soft start
20	N.C.	Non connection
21	PWRGOOD	Power Good
22	ON/OFF	Remote ON/OFF

⚠ Note:

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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



(a) 0.8V $V_{out} < 0.9V$ (F.T. : open)

$$RVAR = \frac{5440}{V_{oadj}[V] - 0.8[V]} - 1800 [Ω]$$

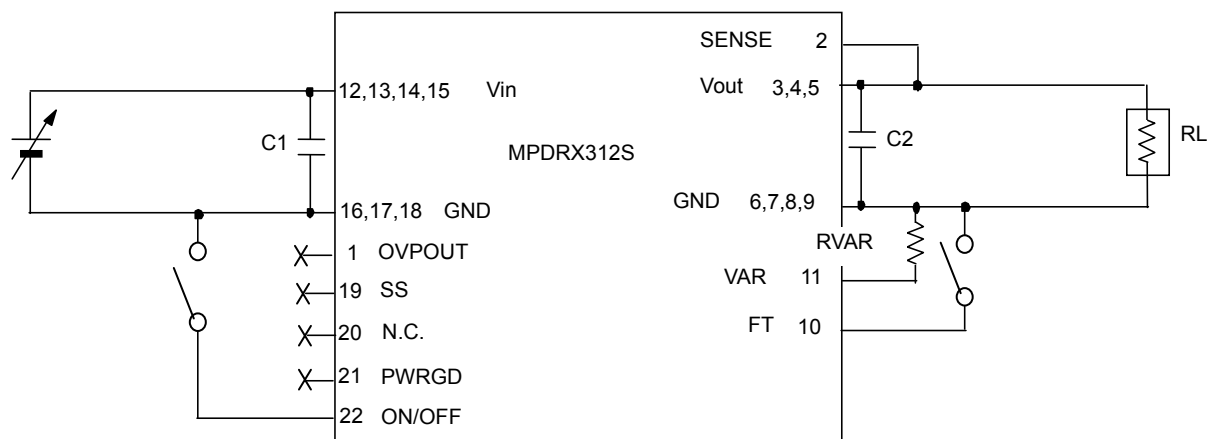
(b) 0.9 $V_{out} = 1.8V$ (FT-pin : SHORT to GND)

$$RVAR = \frac{5440}{V_{oadj}[V] - 0.9[V]} - 1800 [Ω]$$

<RVAR CALCULATION EXAMPLE>

Voadj [V]	Calculated RVAR [Ω]	RVAR Example [Ω]	F.T. pin
1.8	4240	3.9k+330	Short to GND
1.5	7270	6.8k+470	Short to GND
1.2	16330	16k+330	Short to GND
1.0	52600	47k+5.6k	Short to GND
0.9	∞	Open	Short to GND
0.8	∞	Open	Open

■ TEST CIRCUIT



C1 : 100μF / 10V Ceramic Capacitor

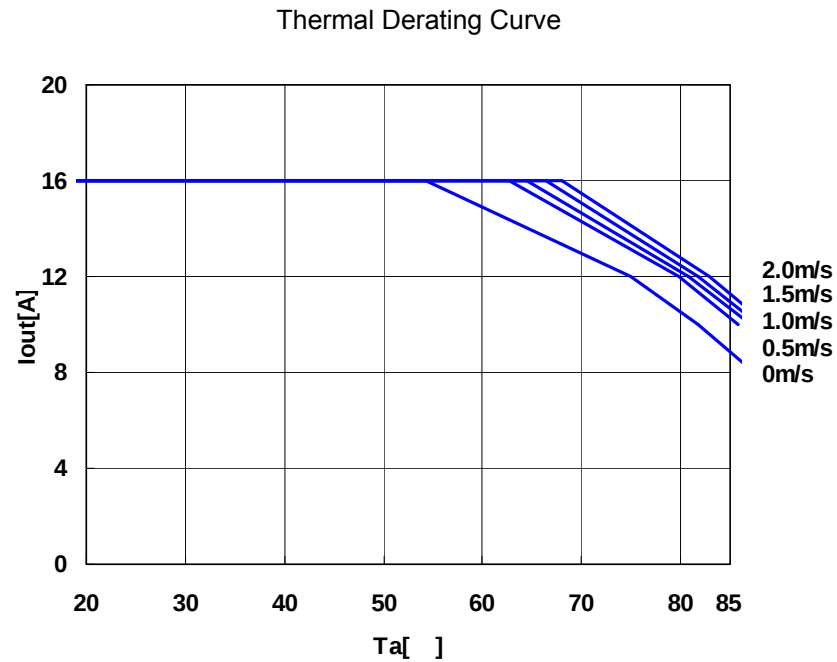
C2 : 100μF / 6.3V Ceramic Capacitor

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

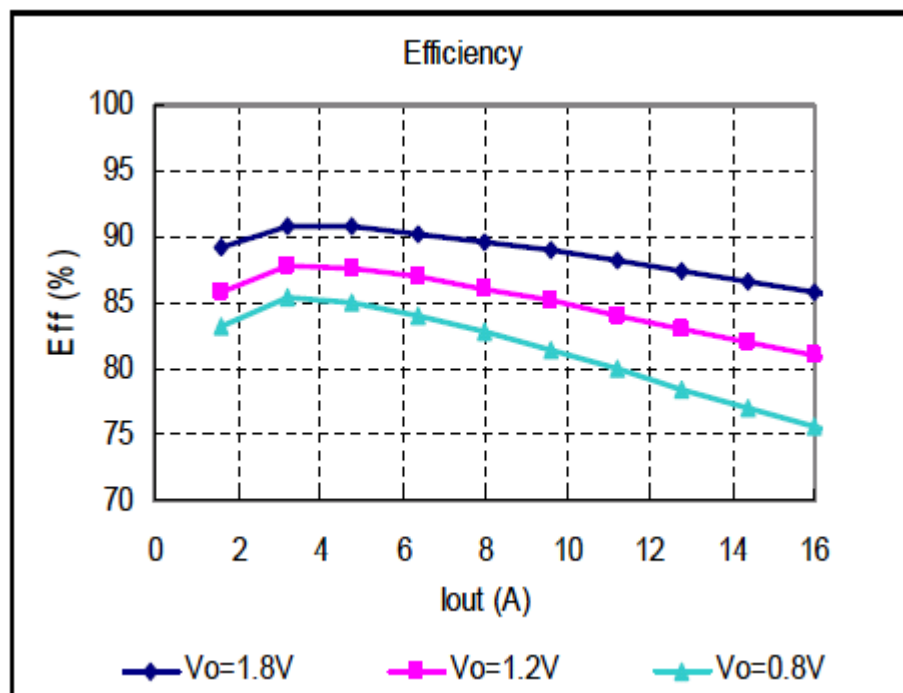
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■ THERMAL DERATING



■ EFFICIENCY



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