

# DC-DC Converter Short Form

## MPDRX021S (Ultra High Speed Response POL)

### Features

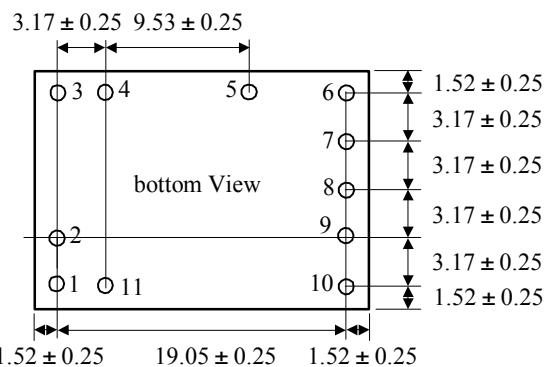
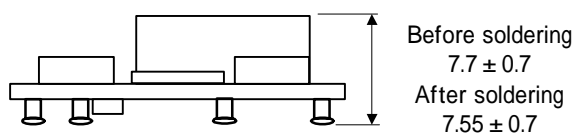
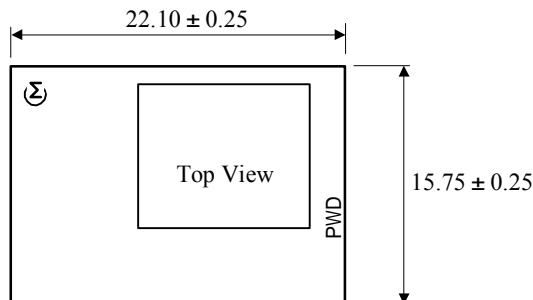
- Ultra High Speed Response
- Input range (4.5V to 5.5V), Wide output range ( 0.85V to 1.8V )
- 10A Output Current
- Wide operational temperature ( -40°C to +85°C )
- ON/OFF / Tracking / Output voltage sense / Over current function / Over temperature function



### GENERAL SPECIFICATIONS (Ta=25°C)

Item	Symbol	Condition	MIN.	TYP.	MAX.	UNIT
Input Voltage	Vin		4.5	5.0	5.5	V
Output Voltage Adjustable Range	Vout		0.85		1.8	V
Output Voltage tolerance	Vo tol	Over Io, Temperature range Vin=4.5~5.5V	Vo=0.85 ~ 1.2V	-1.5	+1.5	%
			Vo=1.2 ~ 1.8V	-2.0	+2.0	
Output Current	Iout		0	-	10	A
Ripple Voltage	Vrpl	Vin=5V, Vout=1.2V, Iout=10A, BW=20MHz	-	10	-	mVpp
Efficiency	EFF	Vin=5V, Vout=1.2V, Iout=10A	-	87	-	%

### DIMENSIONS



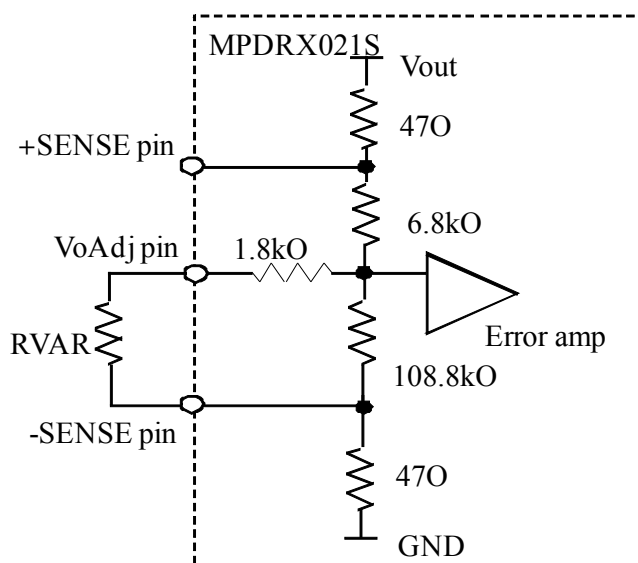
Pin No.	Symbol	Function
2	Vin	Input voltage
3,4	GND	GND
5	Vout	Output Voltage
6	+SENSE	Output voltage +sense
7	-SENSE	Output voltage -sense
8	Vout Adjust	Output Voltage Adjustment
10	Track	Tracking Function
11	ON/OFF	Remote ON/OFF Control

Tolerance is not accumulated  
[unit : mm]

#### △ Note:

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## OUTPUT VOLTAGE ADJUSTMENT

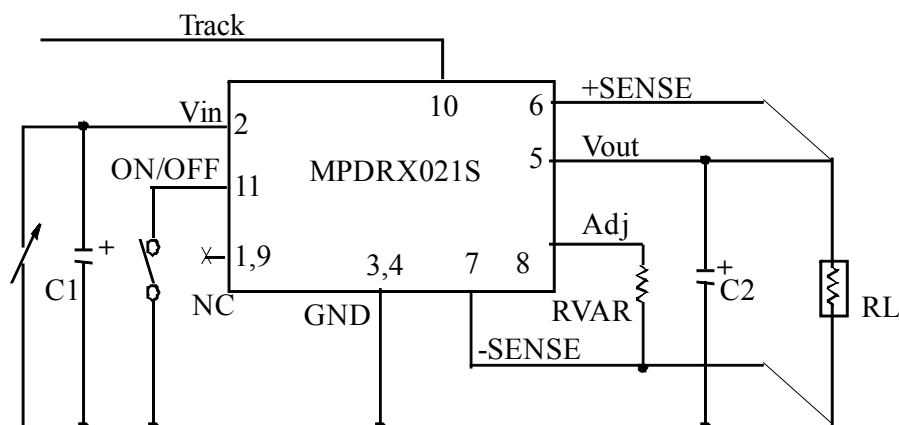


$$RVAR = \frac{5440}{V_{out}[V] - 0.85[V]} - 1800[\text{ohm}]$$

## &lt;RVAR CALCULATION EXAMPLE&gt;

Vout(V)	Calculated RVAR(Ω)	RVAR Example(Ω)
1.8	3926	3.9k + 27
1.5	6569	6.3k + 270
1.2	13743	13k + 750
1.0	34467	33k + 1.5k
0.7	∞	Open

## TEST CIRCUIT



- C1 : 300 $\mu$ F / 8V Low ESR tantalum Capacitor  
ex.) Panasonic: EEFUE01J151R(150 $\mu$ F/8V)  $\times$ 2
- C2 : 1000 $\mu$ F / 4V Low ESR tantalum Capacitor  
ex.) Kemet: T530X108M4AE6(1000 $\mu$ F/4V)

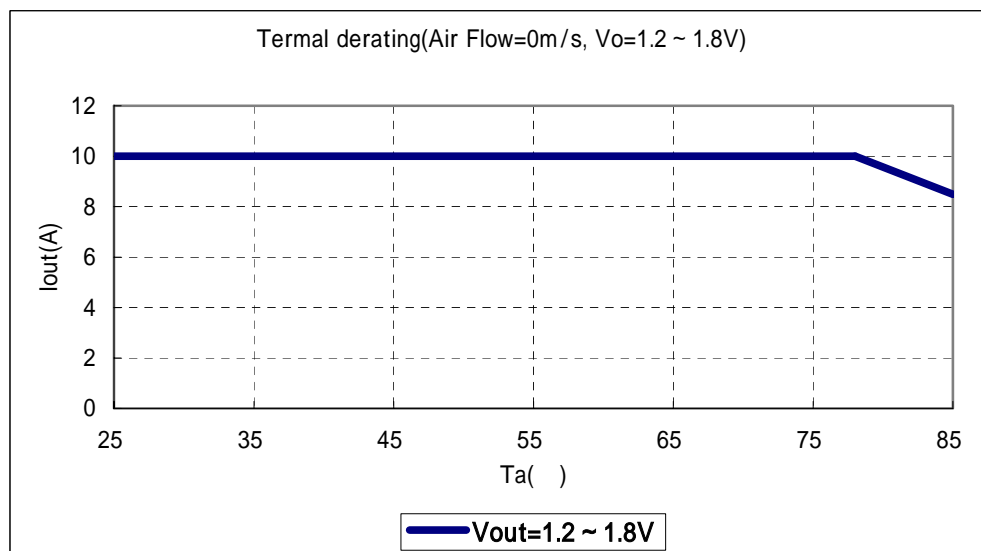
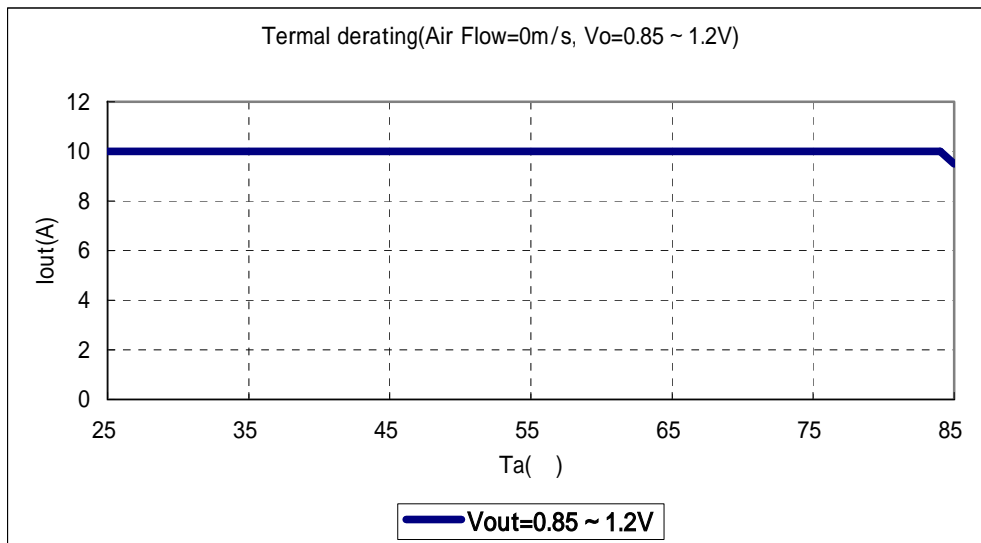
Please make sure to place C1 and C2 nearby input and output terminal of DC-DC converter.

## ⚠ Note:

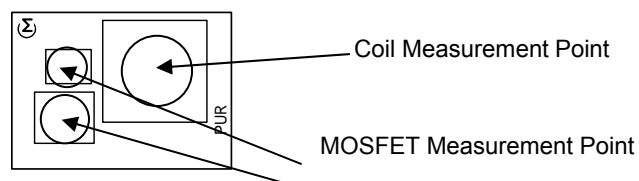
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## THERMAL DERATING

Vin=4.5~5.5V



The above derating limits apply to this product soldered directly to 101.6\*180mm\*1.6mm PCB. Any adjacent parts of high temperature may cause overheating. For reliable operation, please ensure that the FET temperature of this product is maintained below 120°C and the inductor temperature is below 106°C.

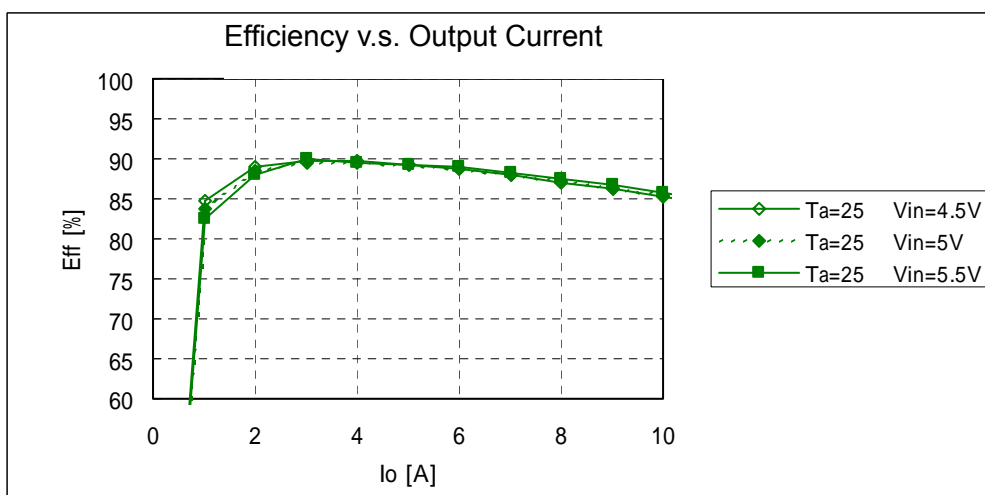
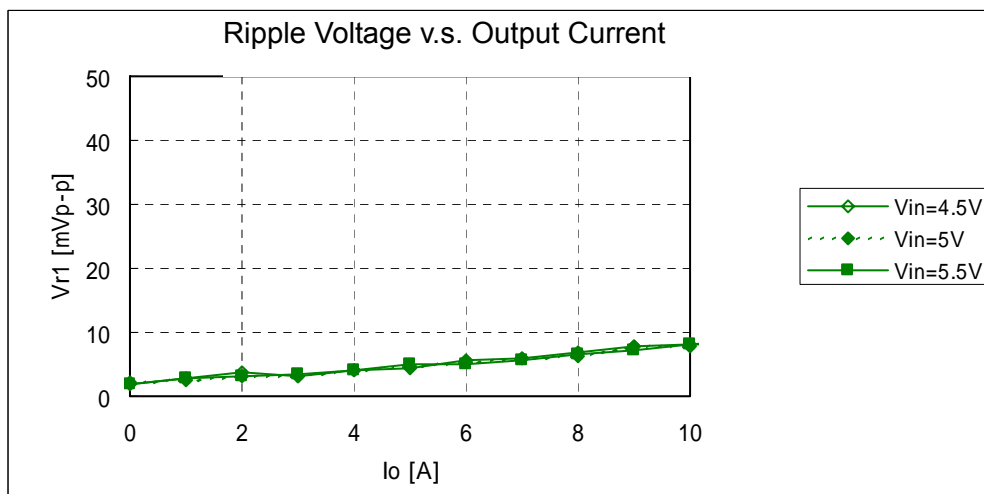
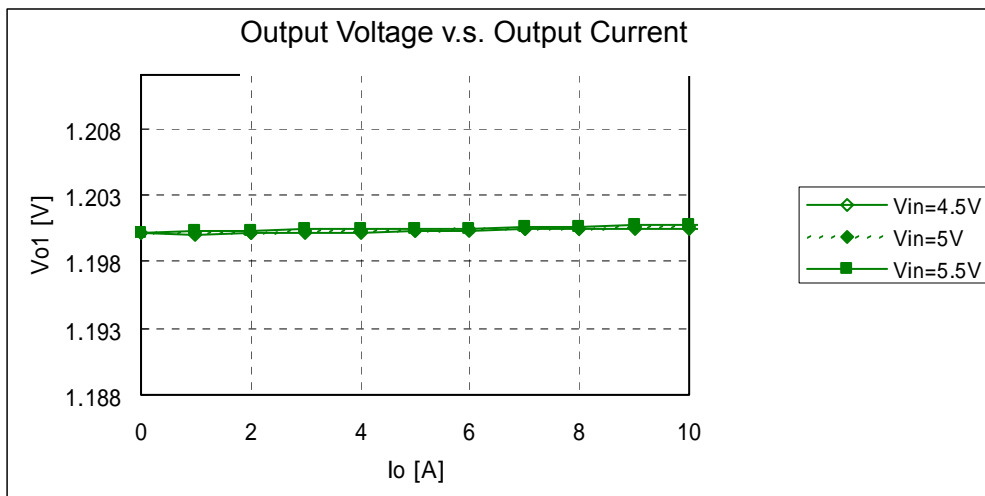


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## GENERAL CHARACTERISTICS (Ta=25°C)

Vou=1.1V



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