
Material name : Evaluation data

Customer's product name :

TDK product name : DC-DC converter
CC3-0512SS-E (SIP model)

TDK-Lambda

TDK Corporation
Power Systems Business Group

DWG.No.	TRSC-1577-1
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Issued 2006/12/01

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* The measurement has been done without external output capacitor.
(Except the output ripple noise measurement.)

(Product specification)

Product name	Input voltage(V)	Output voltage(V)	Output current(mA)	The maximum output power(W)	Ambient temperature(°C)
CC3-0512SS-E	4.5~9	12 ±3%	0~250	3	-40 ~ +85 *2
		15 ±3% *1	0~200		

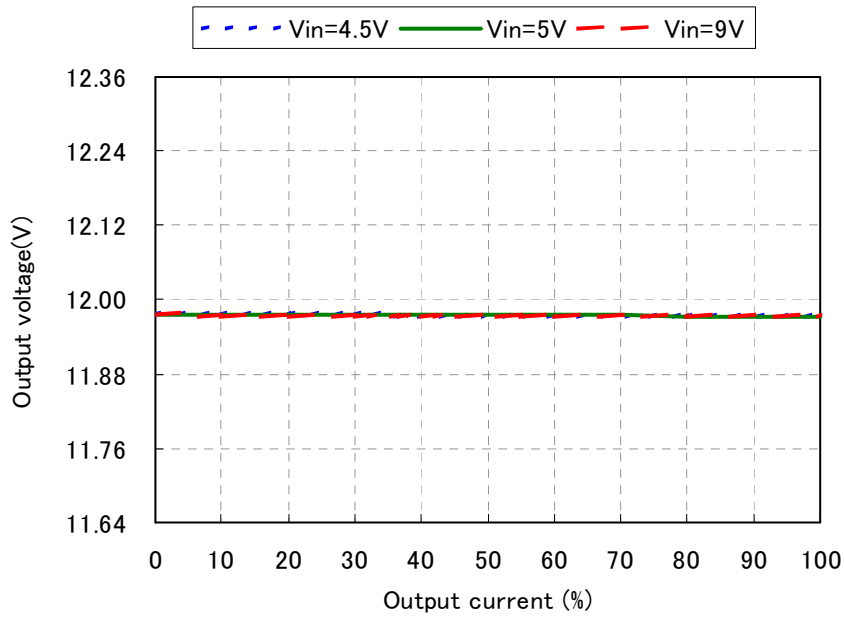
*1 TRM and -Vout are short-circuited.

*2 At 50°C or more, output power derating is necessary.

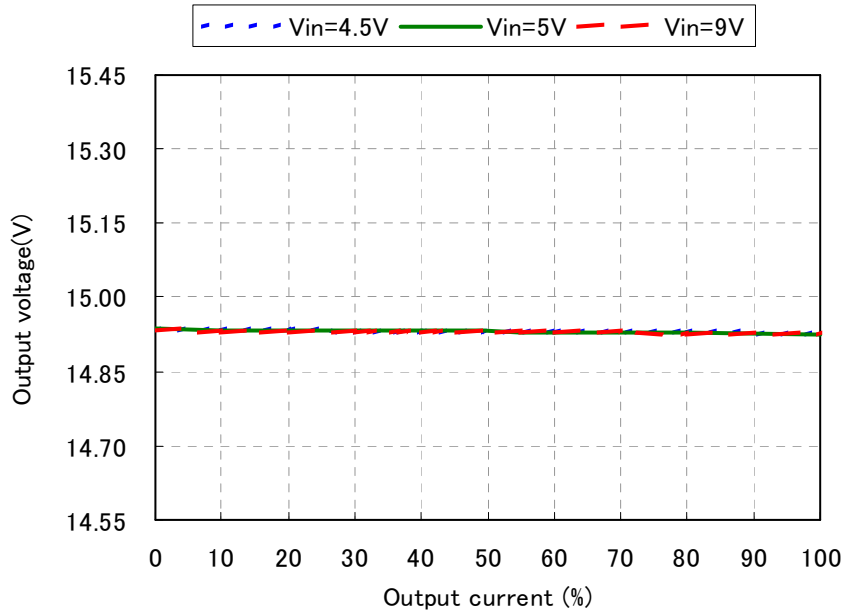
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DC-DC converter CC3-0512SS-E			
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1. Load regulation

Condition Ta : -40°C

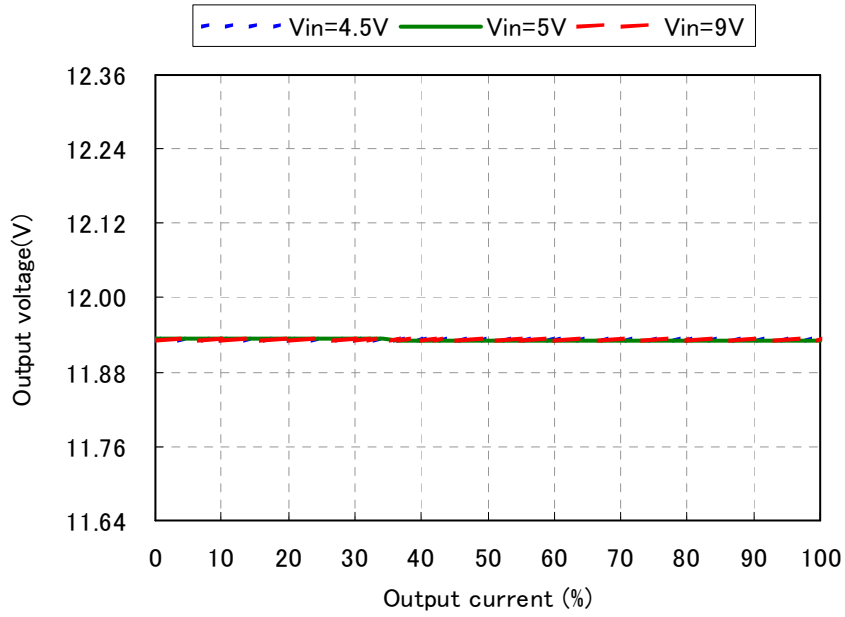


Condition Ta : -40°C
TRM: Short-circuited to -Vout.

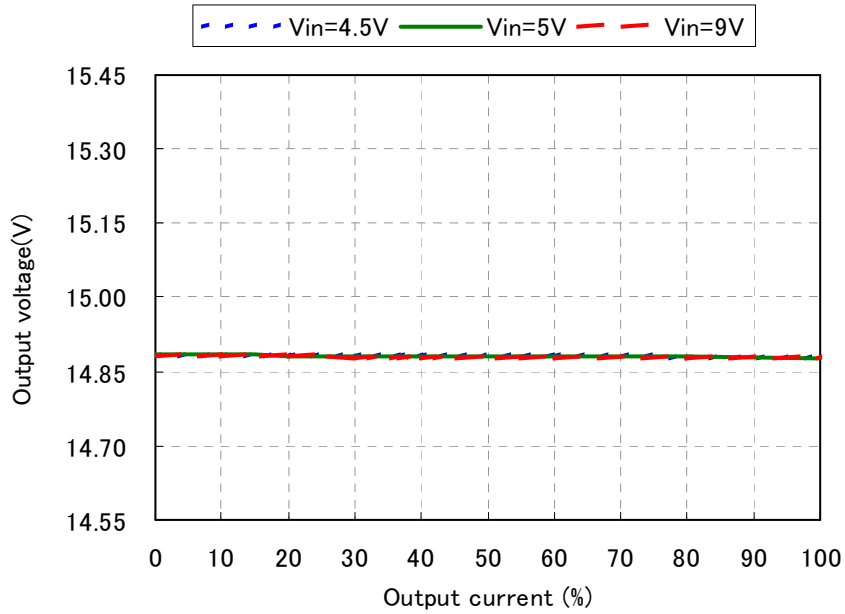


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Condition Ta : 25°C

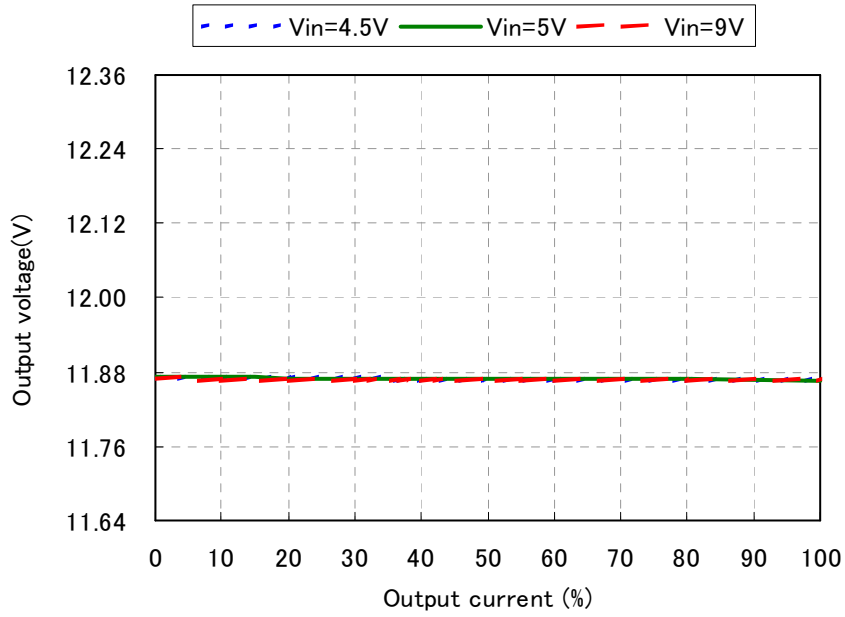


Condition Ta : 25°C
TRM: Short-circuited to -Vout.

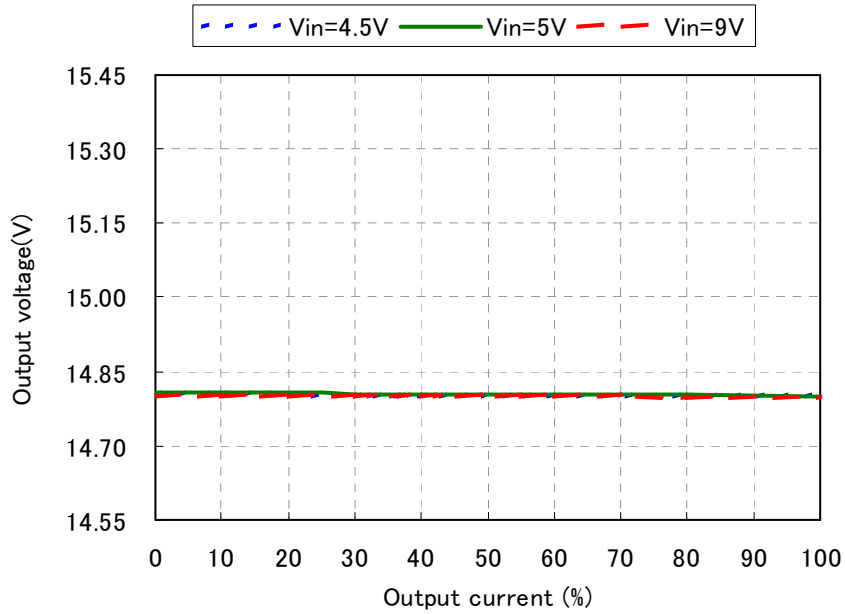


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Condition Ta : 85°C



Condition Ta : 85°C
TRM: Short-circuited to -Vout.

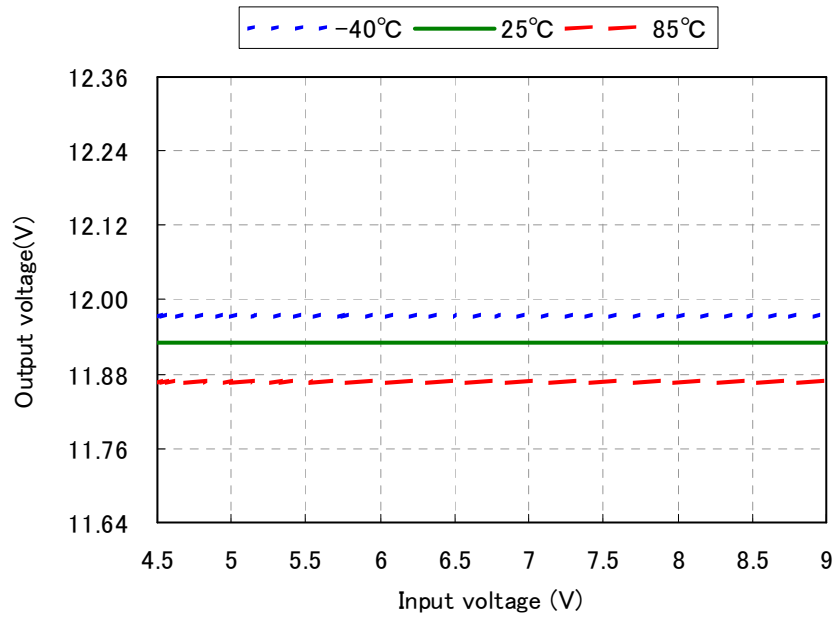


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2. Line regulation

Condition

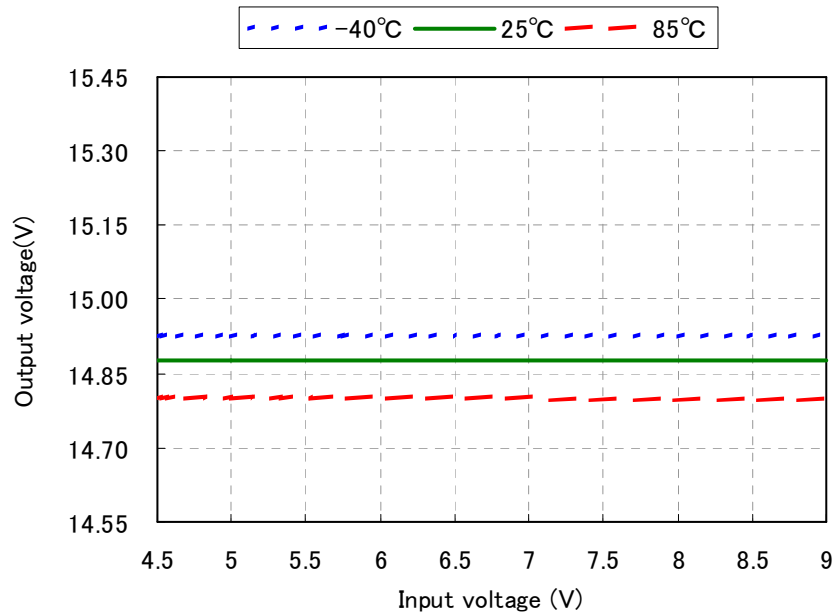
I_{out} : 100%



Condition

I_{out} : 100%

TRM: Short-circuited to -V_{out}.



Product name or model, title

DC-DC converter CC3-0512SS-E

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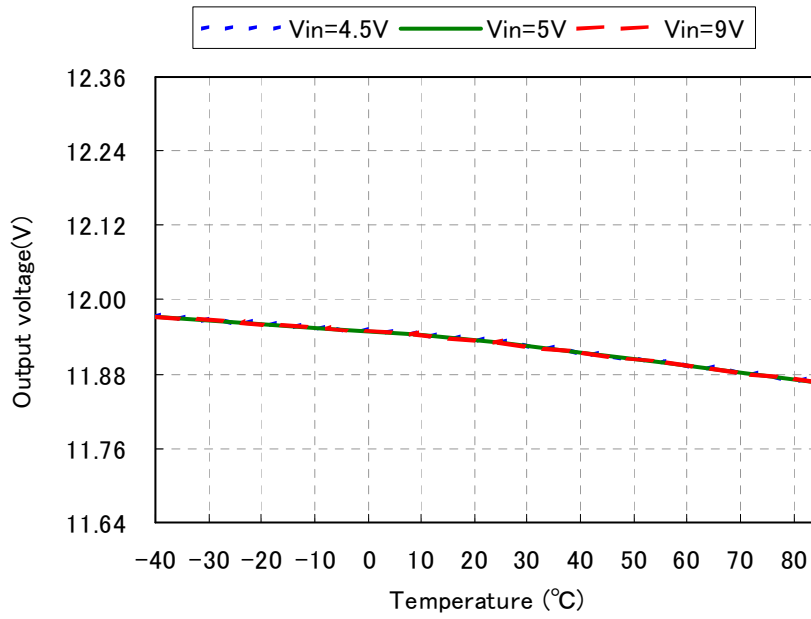
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3. Temperature regulation

Condition

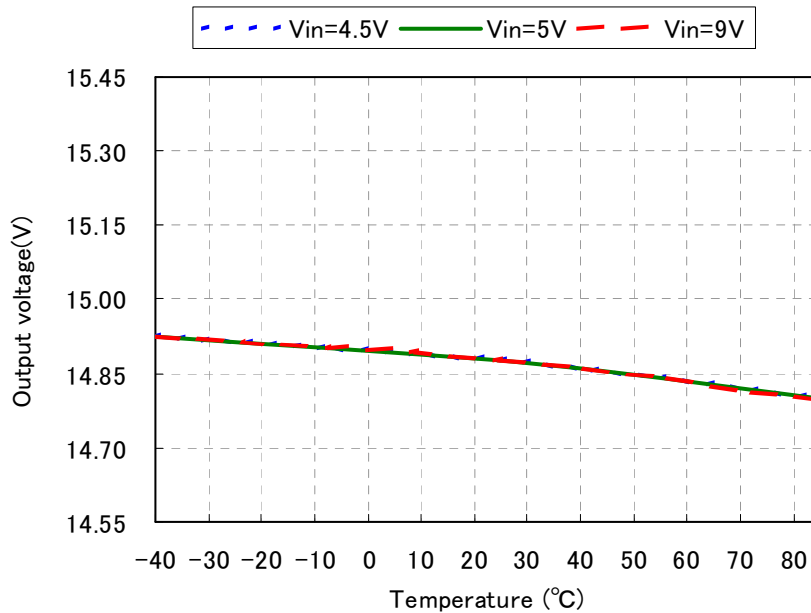
Iout : 100%



Condition

Iout : 100%

TRM: Short-circuited to -Vout.



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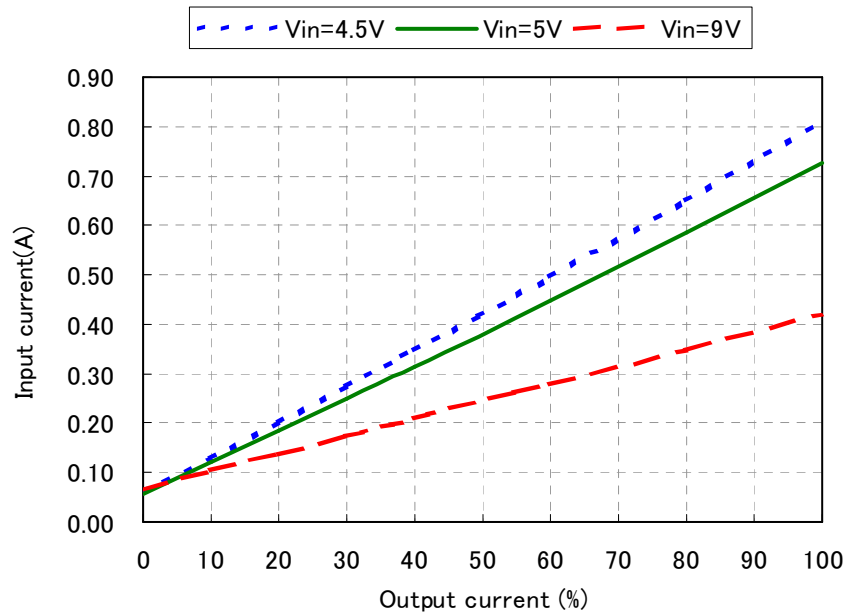
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4. Input current(vs. load current)

Condition

Ta : 25°C

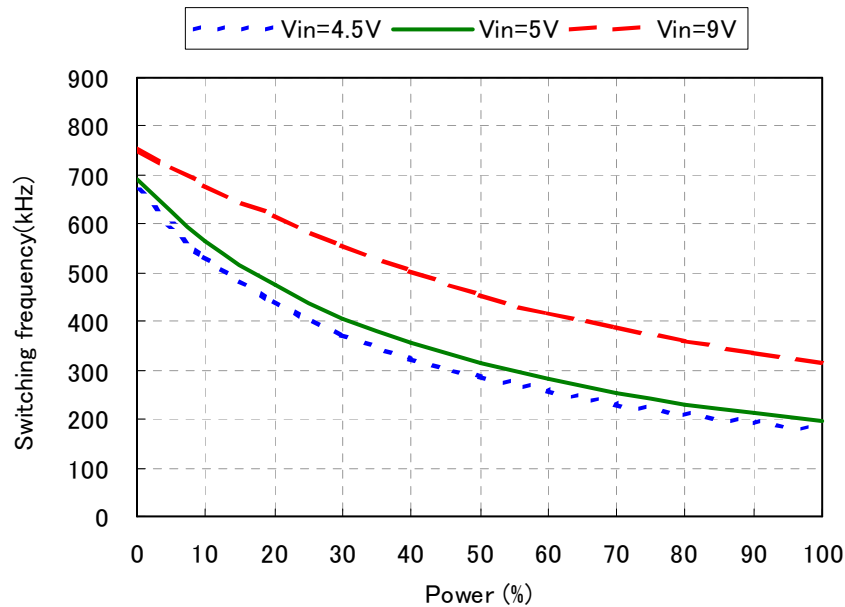
Vout : 12V



5. Switching frequency(vs. output power)

Condition

Ta : 25°C



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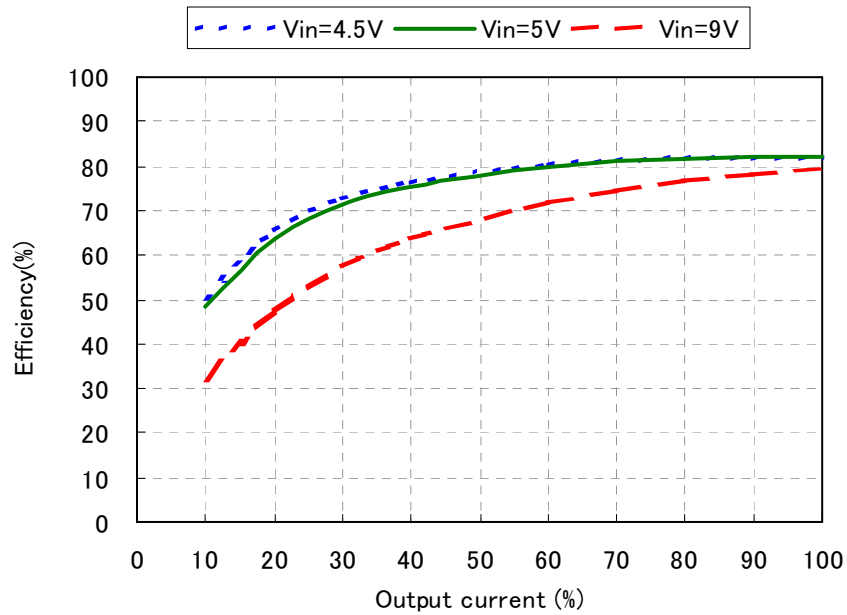
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6. Efficiency(vs. load current)

Condition

Ta : 25°C

Vout : 12V

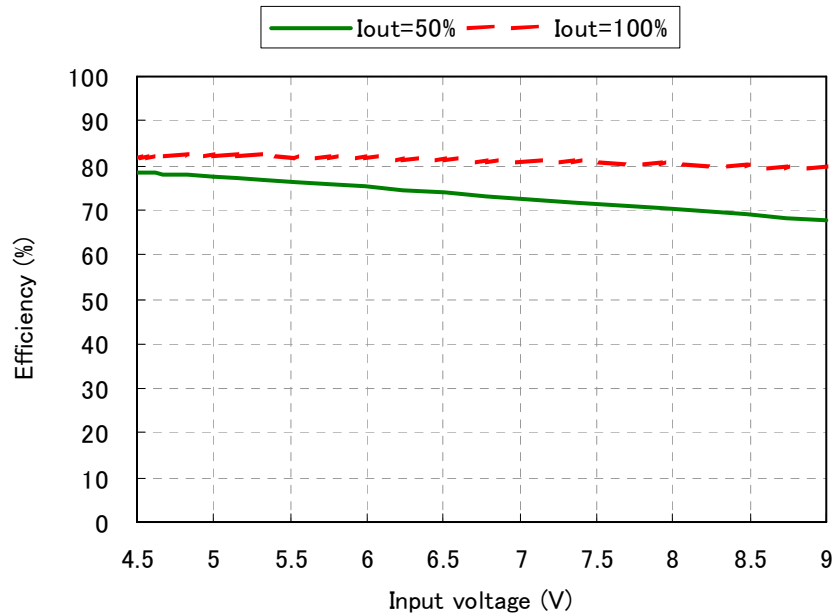


7. Efficiency(vs. input voltage)

Condition

Ta : 25°C

Vout : 12V



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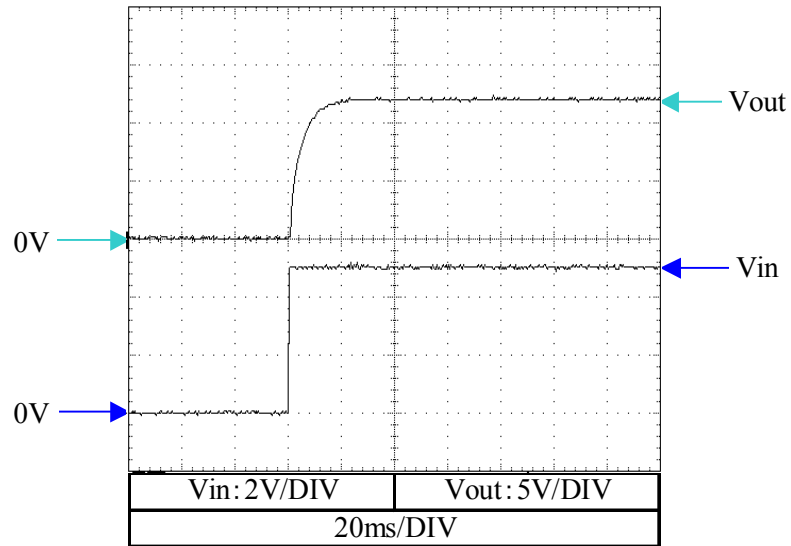
8. Output rise characteristics

Condition

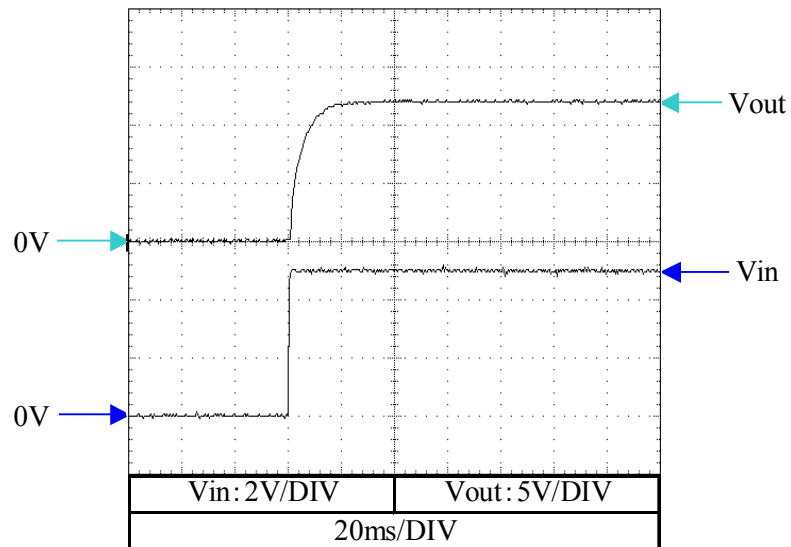
Vin : 5V

Ta : 25°C

Iout : 0%



Iout : 100%



Product name or model, title

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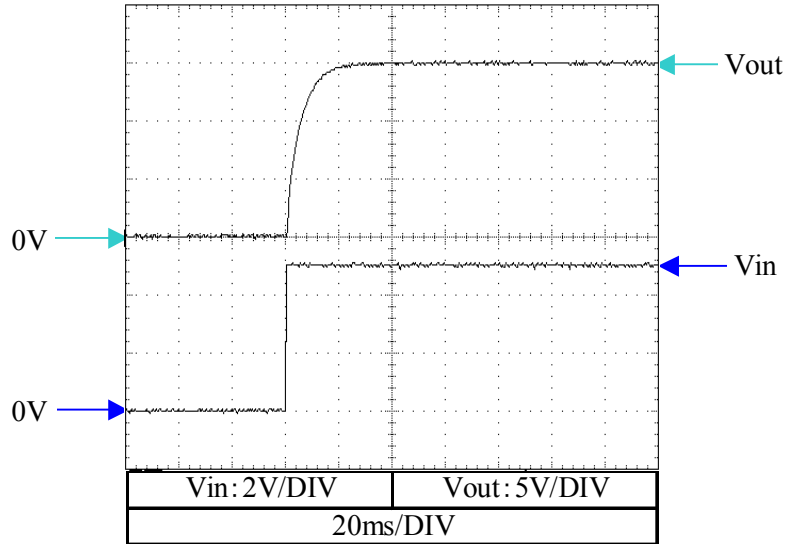
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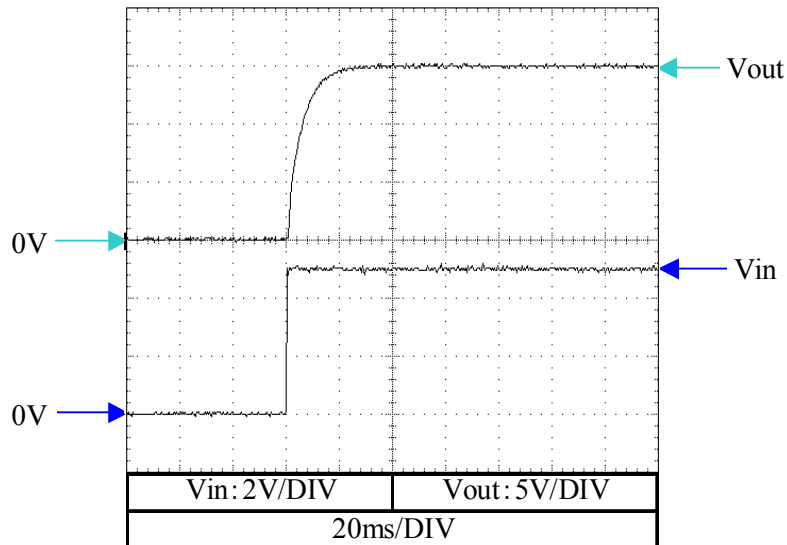
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Condition Vin : 5V
 Ta : 25°C
 TRM: Short-circuited to -Vout.

Iout : 0%



Iout : 100%



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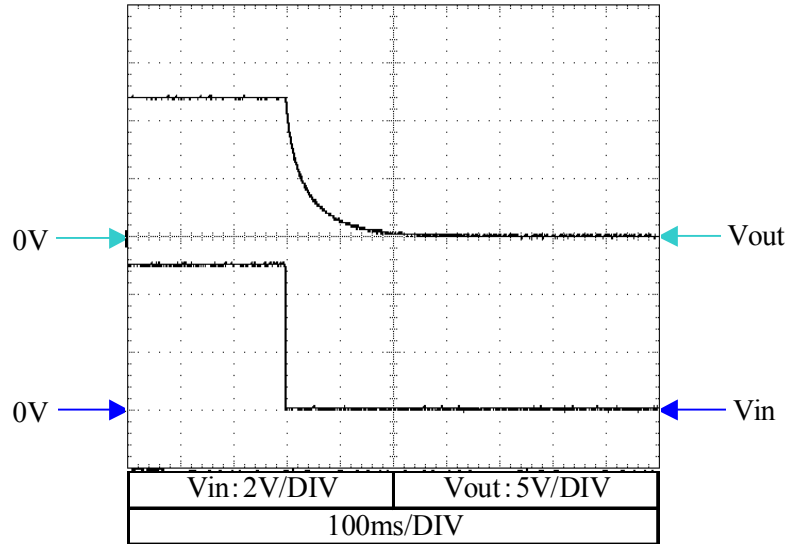
9. Output fall characteristics

Condition

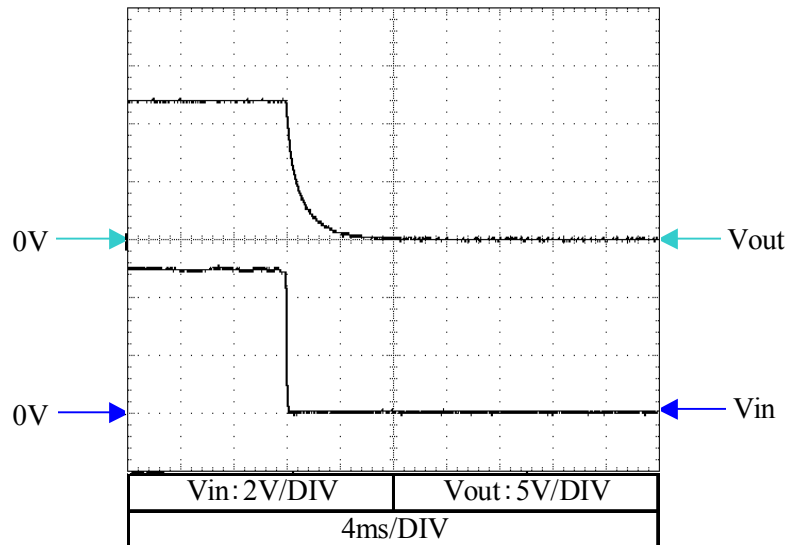
Vin : 5V

Ta : 25°C

Iout : 0%



Iout : 100%



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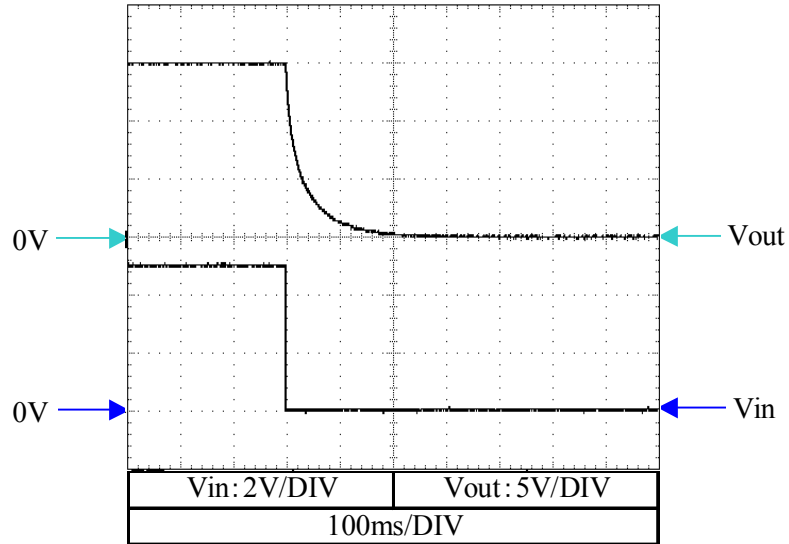
Evaluation data

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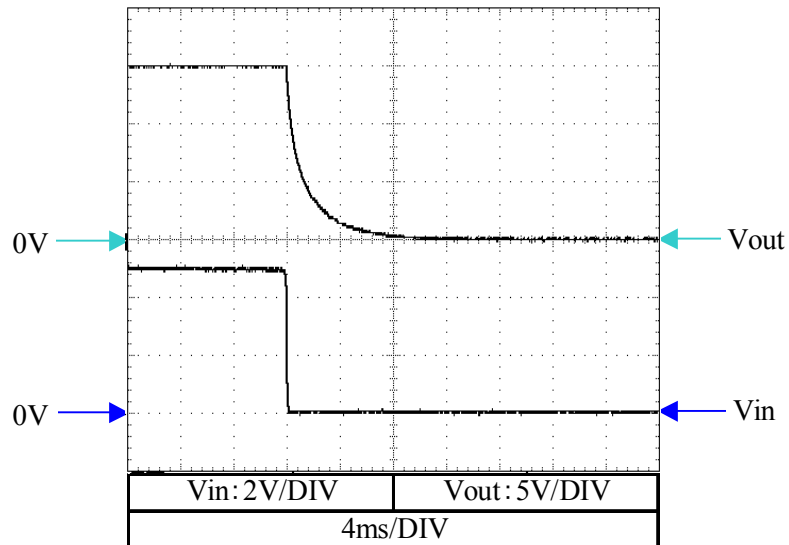
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Condition Vin : 5V
 Ta : 25°C
 TRM: Short-circuited to -Vout.

Iout : 0%



Iout : 100%



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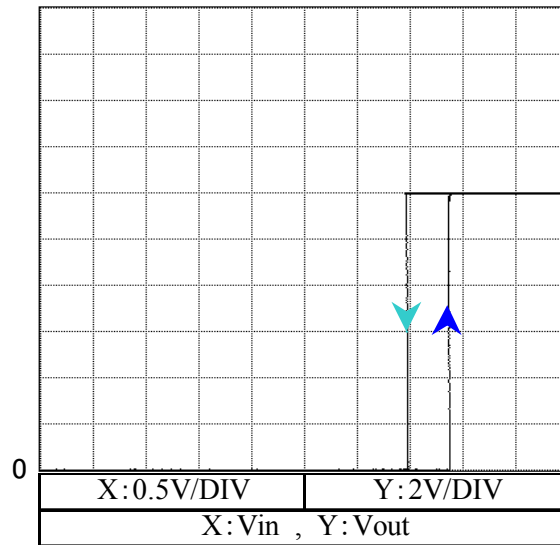
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10. Start/stop input voltage characteristics

Condition

I_{out} : 100%

T_a : 25°C



11. Dynamic load response characteristics

Condition

V_{in} : 5V

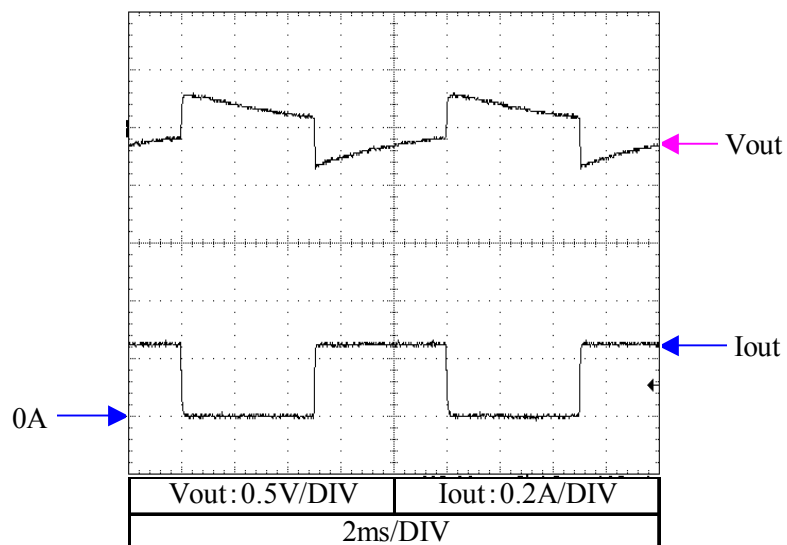
V_{out} : 12V

I_{out} : 0% ~ 100%

Tr=Tf : 100us

f : 100Hz

T_a : 25°C



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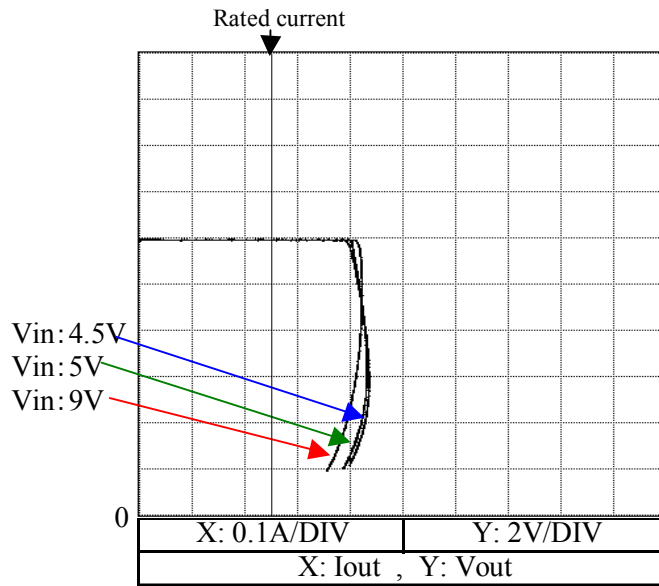
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12. Over current protection characteristics

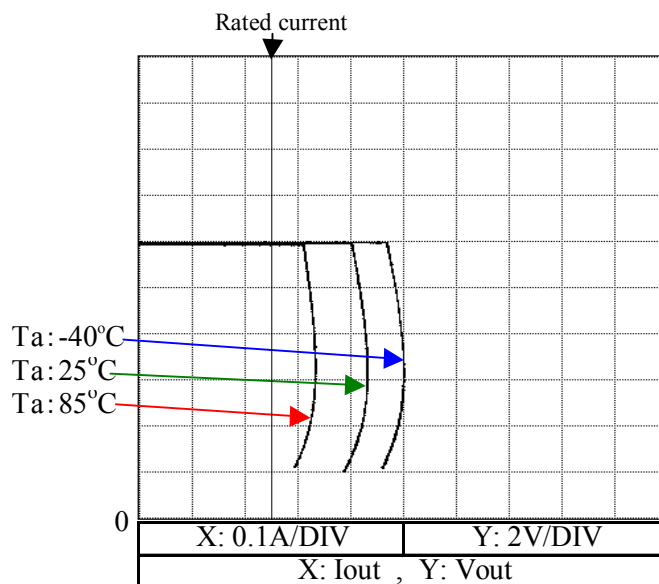
Condition

Ta : 25°C



Condition

Vin : 5V



Product name or model, title

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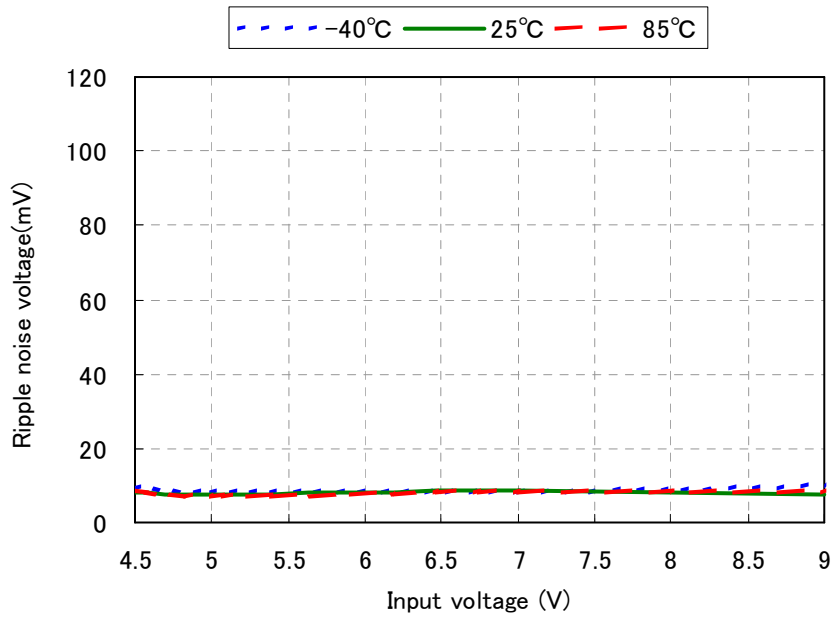
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13. Output ripple and noise characteristics

Condition

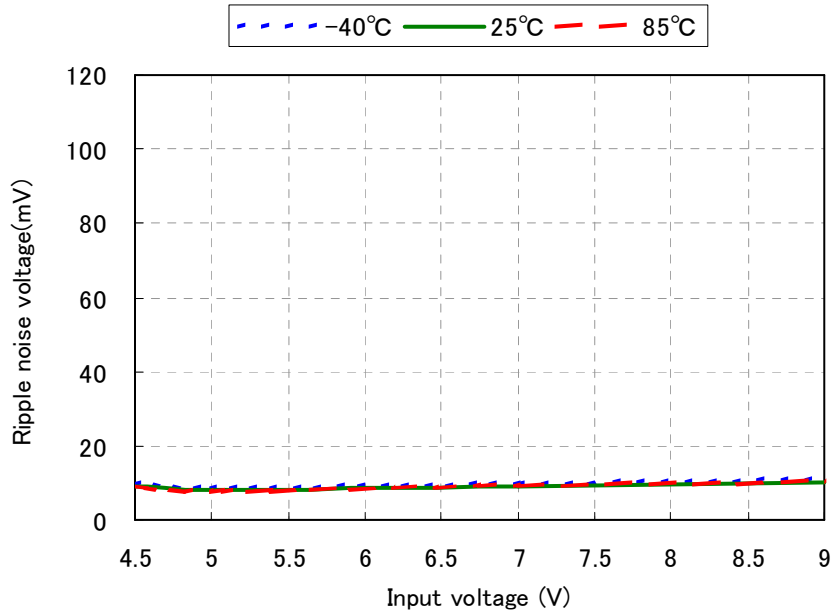
lout : 100%



Condition

lout : 100%

TRM: Short-circuited to -Vout.



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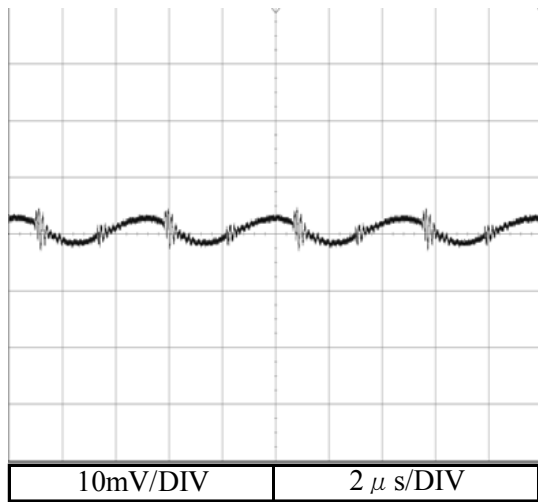
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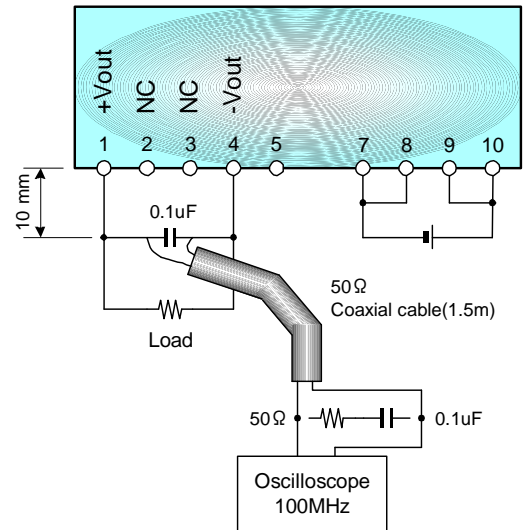
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14. Output ripple and noise waveform

Condition Vin : 5V
Iout : 100%
Ta : 25°C

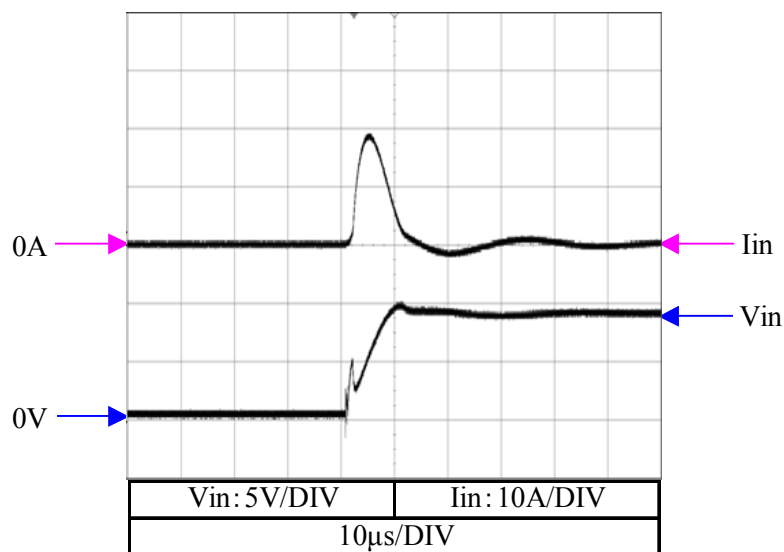


(Measurement circuit)



15. Inrush current waveform

Condition Vin : 9V
Iout : 100%
Ta : 25°C



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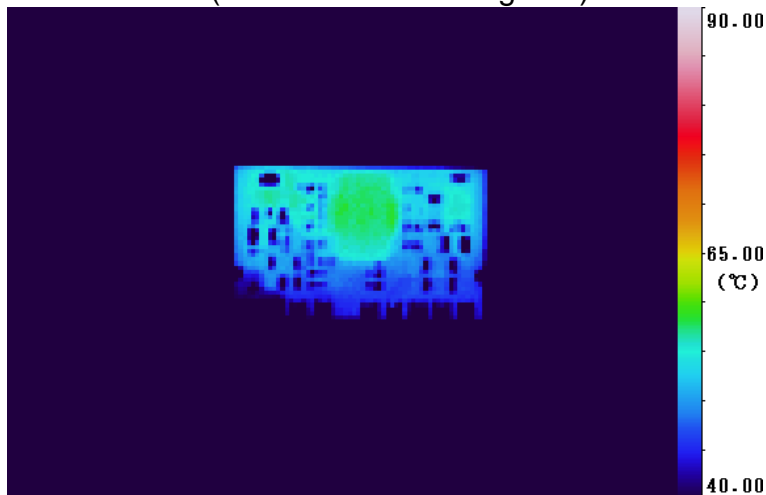
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16. Temperature distribution

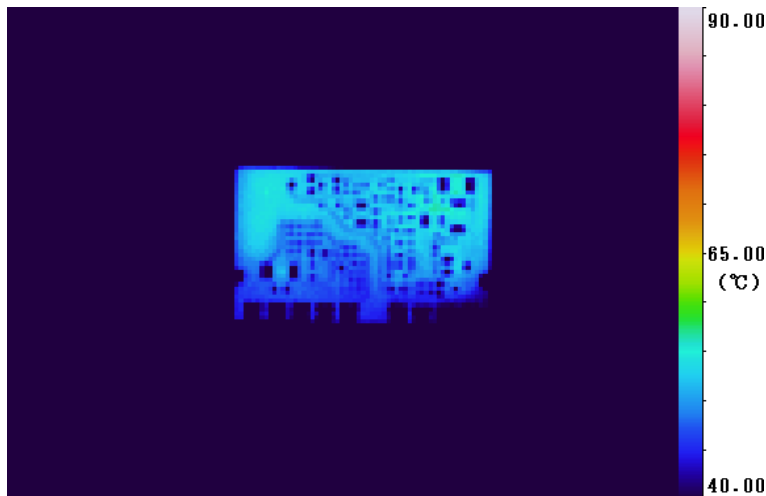
(Thermography)

Condition
 Vin : 5V
 Vout : 12V
 Iout : 100%
 Ta : 25°C
 Wind velocity : 0m/s

A side(transformer mounting side)



B side



(Main parts)

rise of temperature(ΔT)		
Main swtch(°C)	Rectifier diode(°C)	Transformer(°C)
28.6	27.4	30.1

* We measured the temperatures of parts without the case by using the thermography. Therefore, it might be different a little from the actual temperature.

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