
Material name : Evaluation data

Customer's product name :

TDK product name : DC-DC converter
CC3-2405SS-E (SIP model)

TDK-Lambda

TDK Corporation
Power Systems Business Group

DWG.No.	TRSC-1584-1
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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)
CC3-2405SS-E	18~36	5 ±3%	0~600	3	-40 ~ +85 ^{*2}
		6 ±3% ^{*1}	0~500		

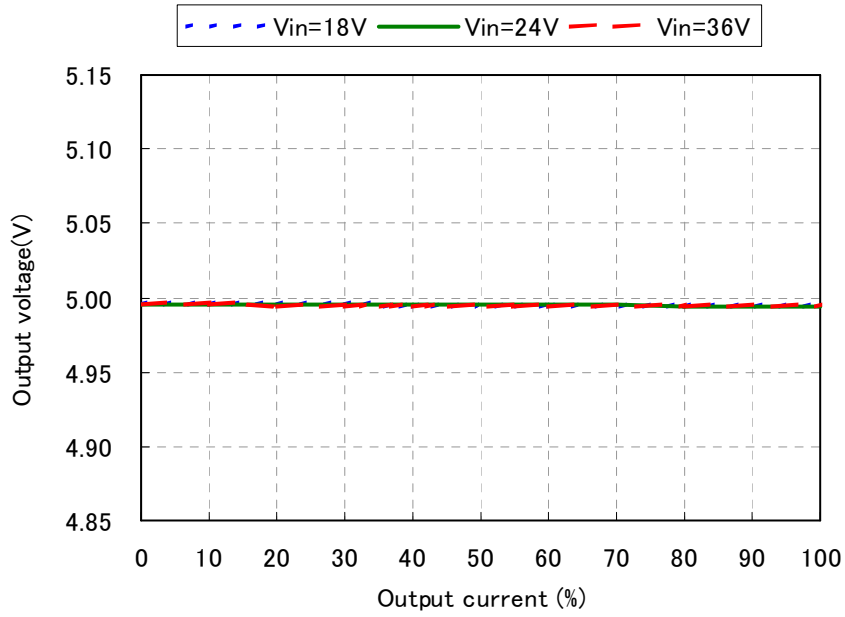
*1 TRM and -Vout are short-circuited.

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

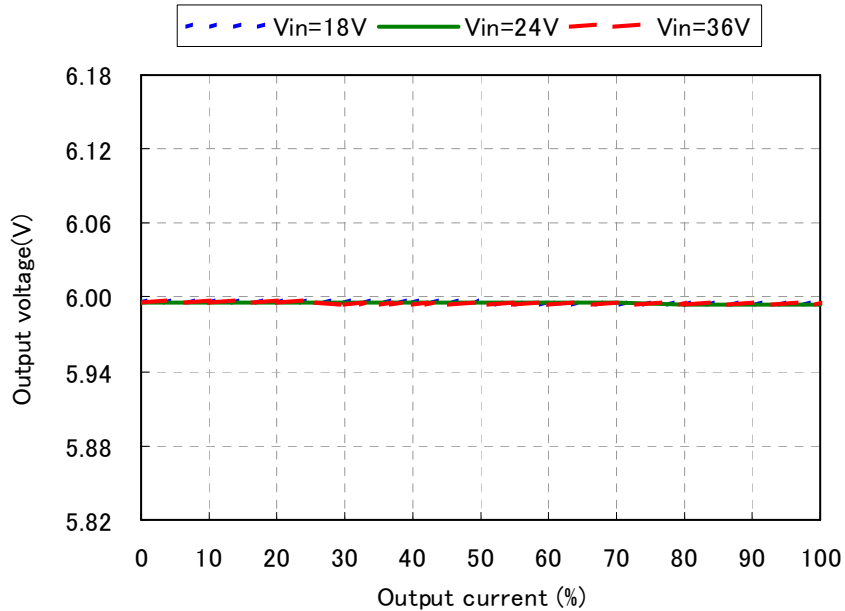
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	DC-DC converter CC3-2405SS-E		
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1. Load regulation

Condition Ta : -40°C

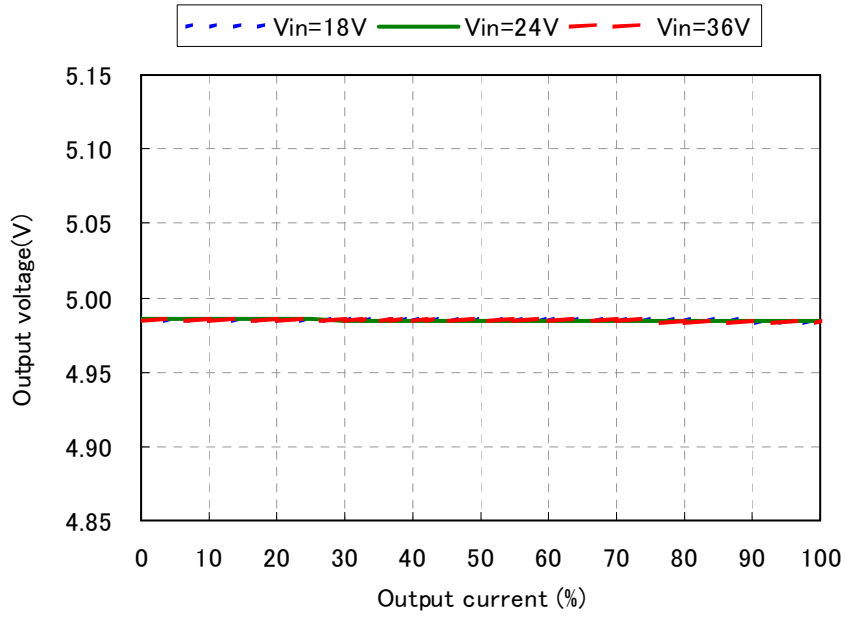


Condition Ta : -40°C
TRM: Short-circuited to -Vout.

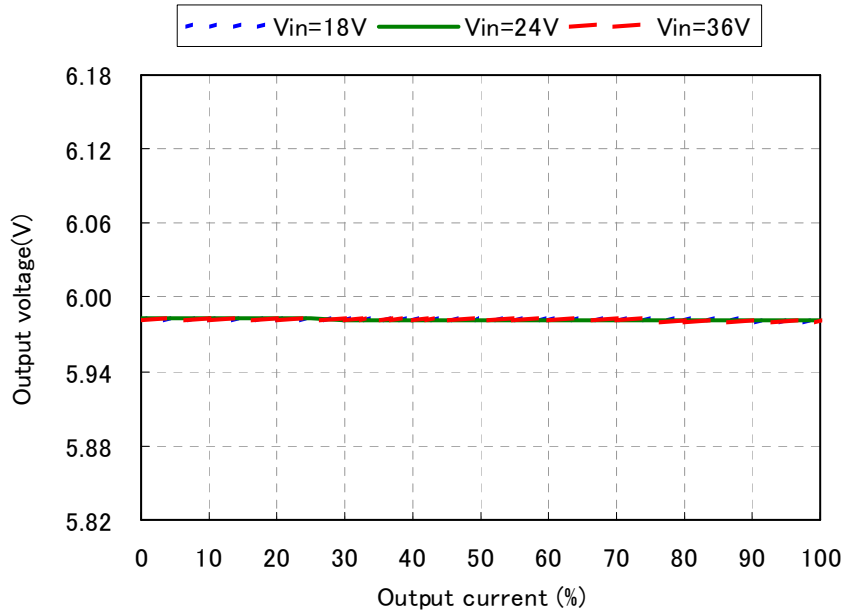


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Condition Ta : 25°C

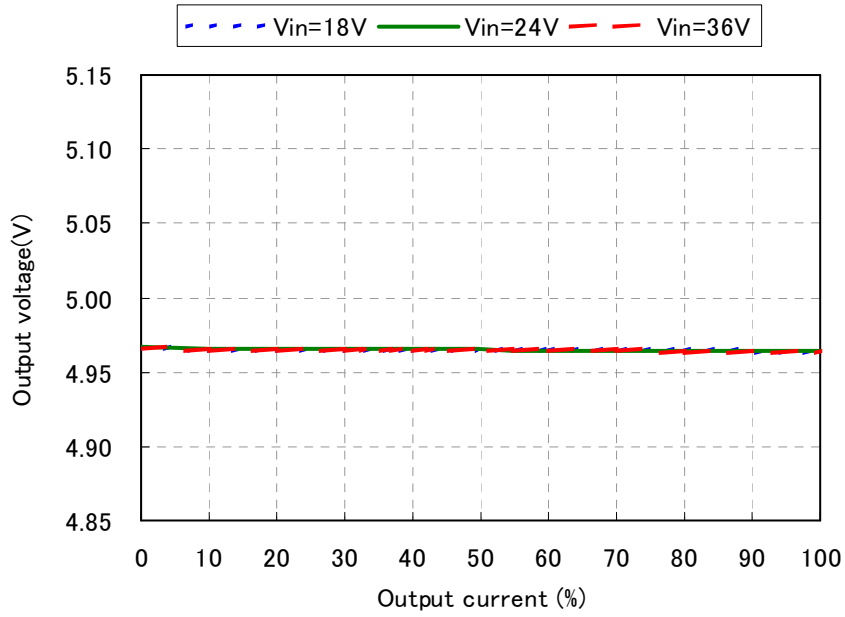


Condition Ta : 25°C
TRM: Short-circuited to -Vout.

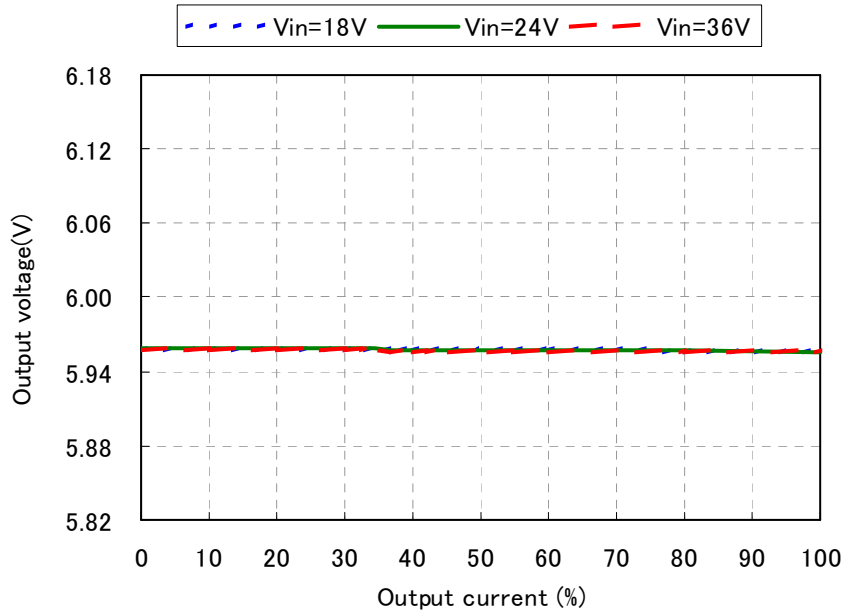


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Condition Ta : 85°C



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

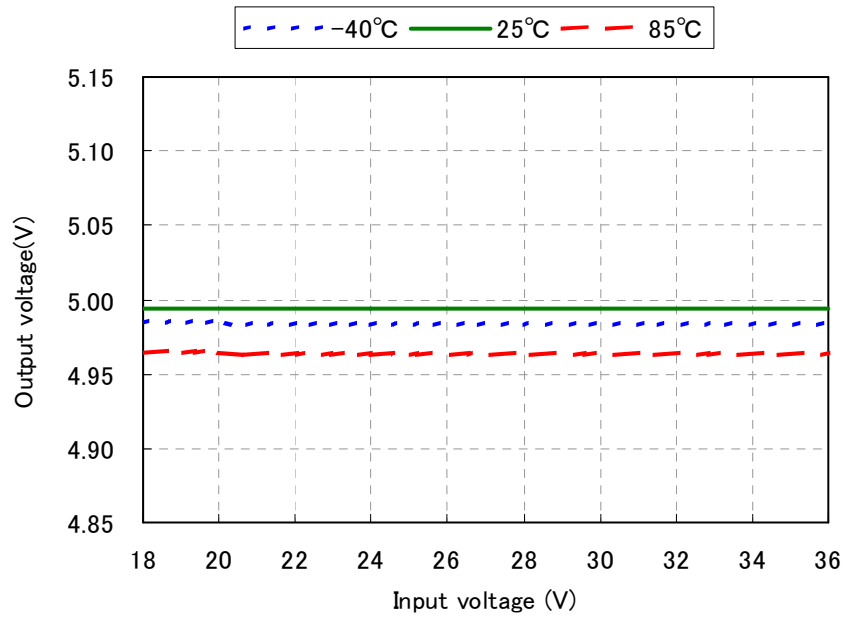


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2. Line regulation

Condition

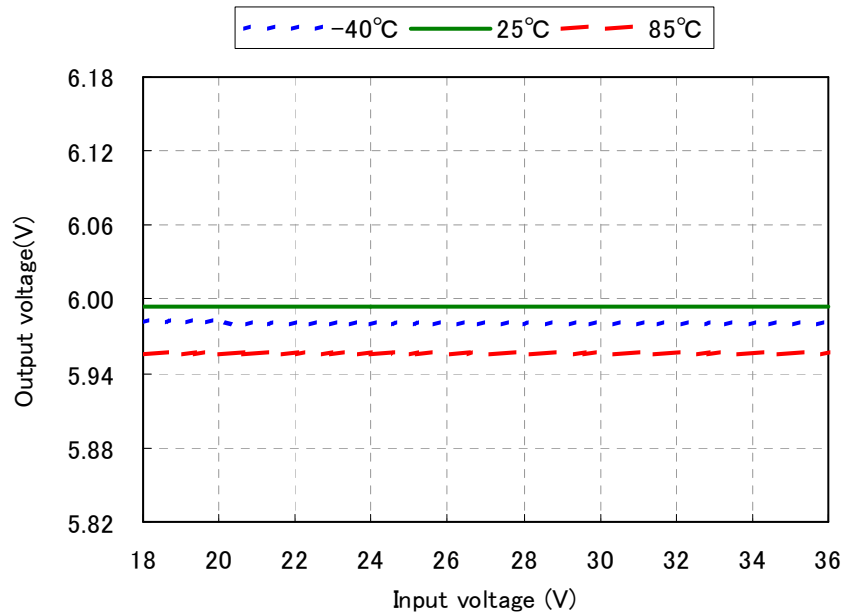
I_{out} : 100%



Condition

I_{out} : 100%

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



Product name or model, title

DC-DC converter CC3-2405SS-E

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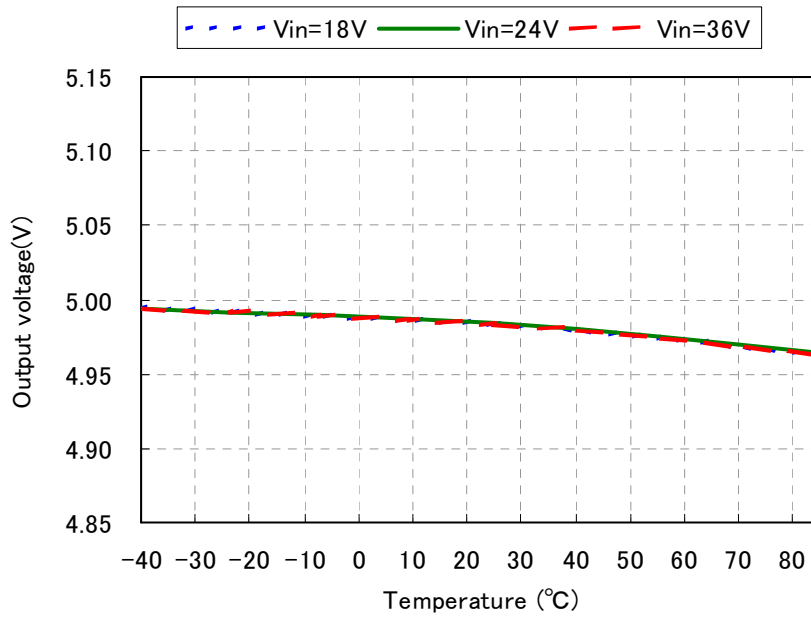
Evaluation data

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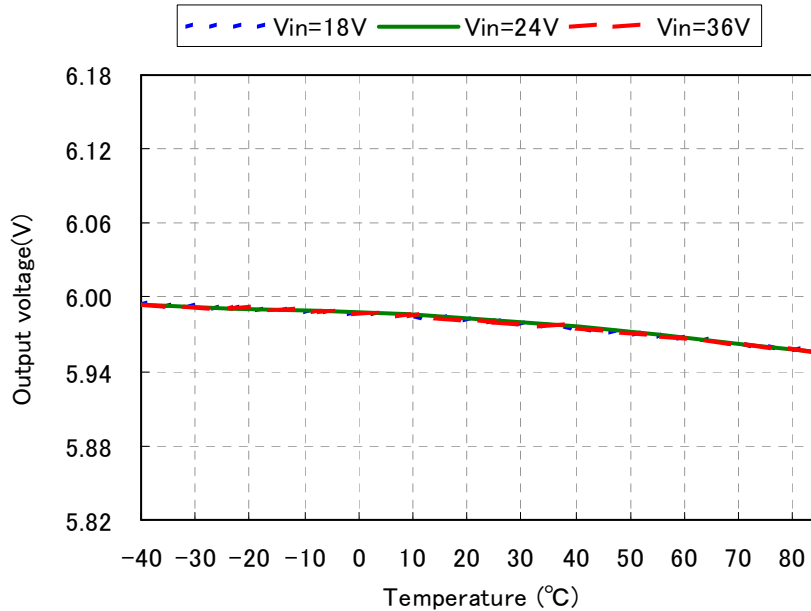
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3. Temperature regulation

Condition Iout : 100%



Condition Iout : 100%
TRM: Short-circuited to -Vout.



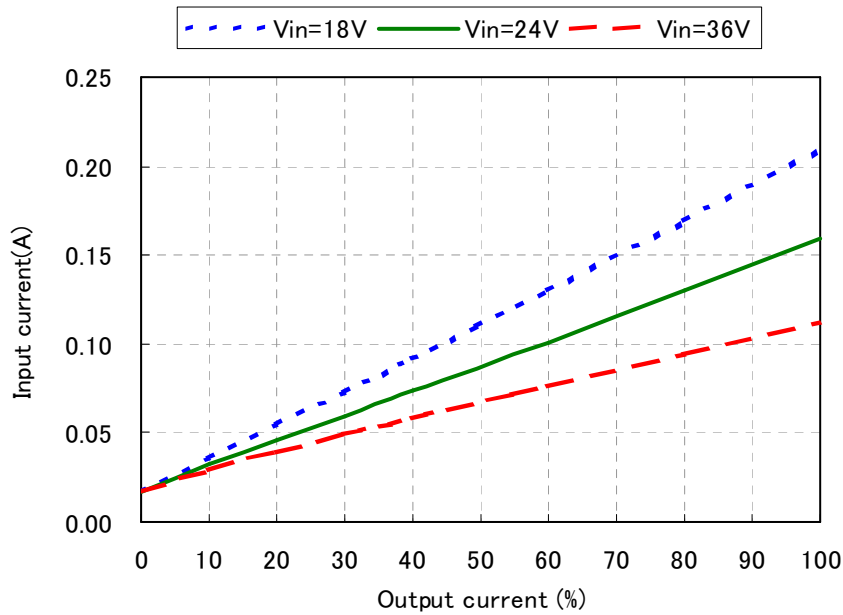
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4. Input current(vs. load current)

Condition

Ta : 25°C

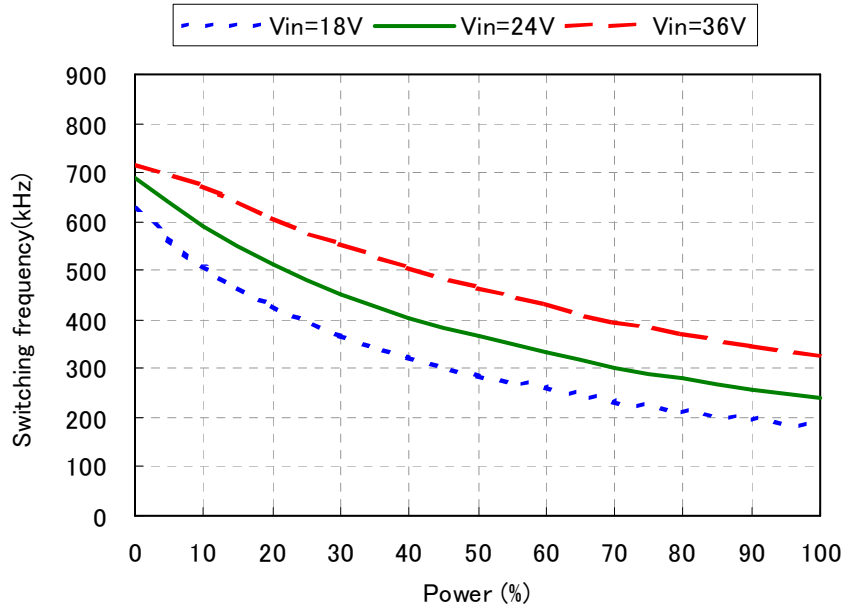
Vout : 5V



5. Switching frequency(vs. output power)

Condition

Ta : 25°C



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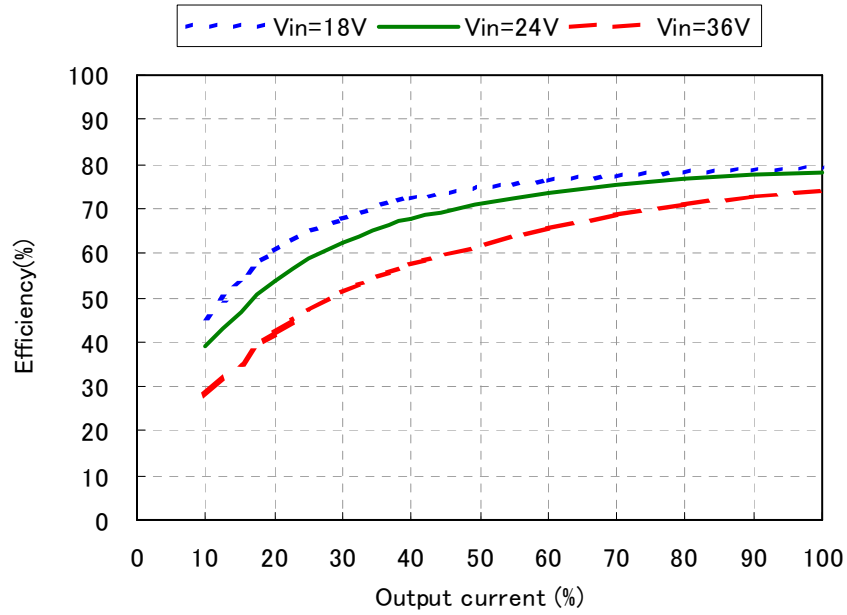
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6. Efficiency(vs. load current)

Condition

Ta : 25°C

Vout : 5V

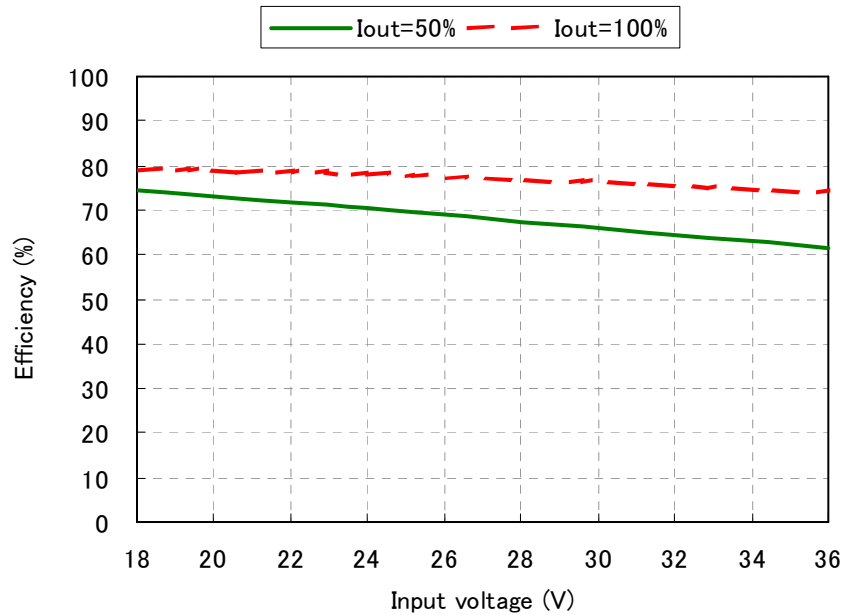


7. Efficiency(vs. input voltage)

Condition

Ta : 25°C

Vout : 5V



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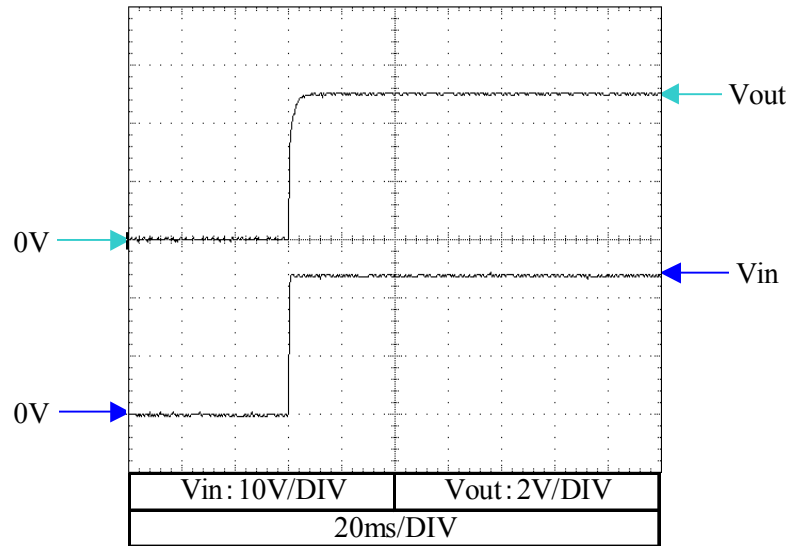
8. Output rise characteristics

Condition

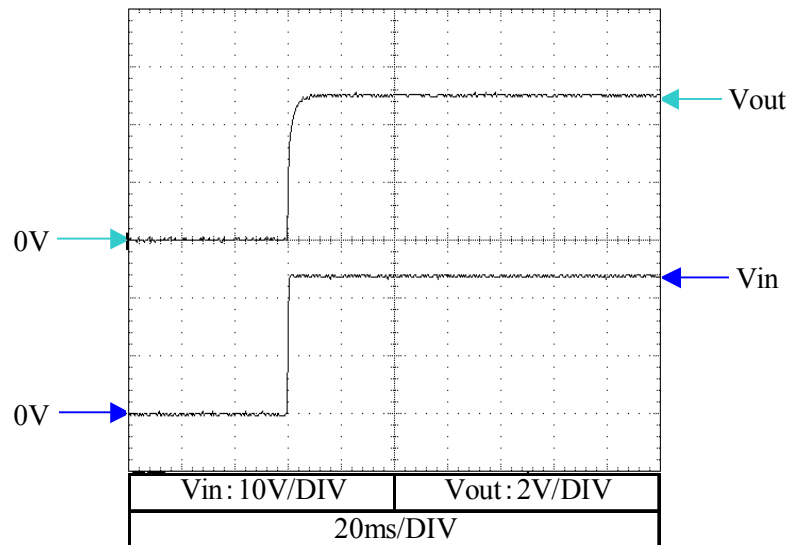
Vin : 24V

Ta : 25°C

Iout : 0%



Iout : 100%



Product name or model, title

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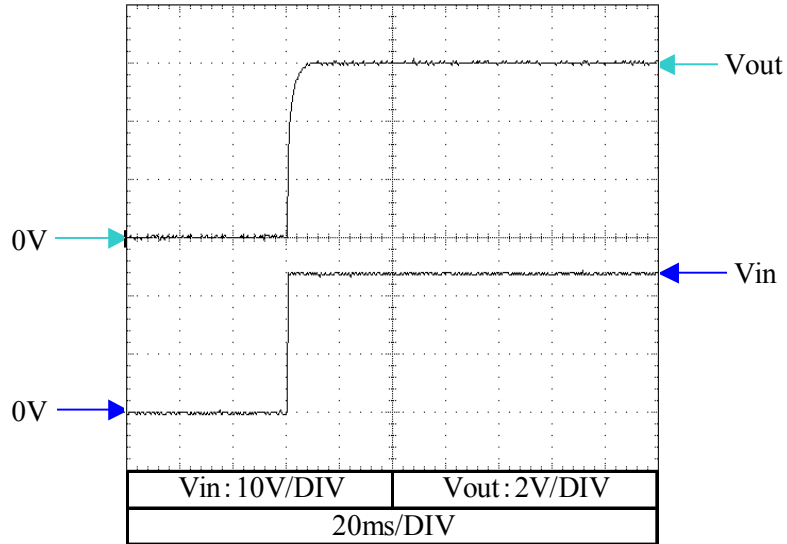
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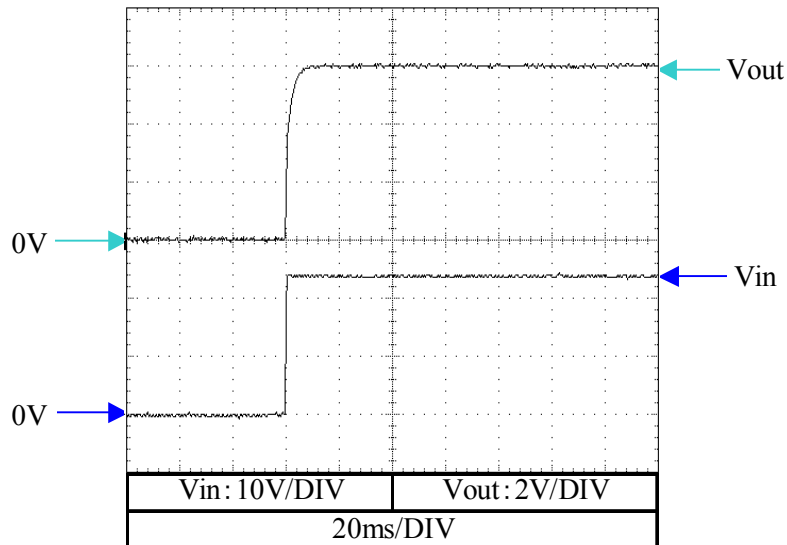
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Condition Vin : 24V
 Ta : 25°C
 TRM: Short-circuited to -Vout.

Iout : 0%



Iout : 100%



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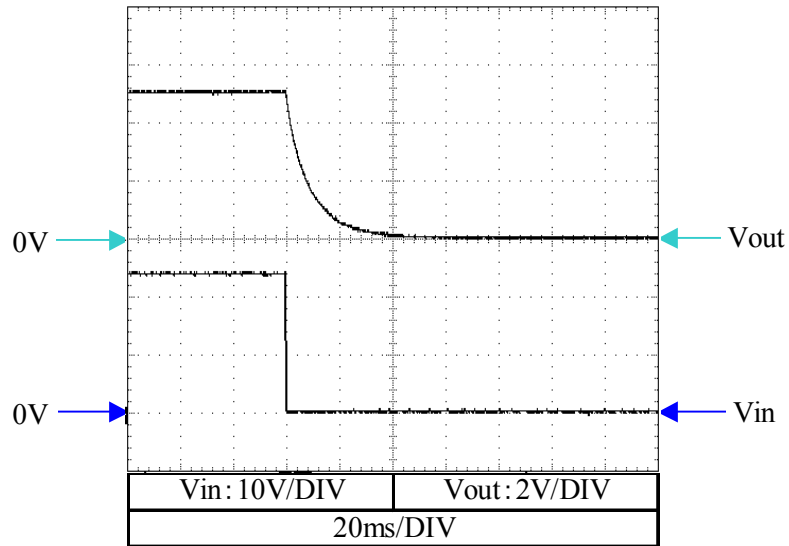
9. Output fall characteristics

Condition

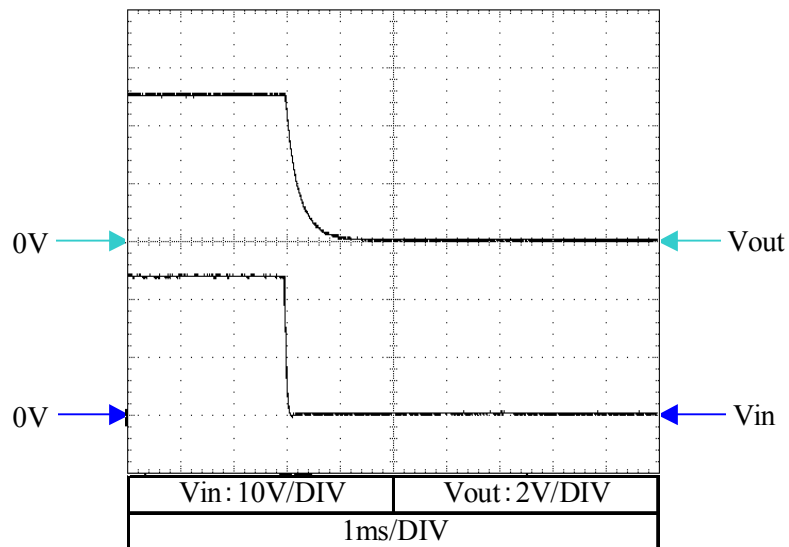
Vin : 24V

Ta : 25°C

Iout : 0%



Iout : 100%



Product name or model, title

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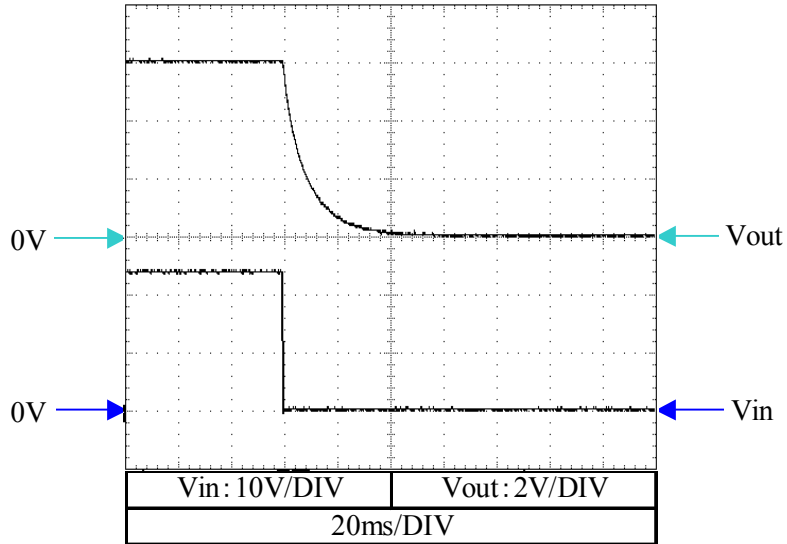
Evaluation data

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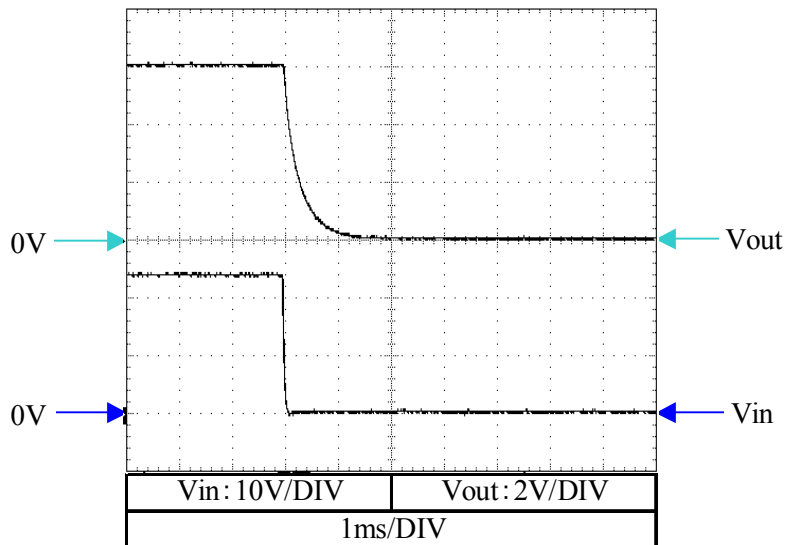
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Condition Vin : 24V
 Ta : 25°C
 TRM: Short-circuited to -Vout.

Iout : 0%



Iout : 100%



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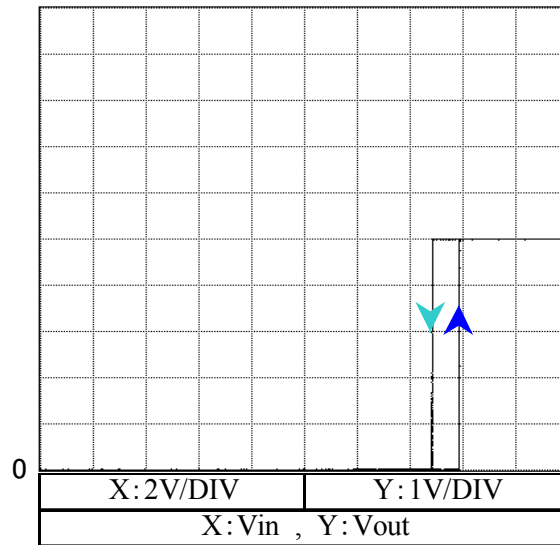
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10. Start/stop input voltage characteristics

Condition

Iout : 100%

Ta : 25°C



11. Dynamic load response characteristics

Condition

Vin : 24V

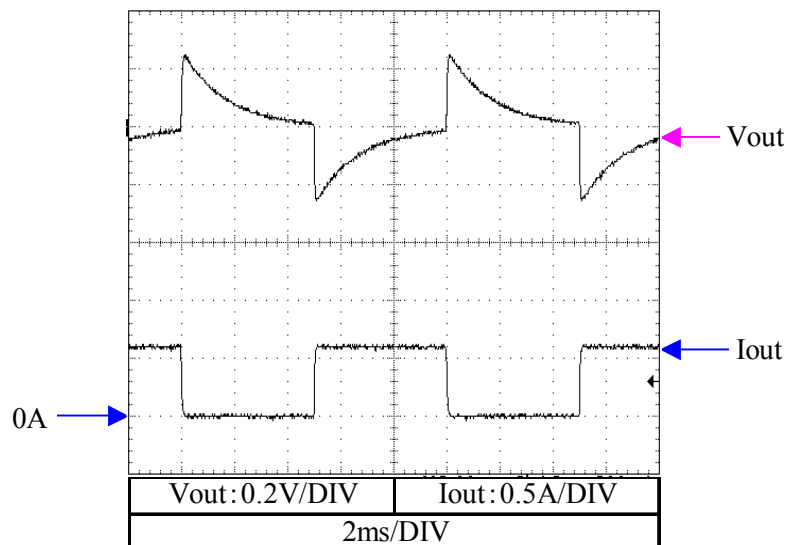
Vout : 5V

Iout : 0% ~ 100%

Tr=Tf : 100us

f : 100Hz

Ta : 25°C



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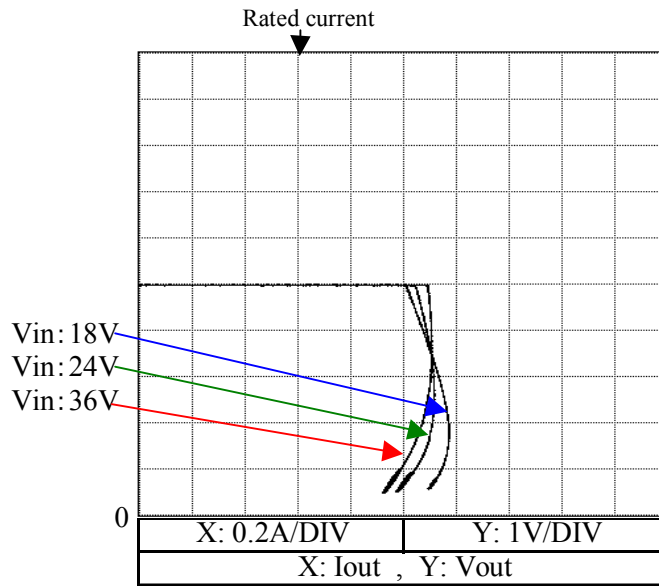
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12. Over current protection characteristics

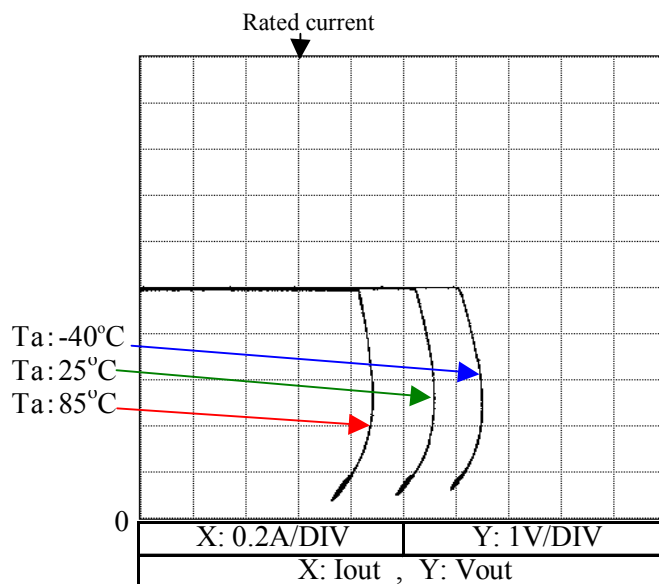
Condition

Ta : 25°C



Condition

Vin : 24V



Product name or model, title

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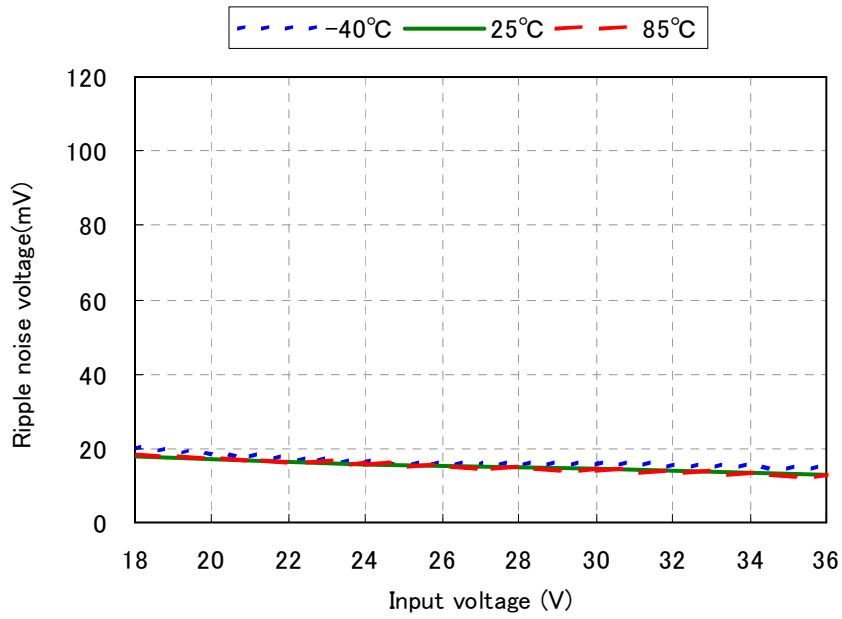
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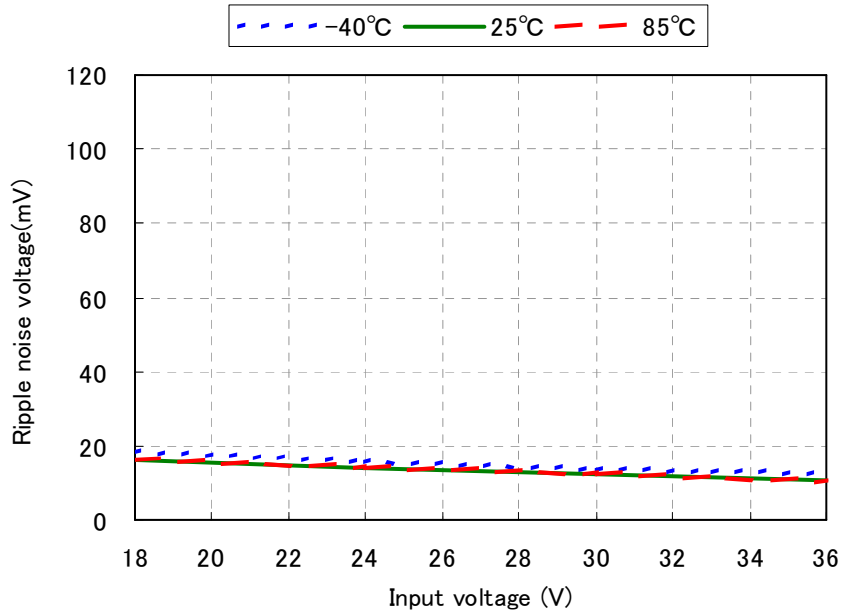
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13. Output ripple and noise characteristics

Condition Iout : 100%



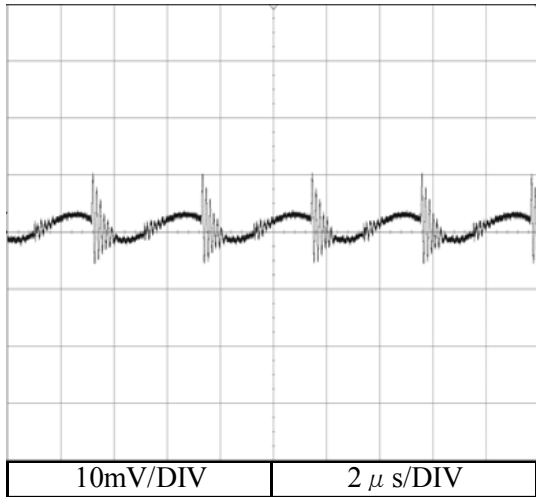
Condition Iout : 100%
TRM: Short-circuited to -Vout.



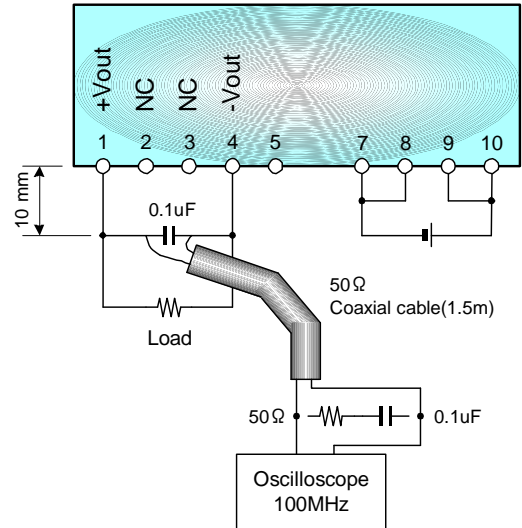
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14. Output ripple and noise waveform

Condition Vin : 24V
Iout : 100%
Ta : 25°C

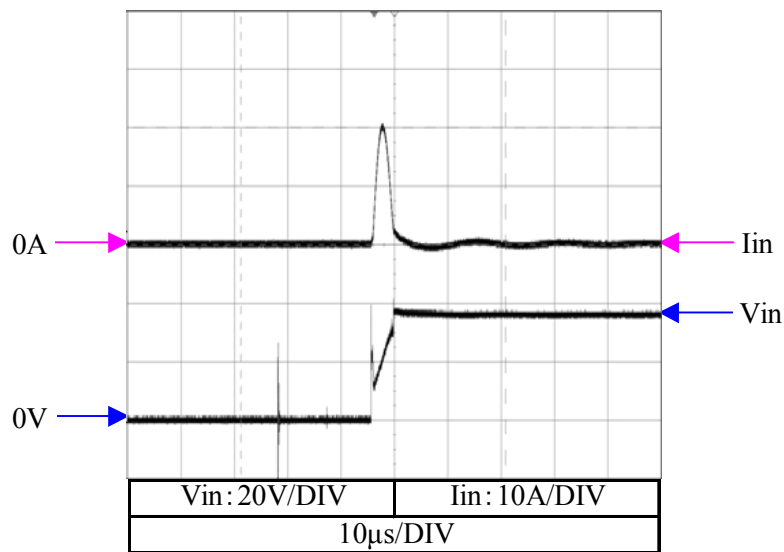


(Measurement circuit)



15. Inrush current waveform

Condition Vin : 36V
Iout : 100%
Ta : 25°C



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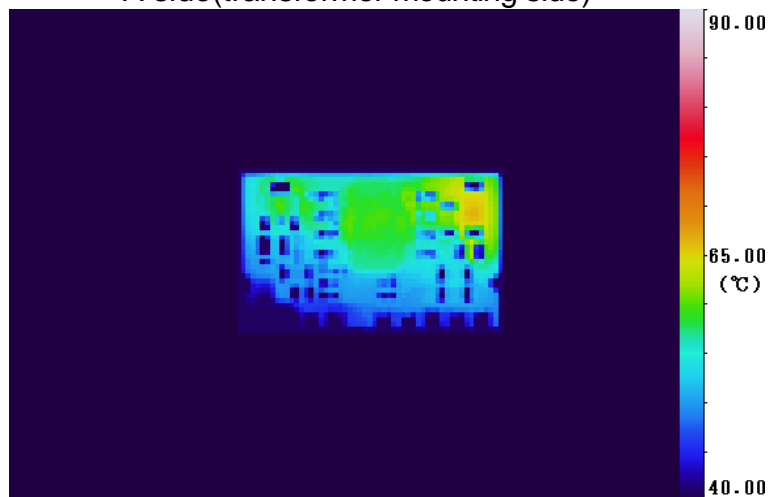
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16. Temperature distribution

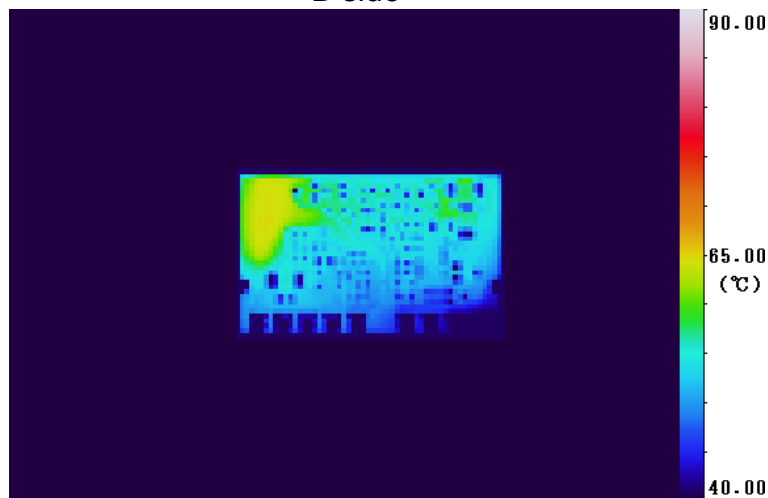
(Thermography)

Condition
 Vin : 24V
 Vout : 5V
 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)
32.1	40.7	31.6

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

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