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Material name : Evaluation data

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Customer's product name :

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DC-DC converter  
TDK product name : CC1R5-1212DF-E , CC1R5-1212DR-E

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# ***TDK-Lambda***

**TDK Corporation**  
**Power Systems Business Group**

DWG.No.	TRSC-1509-2
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Revised 2006/12/01

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\* The measurement has been done without external output capacitor.

(Product specification)

Product name	Input voltage(V)	Output voltage(V)	Output current(mA)	The maximum output power(W)	Ambient temperature(°C)
CC1R5-1212DF-E	9~18	±12 ±5%	0~60	1.5	-40 ~ +85 *2
CC1R5-1212DR-E		±15 ±5% *1	0~50		

\*1 TRM and -Vout are short-circuited.

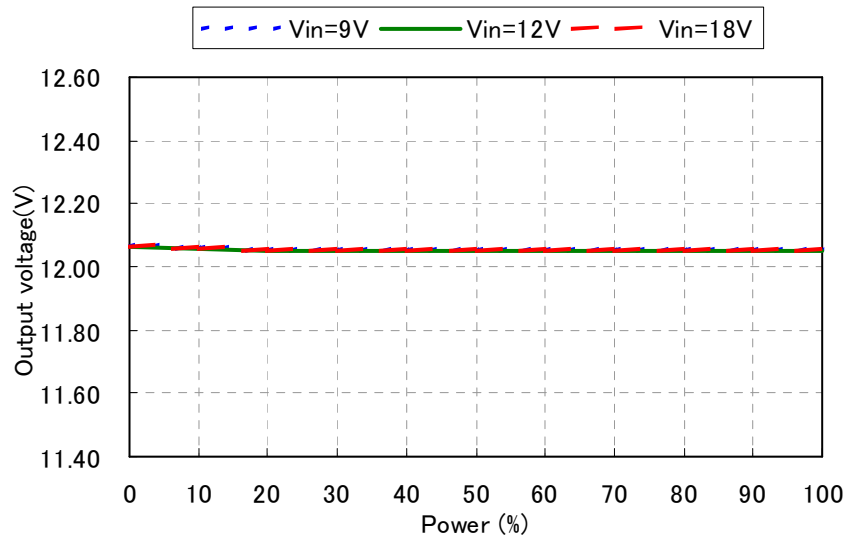
\*2 At 50°C or more, output power derating is necessary.

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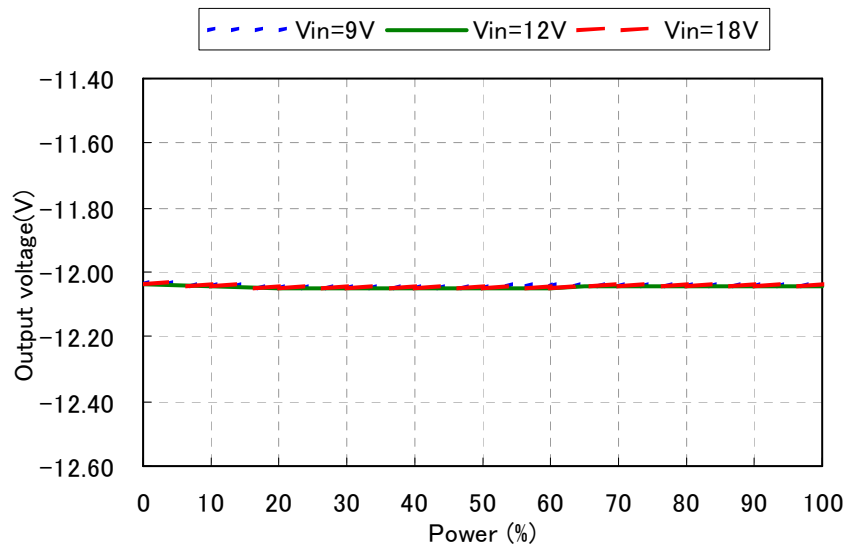
# 1. Load regulation

Condition Ta : 25°C

Vout=+12V



Vout=-12V

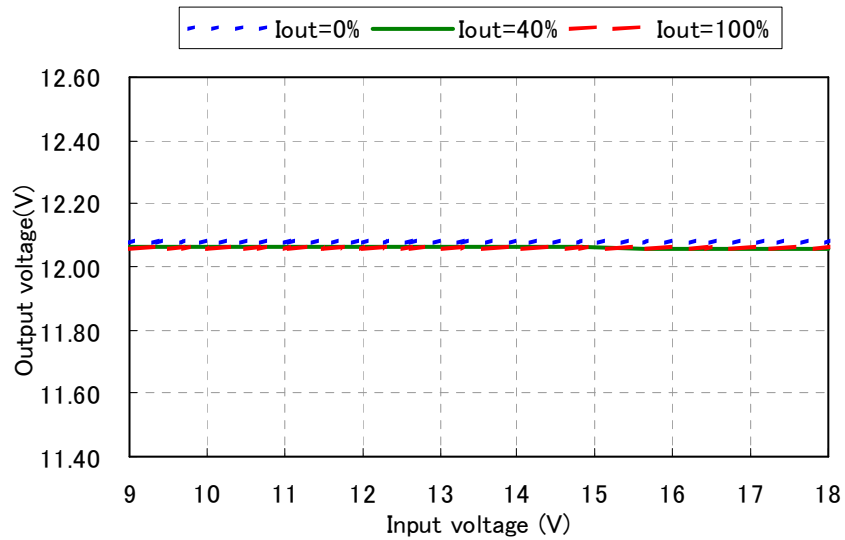


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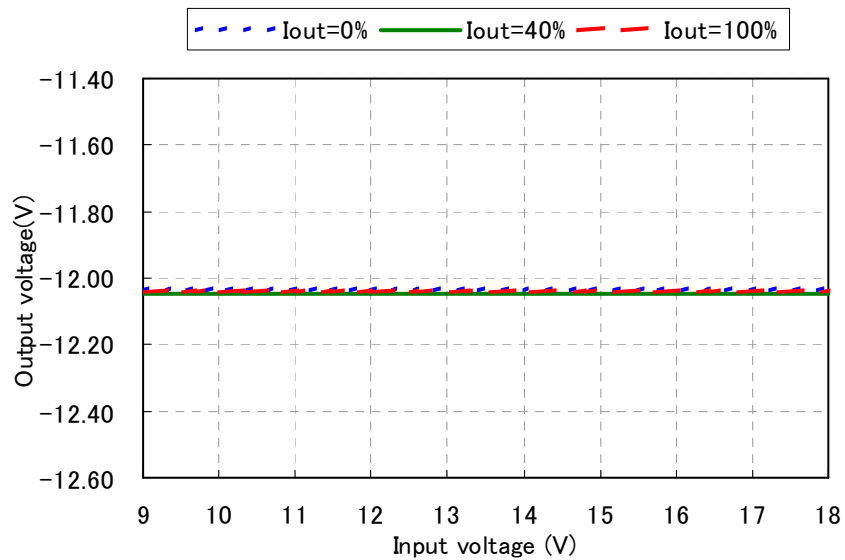
## 2. Line regulation

Condition Ta : 25°C

Vout=+12V



Vout=-12V



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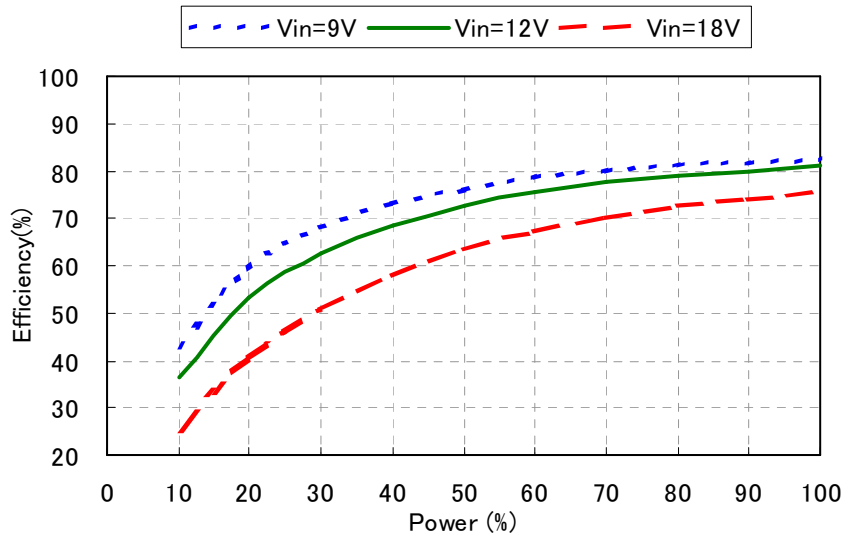
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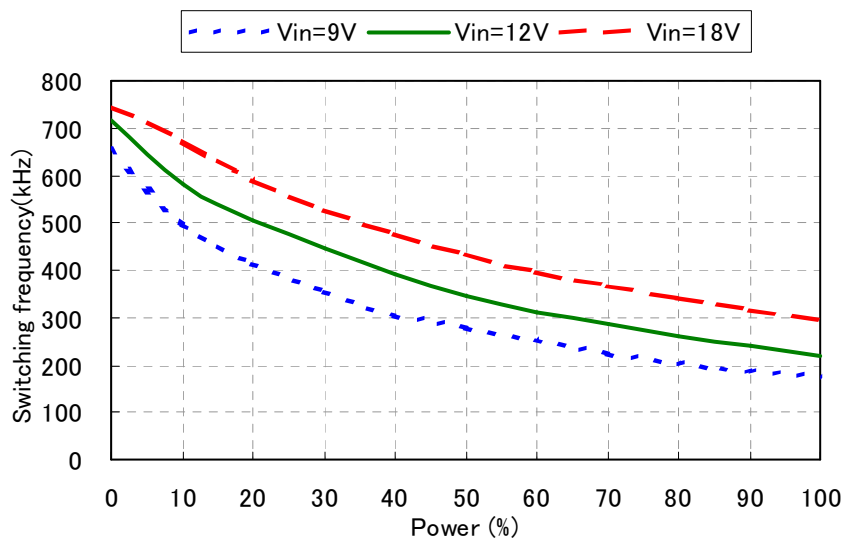
### 3. Efficiency

Condition Ta : 25°C



### 4. Switching frequency vs. output power

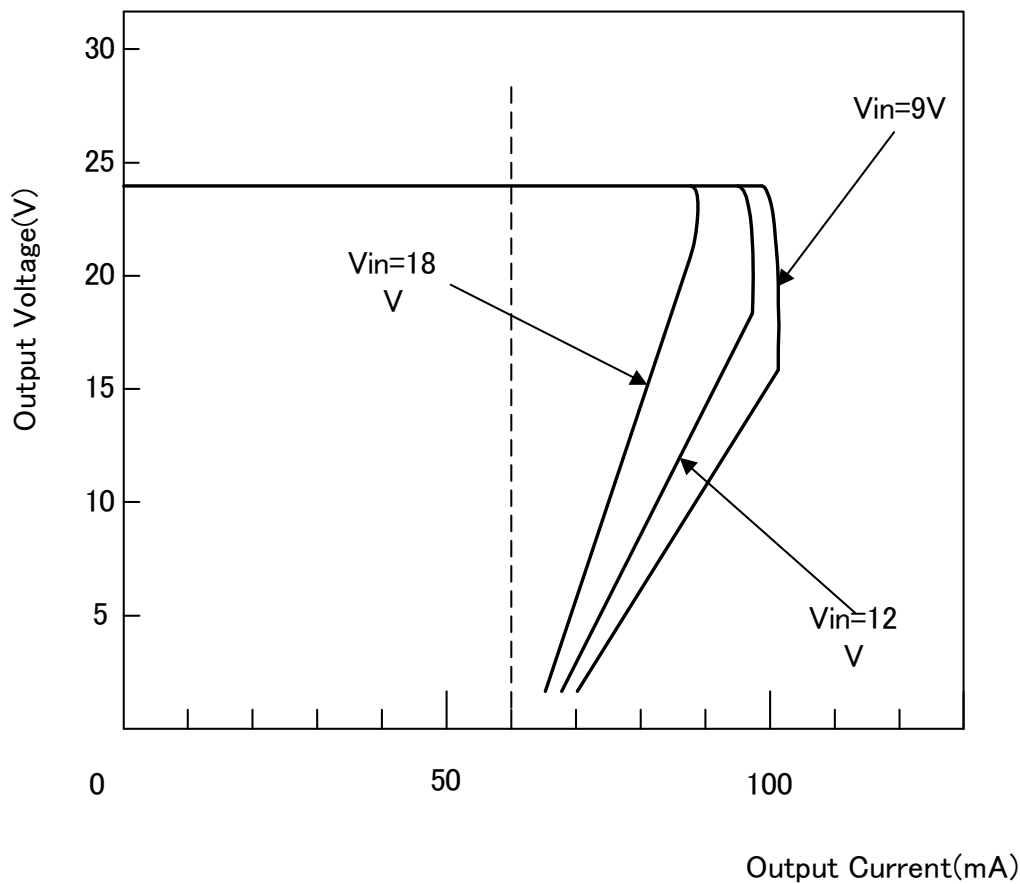
Condition Ta : 25°C



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## 5. Over current protection characteristics

Condition Ta : 25°C



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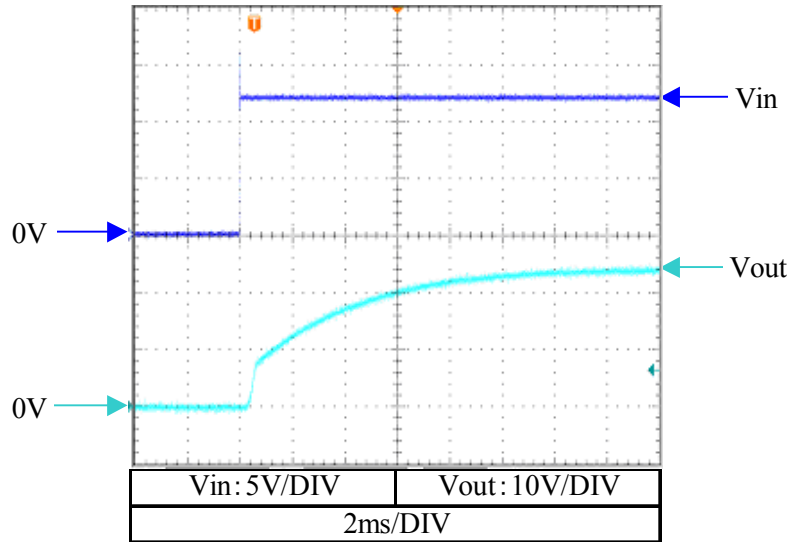
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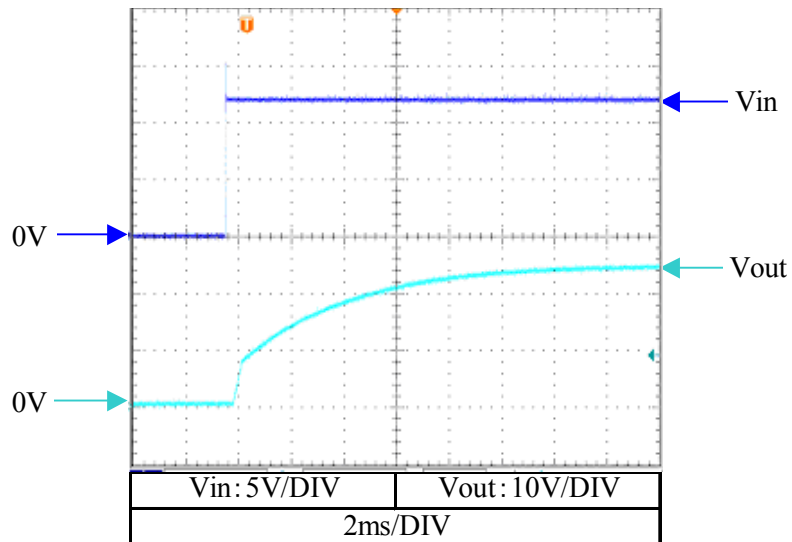
## 6. Output rise characteristics

Condition       $V_{in}$  : 12V  
                      $T_a$  : 25°C

$I_{out}$  : 0%



$I_{out}$  : 100%



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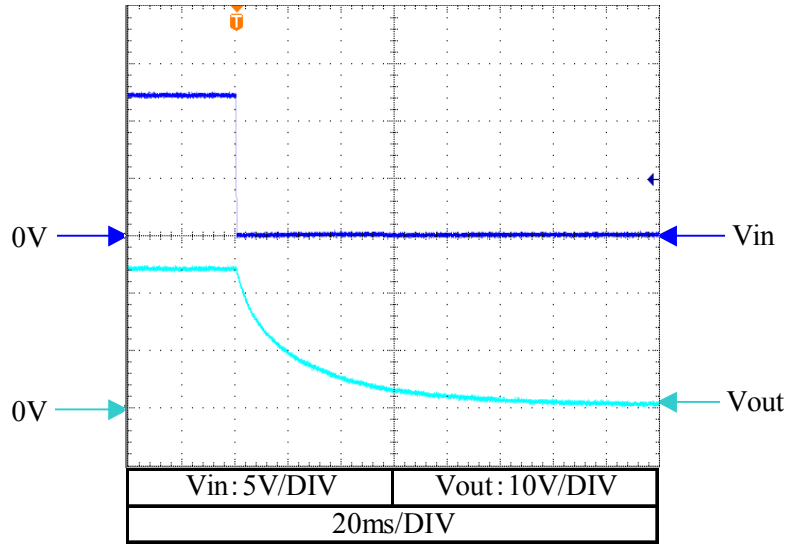
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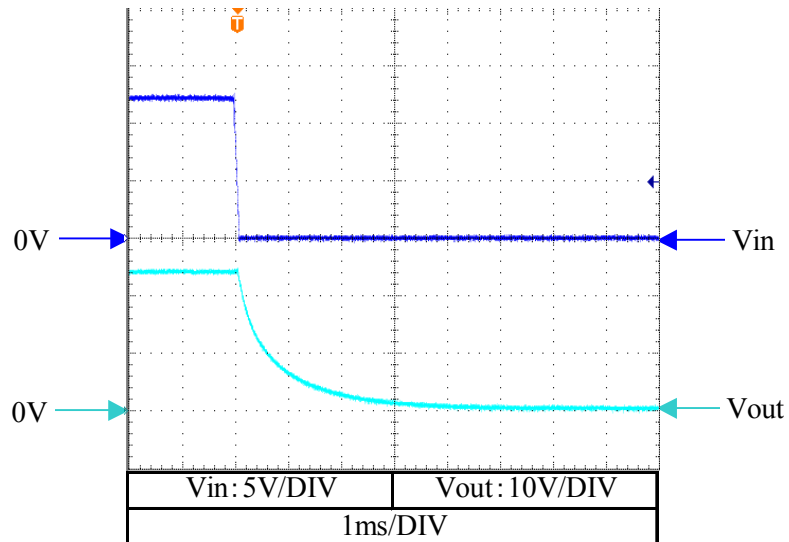
# 7. Output fall characteristics

Condition Vin : 12V  
Ta : 25°C

Iout : 0%



Iout : 100%



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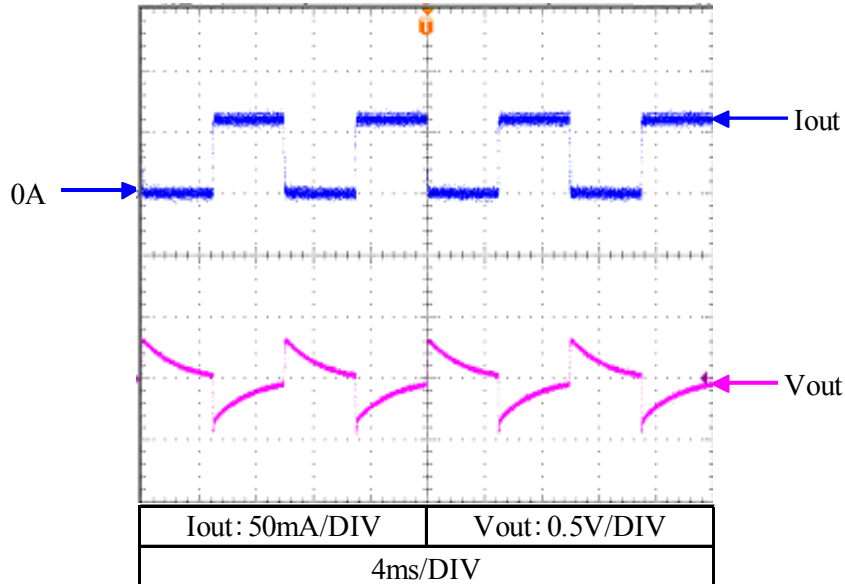
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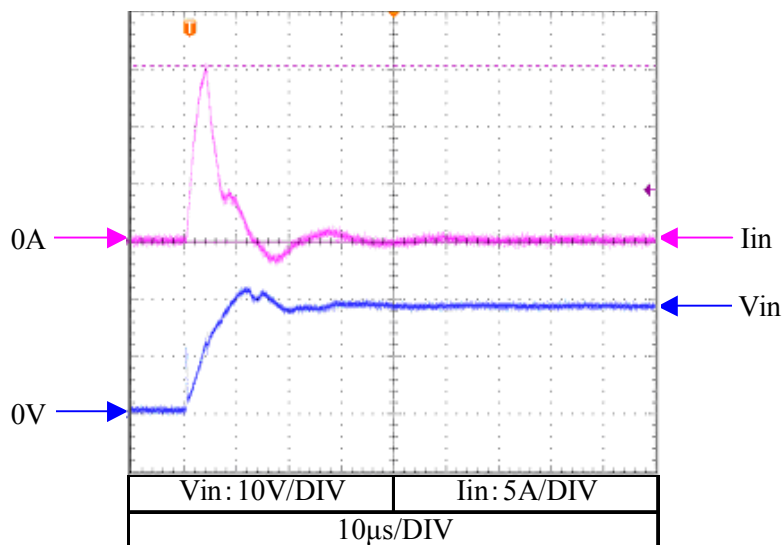
## 8. Dynamic load response characteristics

Condition  
 Vin : 12V  
 Vout : ±12V  
 Iout : 0% ⇔ 100%  
 Tr=Tf : 100 μs  
 f : 100Hz  
 Ta : 25°C



## 9. Inrush current waveform

Condition  
 Vin : 18V  
 Iout : 100%  
 Ta : 25°C



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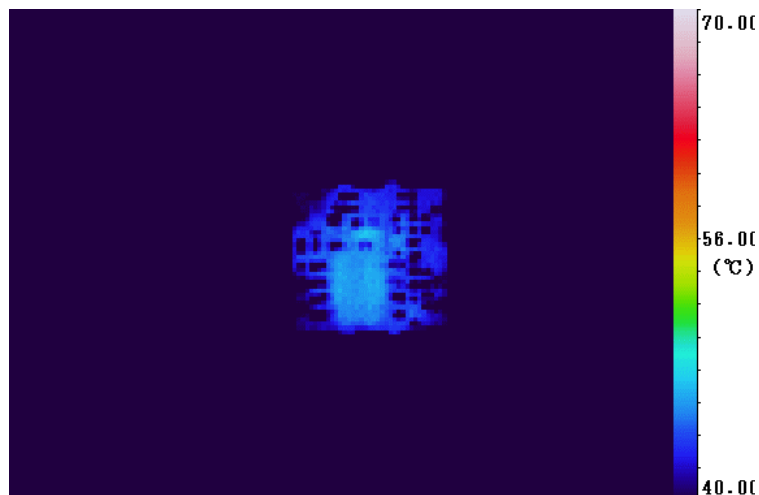
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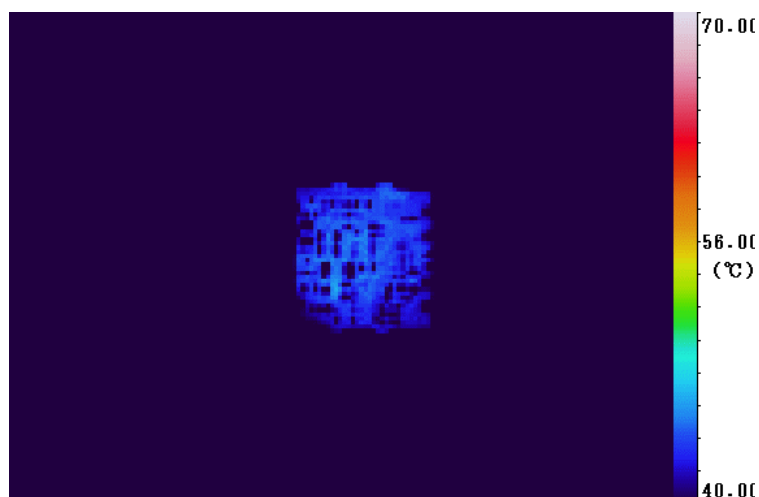
## 10. Temperature distribution

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

Top View



Bottom View



- (\*) • This test was done on our evaluation board. (Glass epoxy substrate, Size:100x100x1.6mm)
- 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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