

---

Material name : Evaluation data

---

Customer's product name :

---

DC-DC converter  
TDK product name : CC1R5-0512DF-E , CC1R5-0512DR-E

---

# ***TDK-Lambda***

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

DWG.No.	TRSC-1505-2
---------	-------------

Revised 2006/12/01

# INDEX

1. Load regulation.....	P2
2. Line regulation.....	P3
3. Efficiency.....	P4
4. Switching frequency vs. output power.....	P4
5. Over current protection characteristics.....	P5
6. Output rise characteristics.....	P6
7. Output fall characteristics.....	P7
8. Dynamic load response characteristics.....	P8
9. Inrush current waveform.....	P8
10. Temperature distribution.....	P9

\* 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)
CC1R5-0512DF-E	4.5~9	±12 ±5%	0~60	1.5	-40 ~ +85 *2
CC1R5-0512DR-E		±15 ±5% *1	0~50		

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

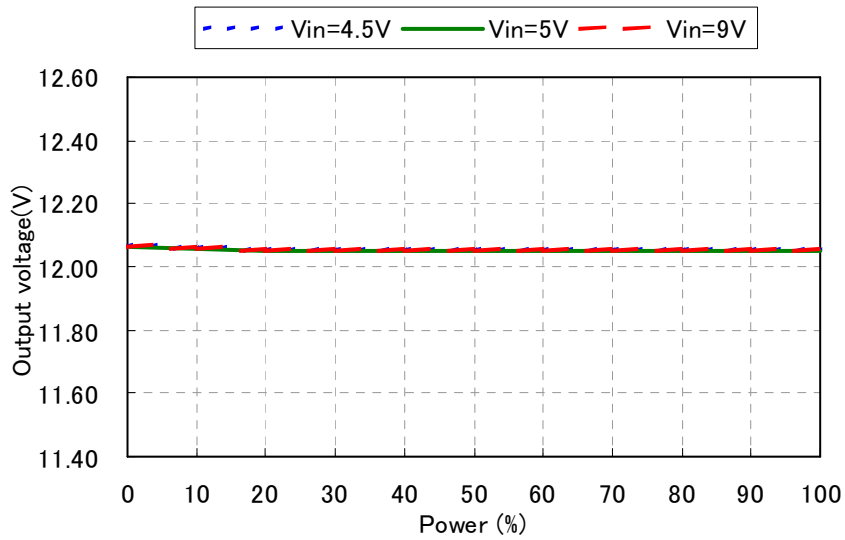
\*2 At 50°C or more, output power derating is necessary.

TDK CORPORATION	Product name or model, title		
	DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E		
	Name of drawing	Drawing No.	PAGE
	Evaluation data	TRSC-1505-2	1/ 9

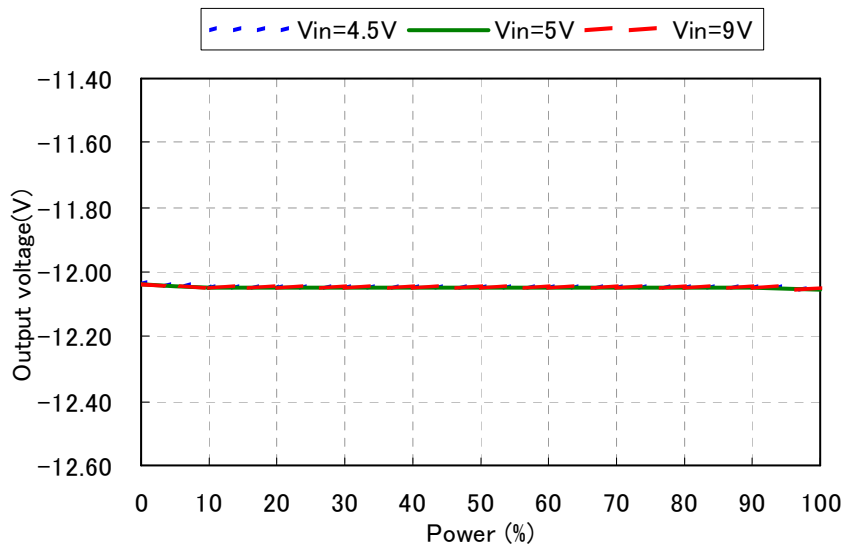
# 1. Load regulation

Condition Ta : 25°C

Vout=+12V



Vout=-12V



Product name or model, title

DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E

TDK CORPORATION

Name of drawing

Drawing No.

PAGE

Evaluation data

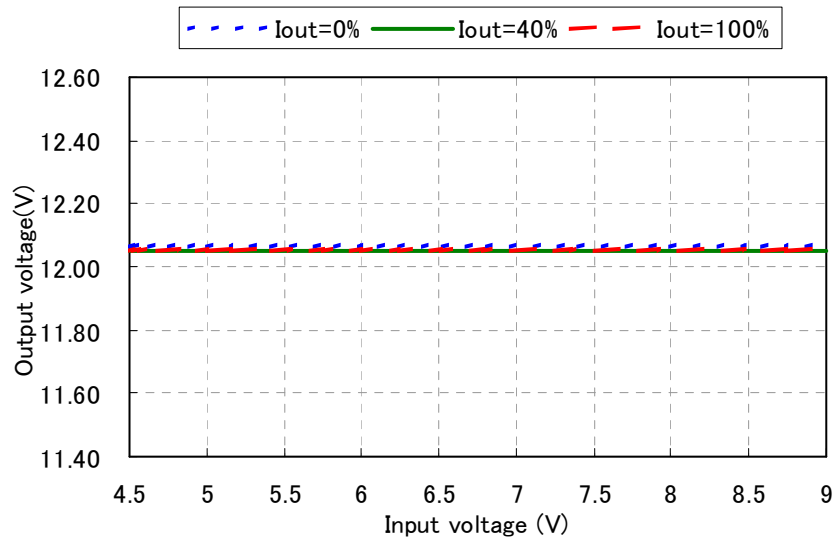
TRSC-1505-2

2/ 9

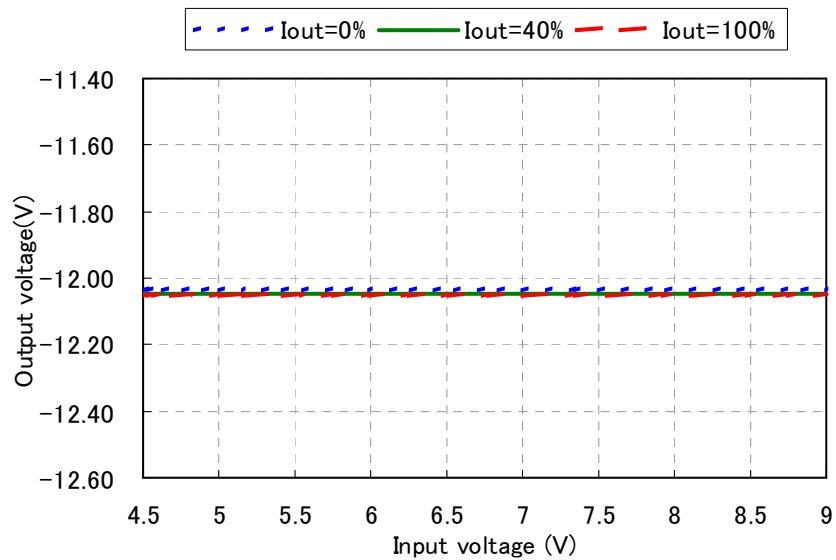
## 2. Line regulation

Condition Ta : 25°C

Vout=+12V



Vout=-12V



Product name or model, title

DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E

TDK CORPORATION

Name of drawing

Drawing No.

PAGE

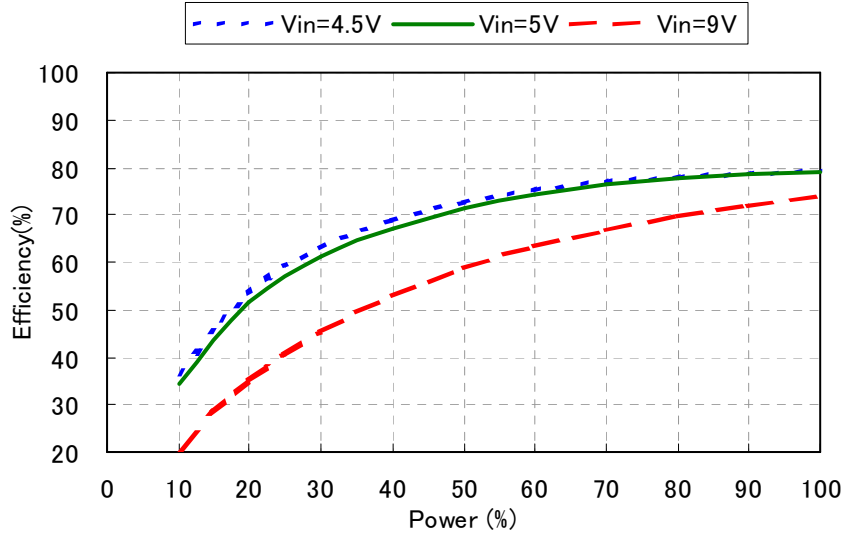
Evaluation data

TRSC-1505-2

3/9

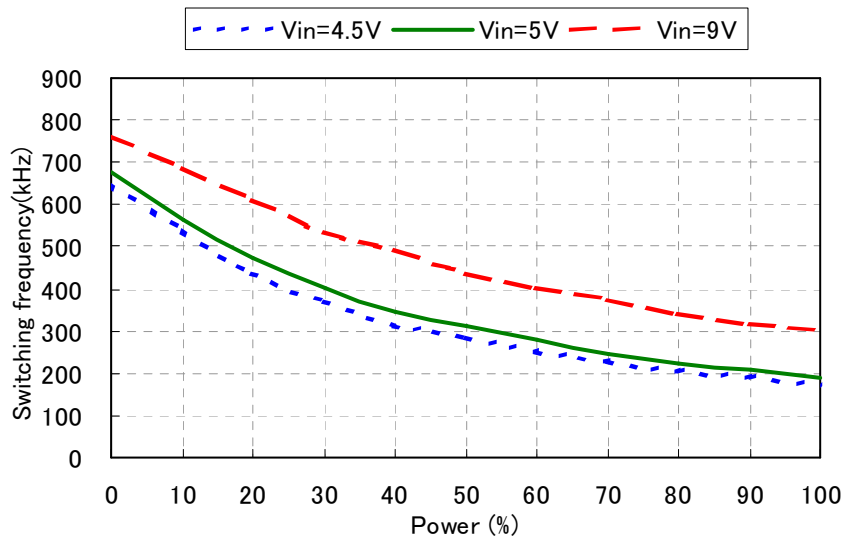
### 3. Efficiency

Condition Ta : 25°C



### 4. Switching frequency vs. output power

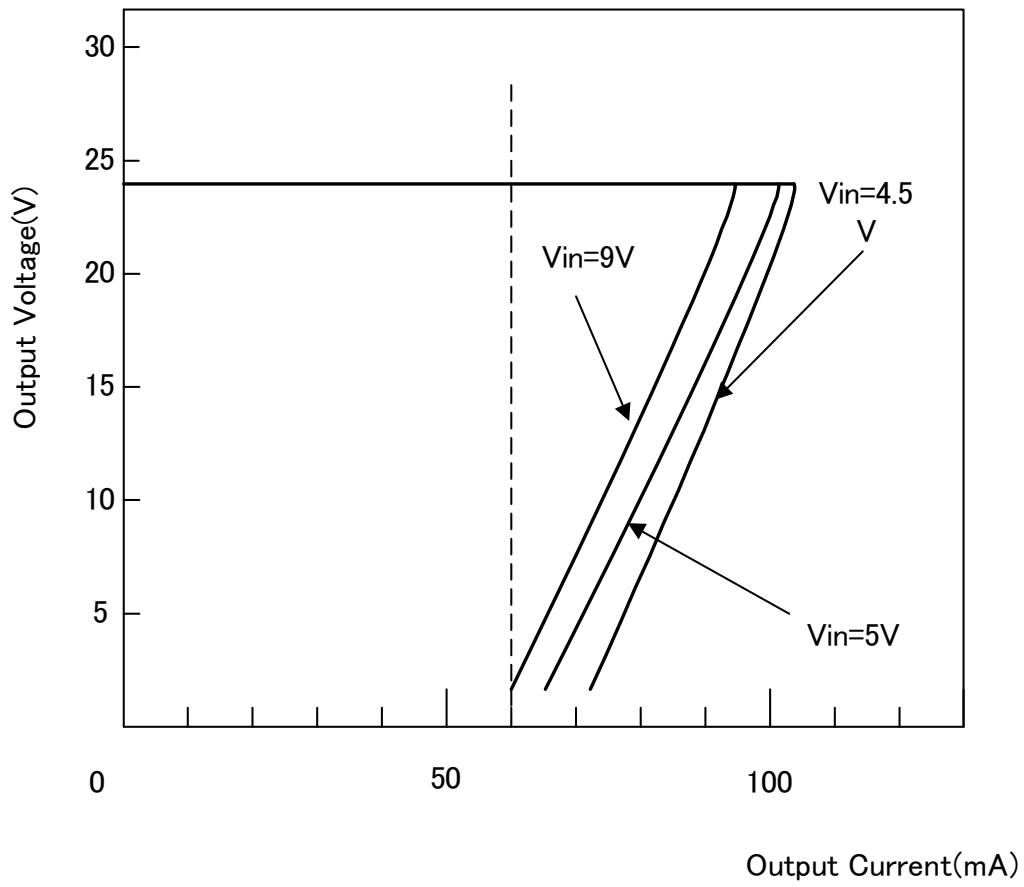
Condition Ta : 25°C



Product name or model, title		
DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E		
TDK CORPORATION	Name of drawing	Drawing No.
	Evaluation data	TRSC-1505-2
		PAGE
		4/ 9

## 5. Over current protection characteristics

Condition Ta : 25°C



Product name or model, title

DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E

TDK CORPORATION

Name of drawing

Drawing No.

PAGE

Evaluation data

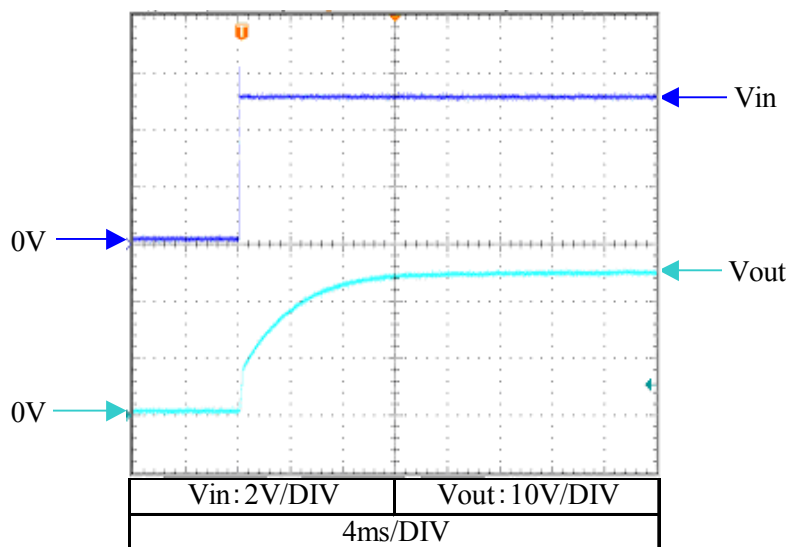
TRSC-1505-2

5/ 9

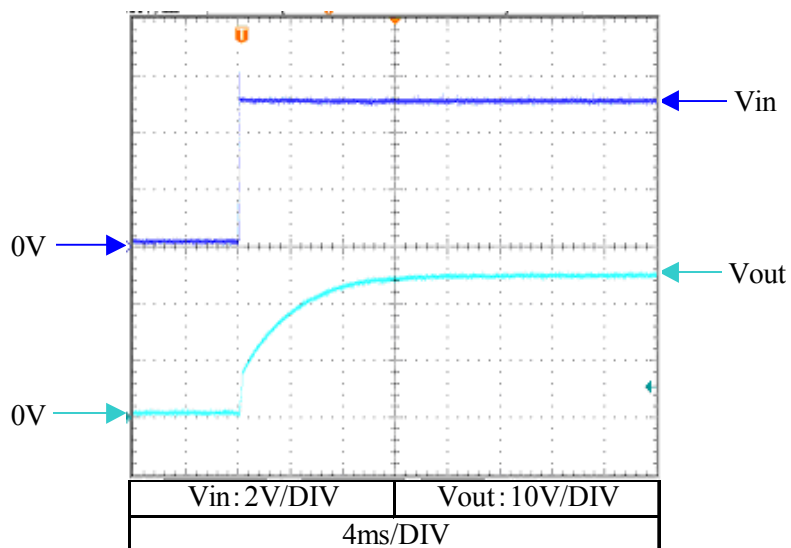
## 6. Output rise characteristics

Condition       $V_{in}$  : 5V  
                    $T_a$  : 25°C

$I_{out}$  : 0%



$I_{out}$  : 100%



Product name or model, title

DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E

TDK CORPORATION

Name of drawing

Drawing No.

PAGE

Evaluation data

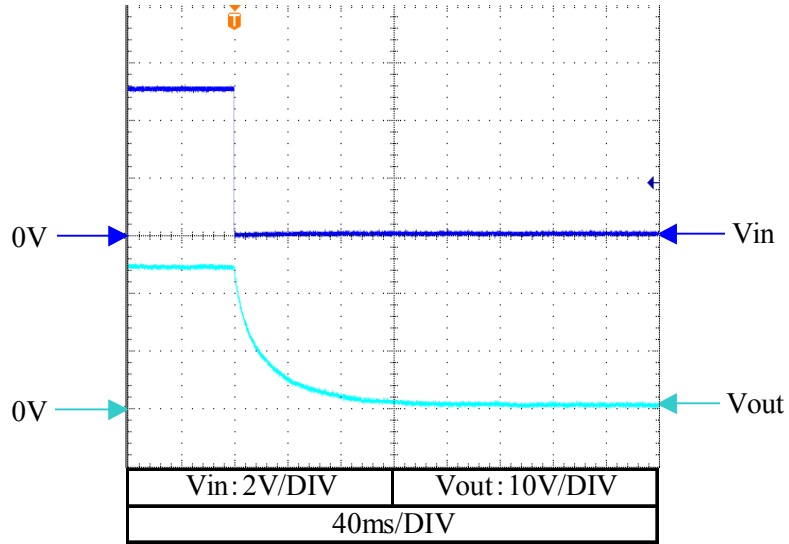
TRSC-1505-2

6/9

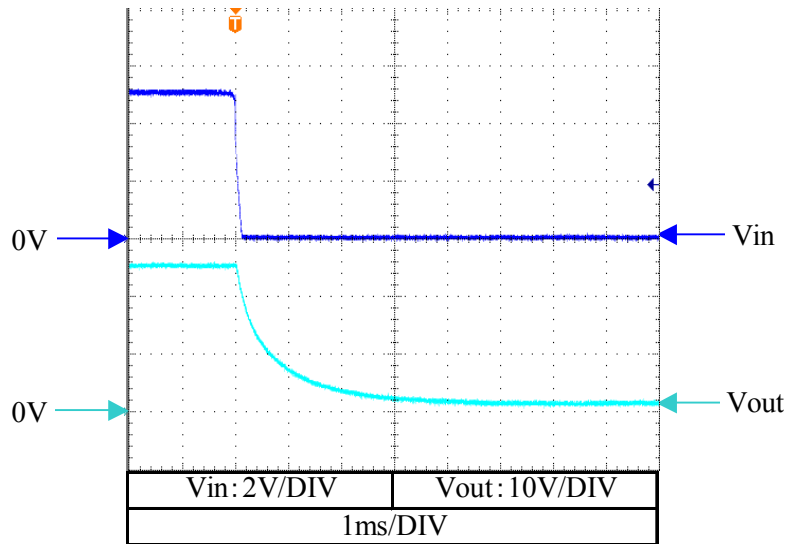
# 7. Output fall characteristics

Condition Vin : 5V  
Ta : 25°C

Iout : 0%



Iout : 100%



Product name or model, title

DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E

TDK CORPORATION

Name of drawing

Drawing No.

PAGE

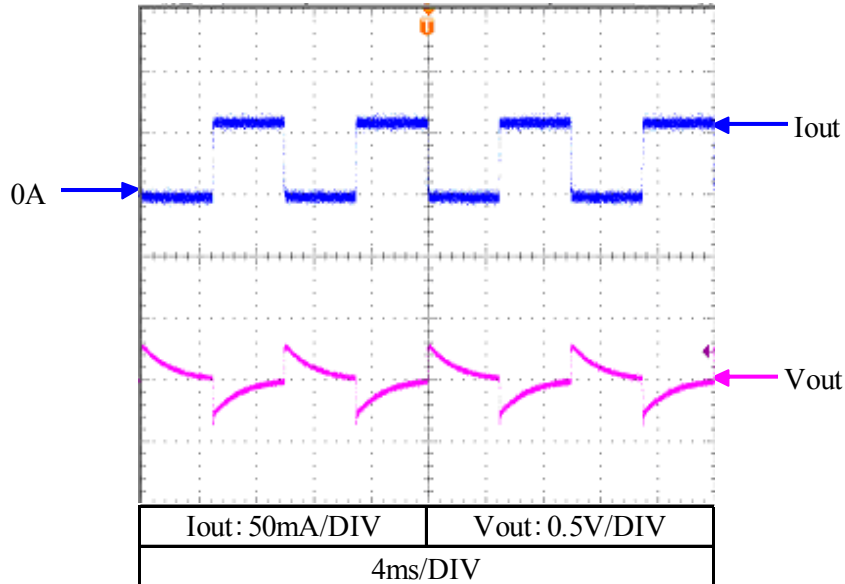
Evaluation data

TRSC-1505-2

7/ 9

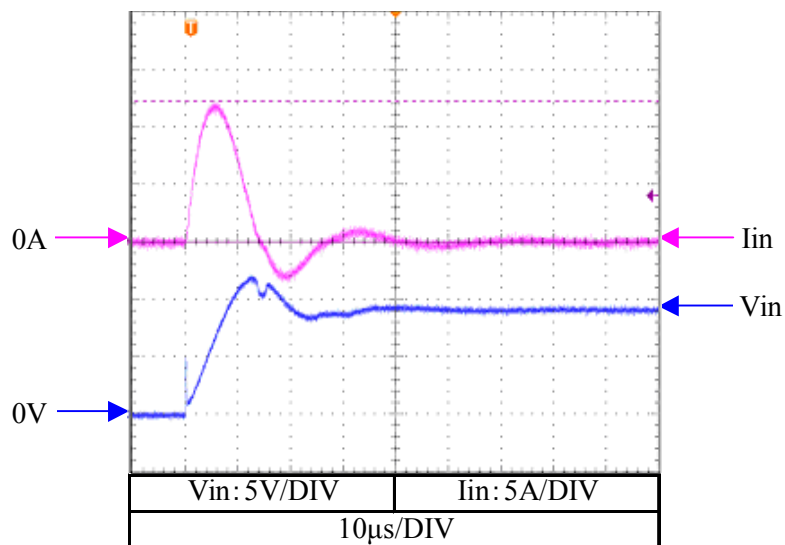
## 8. Dynamic load response characteristics

Condition  
 $V_{in}$  : 5V  
 $V_{out}$  :  $\pm 12V$   
 $I_{out}$  : 0%  $\leftrightarrow$  100%  
 $T_r=T_f$  : 100  $\mu s$   
 $f$  : 100Hz  
 $T_a$  : 25°C



## 9. Inrush current waveform

Condition  
 $V_{in}$  : 9V  
 $I_{out}$  : 100%  
 $T_a$  : 25°C



Product name or model, title

DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E

TDK CORPORATION

Name of drawing

Evaluation data

Drawing No.

TRSC-1505-2

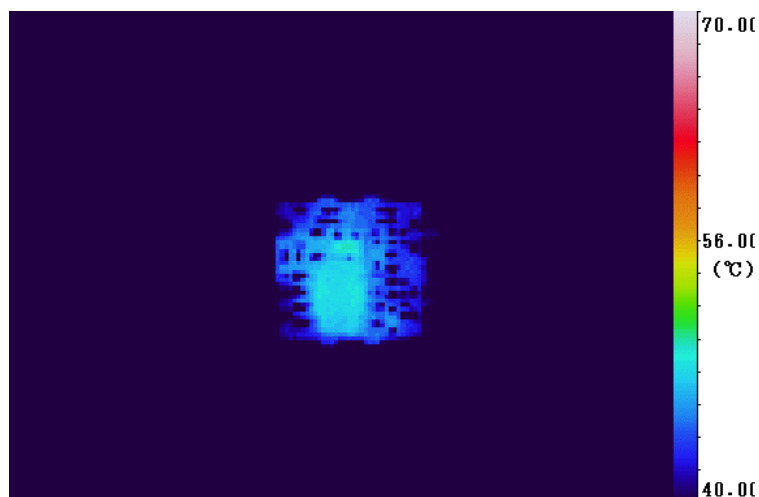
PAGE

8/ 9

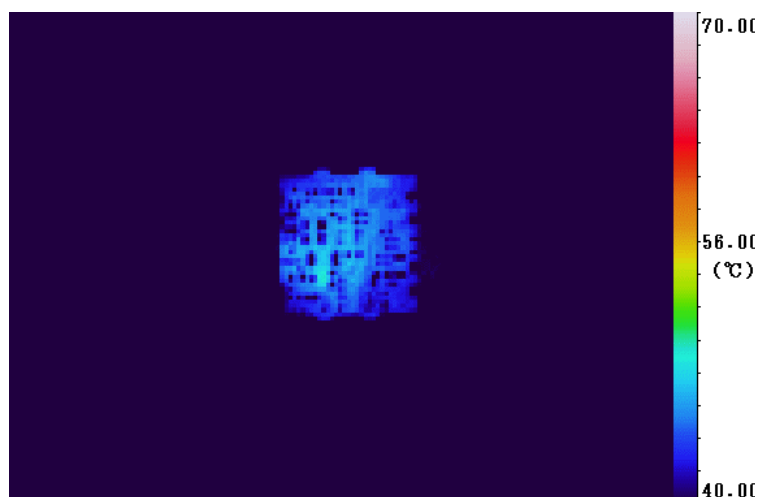
## 10. Temperature distribution

Condition      Vin : 5V  
                   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.

	Product name or model, title		
	DC-DC converter CC1R5-0512DF-E , CC1R5-0512DR-E		
TDK CORPORATION	Name of drawing	Drawing No.	PAGE
	Evaluation data	TRSC-1505-2	9/9