

i3A4W005A150V-001-R

EVALUATION DATA

型式データ

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使用記号 Terminology used

| | 定義 | Definition |
|-----------------------|------|---------------------|
| V _{in} | 入力電圧 | Input voltage |
| V _o | 出力電圧 | Output voltage |
| V _{rc} | RC電圧 | RC voltage |
| I _{in} | 入力電流 | Input current |
| I _o | 出力電流 | Output current |
| T _a | 周囲温度 | Ambient temperature |
| f | 周波数 | Frequency |

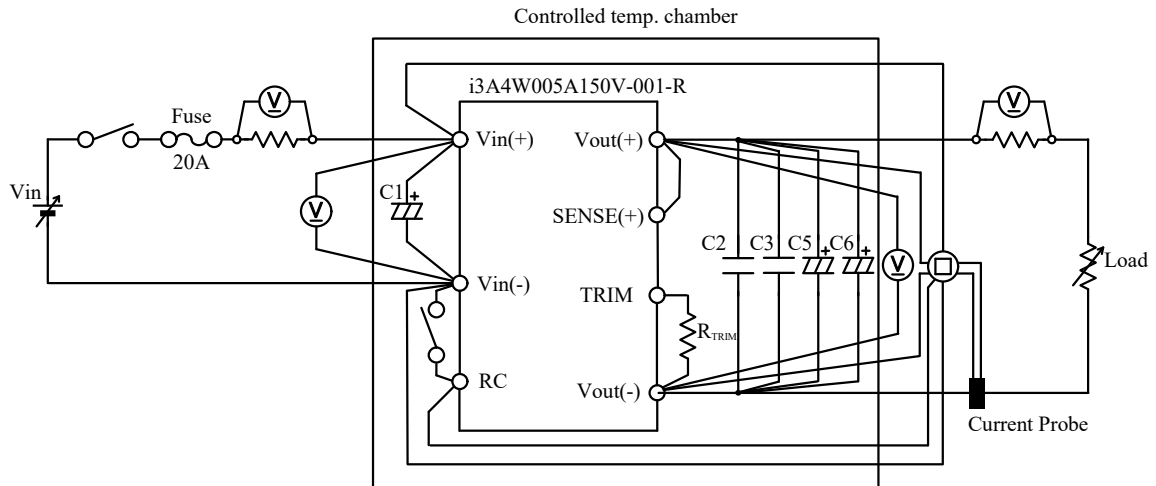
※ 当社測定条件における結果であり、参考値としてお考え願います。
Test results are reference data based on our measurement condition.

1. 測定方法 Evaluation Method

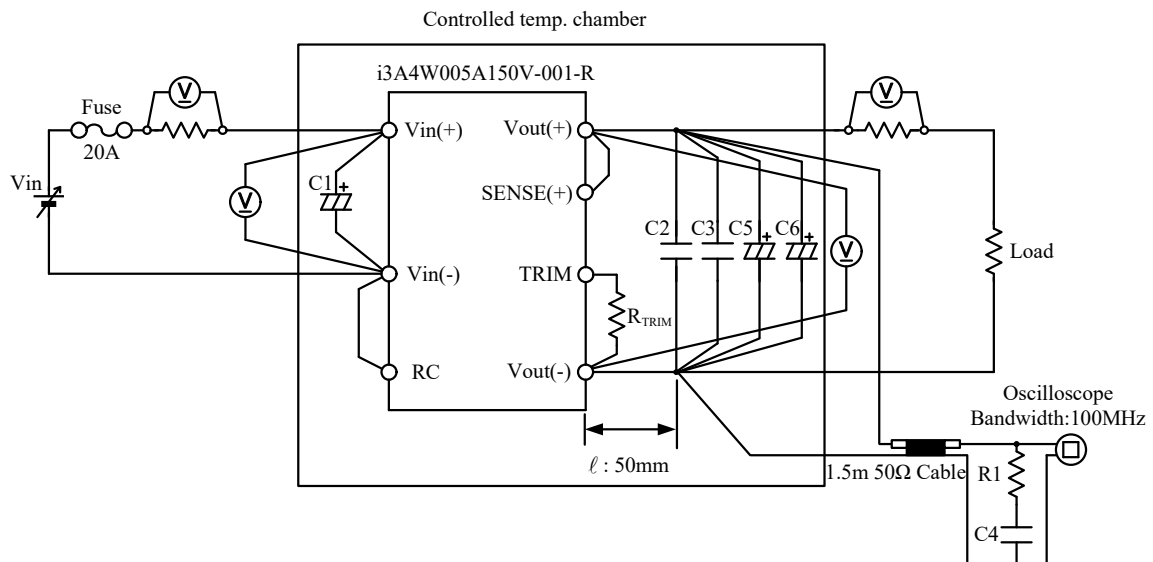
1-1. 測定回路 Measurement Circuits

(1) 静特性、待機電力特性、通電ドリフト特性、その他特性

Steady state, Standby power, Warm up voltage drift and Other characteristics



(2) 出力リップル、ノイズ電圧波形 Output ripple and noise voltage and waveform



- | | |
|------------------|------------------------|
| C1 : 120 μ F | Electrolytic Capacitor |
| C2 : 22 μ F | Ceramic Capacitor |
| C3 : 1000pF | Ceramic Capacitor |
| C4 : 4700pF | Ceramic Capacitor |
| R1 : 50 Ω | |
| C5 : 100 μ F | Electrolytic Capacitor |
| C6 : 100 μ F | Electrolytic Capacitor |

1-2. 使用測定機器 List of equipment used

| | EQUIPMENT USED | MANUFACTURER | MODEL NO. |
|---|------------------------------|-----------------|-----------|
| 1 | DIGITAL STORAGE OSCILLOSCOPE | YOKOGAWA ELECT. | DL1740EL |
| 2 | DIGITAL MULTIMETER | AGILENT | 34970A |
| 3 | CURRENT PROBE | YOKOGAWA ELECT. | 700937 |
| 4 | SHUNT RESISTER | YOKOGAWA ELECT. | 2215 |
| 5 | DYNAMIC DUMMY LOAD | TAKASAGO | FK-400L |
| 6 | DC POWER SUPPLY | TAKASAGO | EX-375L2 |
| 7 | CONTROLLED TEMP. CHAMBER | ESPEC | SU-641 |

2. 特性データ Characteristics

2-1 静特性 Steady state data

(1) 入力変動、負荷変動、温度変動 Regulation - line and load, Temperature drift

Vo=15V

1. Regulation - line and load

Condition Ta : 25 °C

| Io \ Vin | 19VDC | 24VDC | 36VDC | 48VDC | Line regulation | |
|-----------------|---------|---------|---------|---------|-----------------|--------|
| 0% | 14.978V | 14.985V | 14.989V | 14.995V | 17mV | 0.113% |
| 50% | 14.957V | 14.959V | 14.972V | 14.981V | 24mV | 0.160% |
| 100% | 14.952V | 14.954V | 14.955V | 14.959V | 7mV | 0.047% |
| Load regulation | 26mV | 31mV | 34mV | 36mV | | |
| | 0.173% | 0.207% | 0.227% | 0.240% | | |

2. Temperature drift

Conditions Vin : 24 VDC
Io : 100 %

| Ta | -40°C | 25°C | 85°C | Temperature stability | |
|----|---------|---------|---------|-----------------------|--------|
| Vo | 14.853V | 14.955V | 14.970V | 117mV | 0.780% |

Vo=24V

1. Regulation - line and load

Condition Ta : 25 °C

| Io \ Vin | 28VDC | 48VDC | Line regulation | |
|-----------------|---------|---------|-----------------|--------|
| 0% | 24.087V | 24.112V | 25mV | 0.104% |
| 50% | 24.056V | 24.103V | 47mV | 0.196% |
| 100% | 24.054V | 24.062V | 8mV | 0.033% |
| Load regulation | 33mV | 50mV | | |
| | 0.138% | 0.208% | | |

2. Temperature drift

Conditions Vin : 28 VDC
Io : 100 %

| Ta | -40°C | 25°C | 85°C | Temperature stability | |
|----|---------|---------|---------|-----------------------|--------|
| Vo | 23.805V | 24.062V | 24.075V | 270mV | 1.125% |

Vo=28V

1. Regulation - line and load

Condition Ta : 25 °C

| Io \ Vin | 36VDC | 48VDC | Line regulation | |
|-----------------|---------|---------|-----------------|--------|
| 0% | 28.040V | 28.062V | 22mV | 0.079% |
| 50% | 28.003V | 28.048V | 45mV | 0.161% |
| 100% | 27.990V | 28.000V | 10mV | 0.036% |
| Load regulation | 50mV | 62mV | | |
| | 0.179% | 0.221% | | |

2. Temperature drift

Conditions Vin : 36 VDC
Io : 100 %

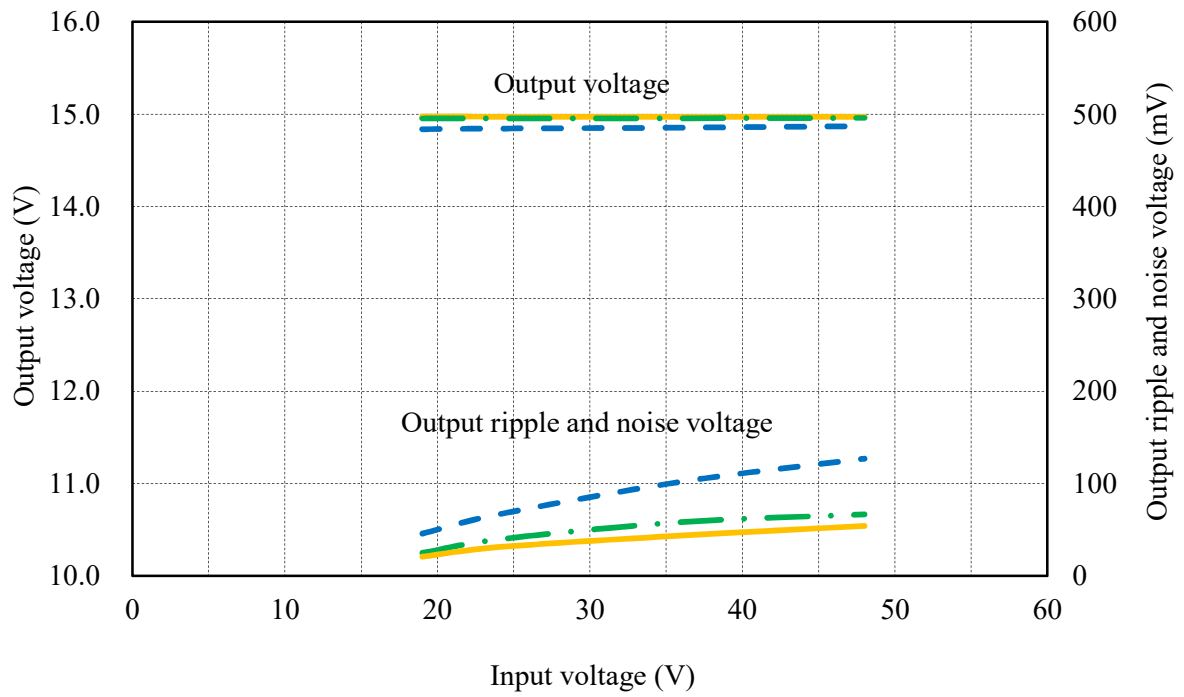
| Ta | -40°C | 25°C | 85°C | Temperature stability | |
|----|---------|---------|---------|-----------------------|--------|
| Vo | 27.772V | 27.990V | 28.088V | 316mV | 1.129% |

(2) 出力電圧・出力リップルノイズ電圧 対 入力電圧

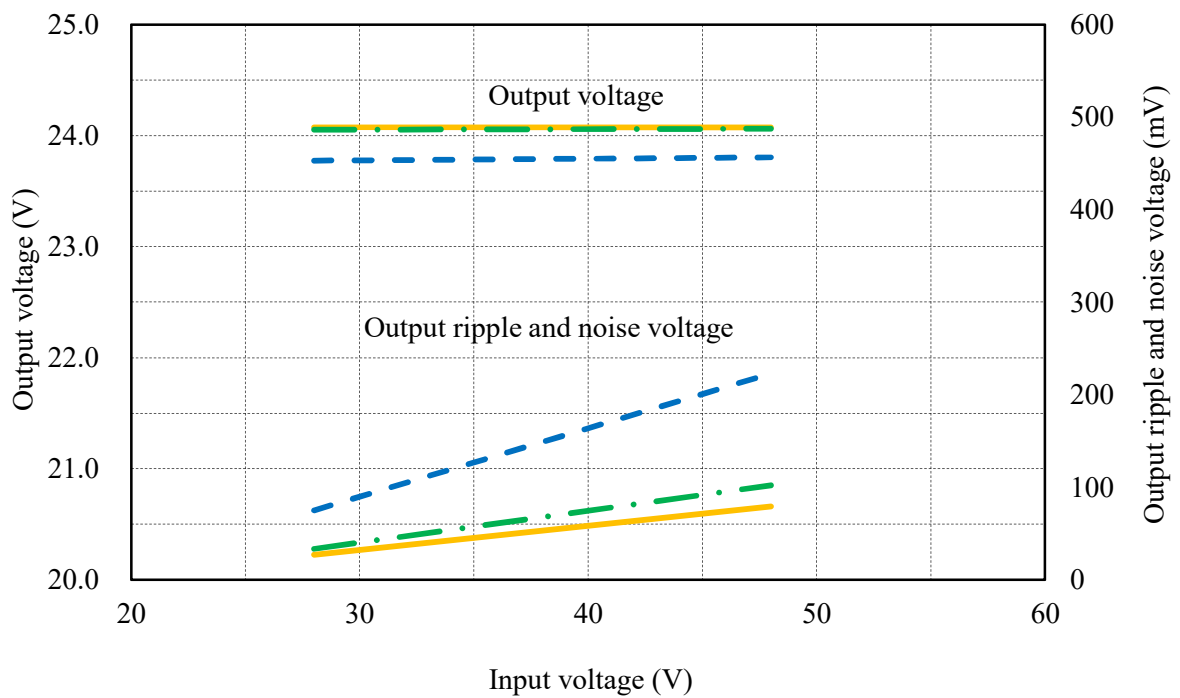
Output voltage and Output ripple and noise voltage vs. Input voltage

Conditions Io : 100 %
 Ta : -40 °C ---
 : 25 °C - · -
 : 85 °C —

Vo=15V



Vo=24V

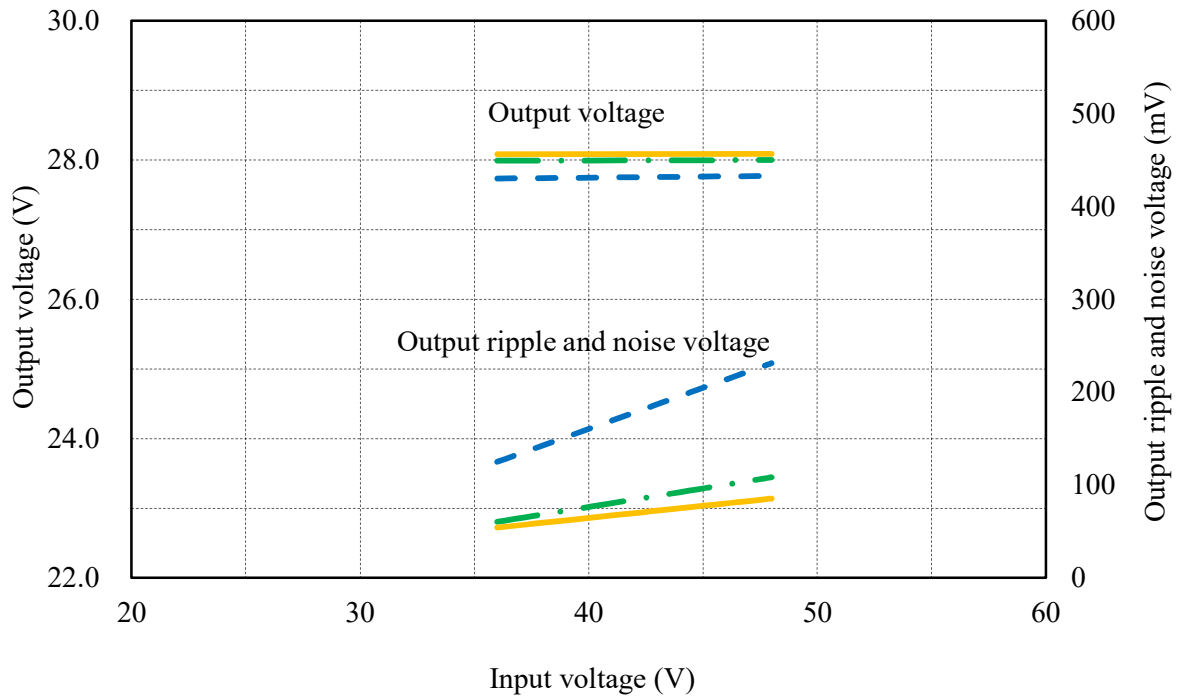


(2) 出力電圧・出力リップルノイズ電圧 対 入力電圧

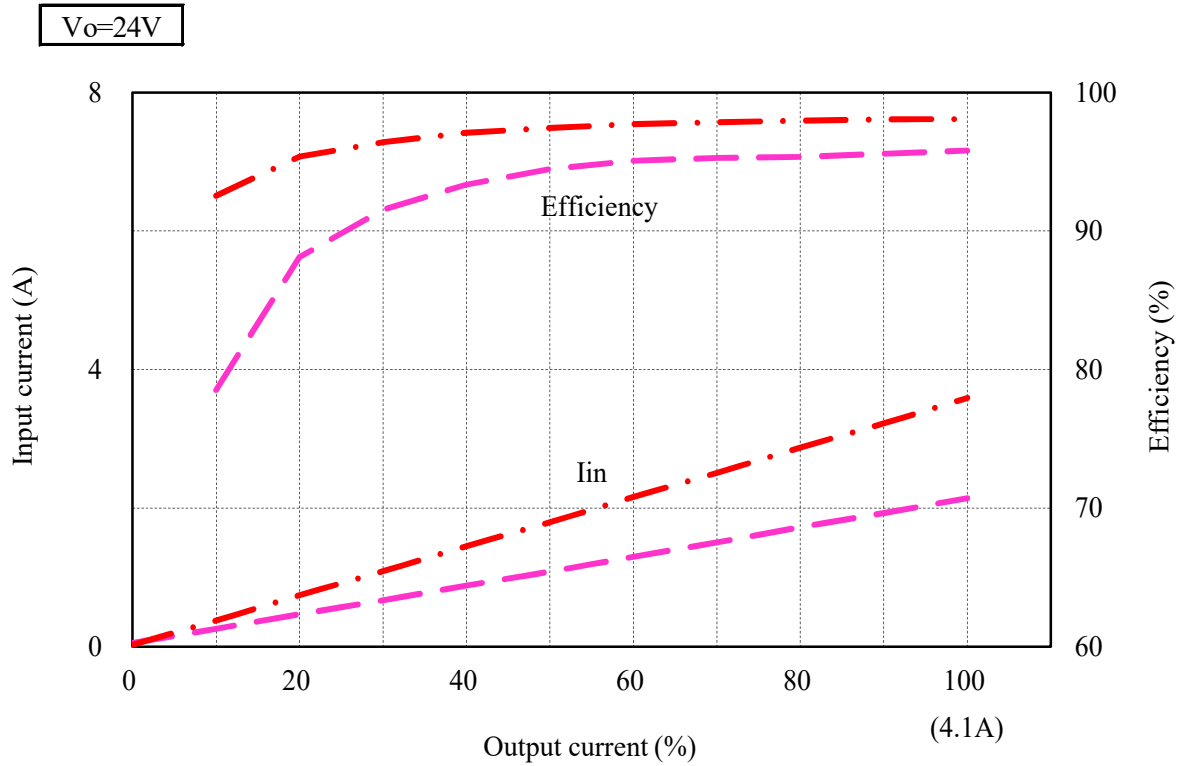
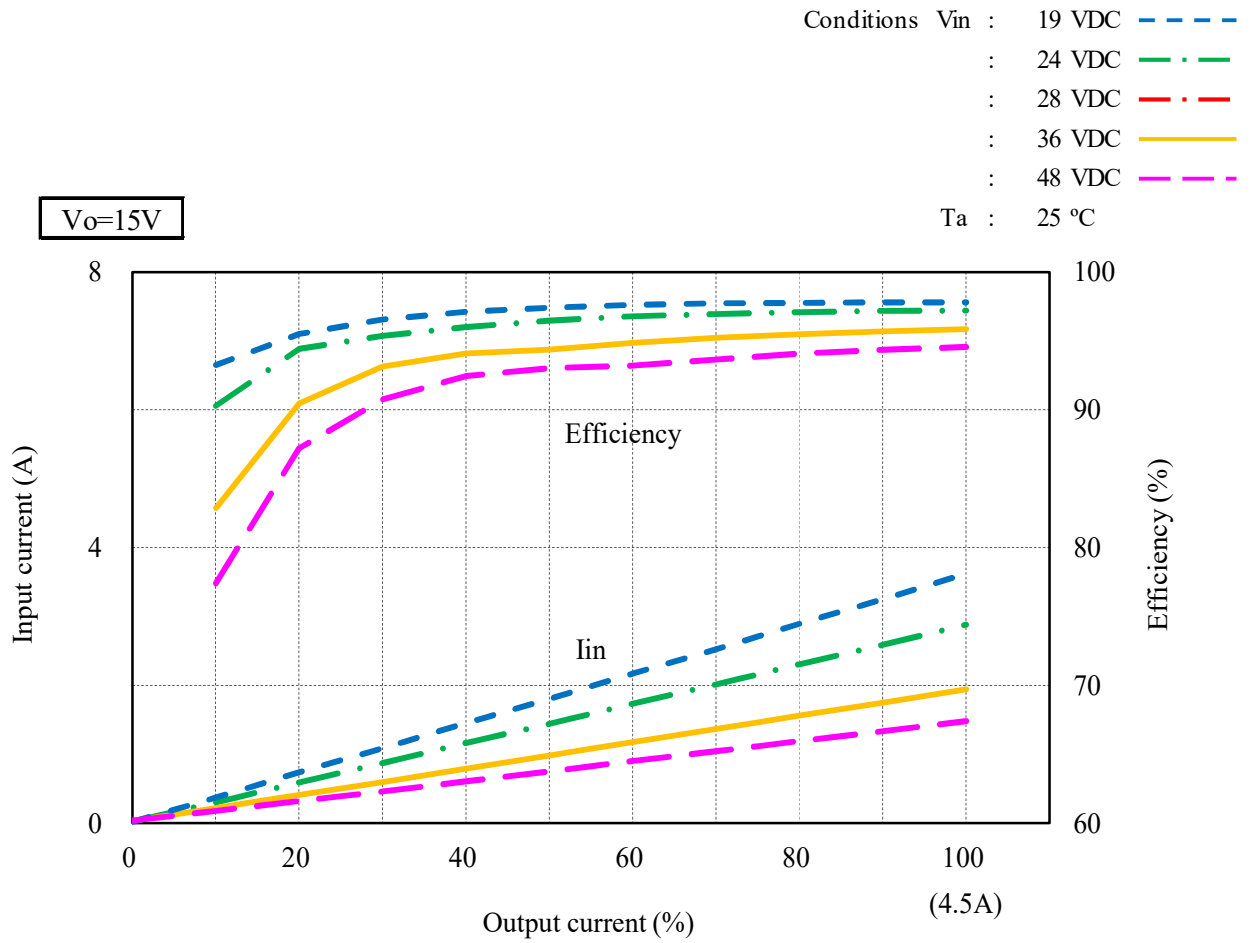
Output voltage and Output ripple and noise voltage vs. Input voltage

Conditions Io : 100 %
Ta : -40 °C ---
: 25 °C -.-
: 85 °C —

Vo=28V

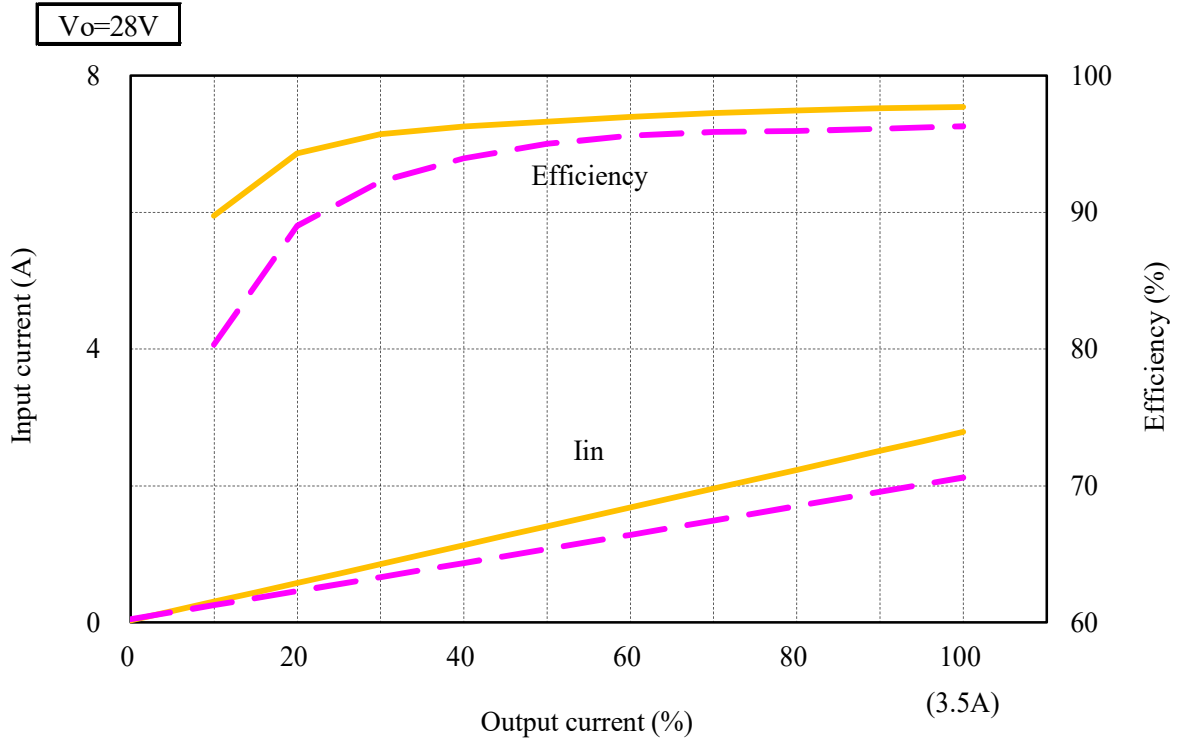


(3) 入力電流・効率 対 出力電流 Input current and Efficiency vs. Output current



(3) 入力電流・効率 対 出力電流 Input current and Efficiency vs. Output current

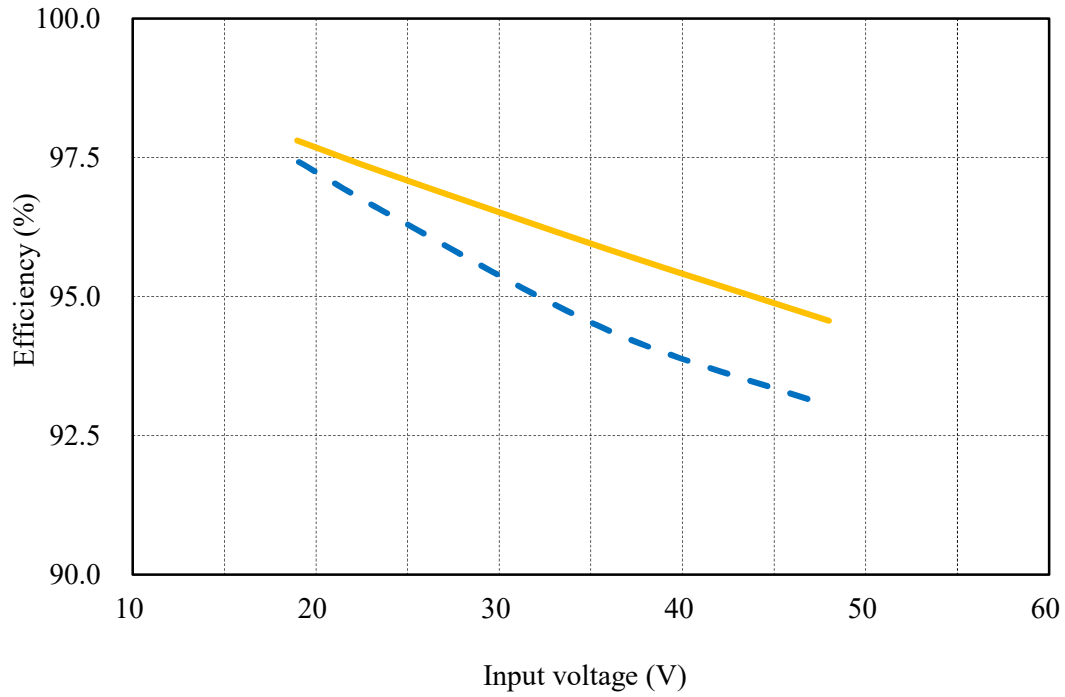
Conditions Vin : 36 VDC ———
 : 48 VDC - - - -
 Ta : 25 °C



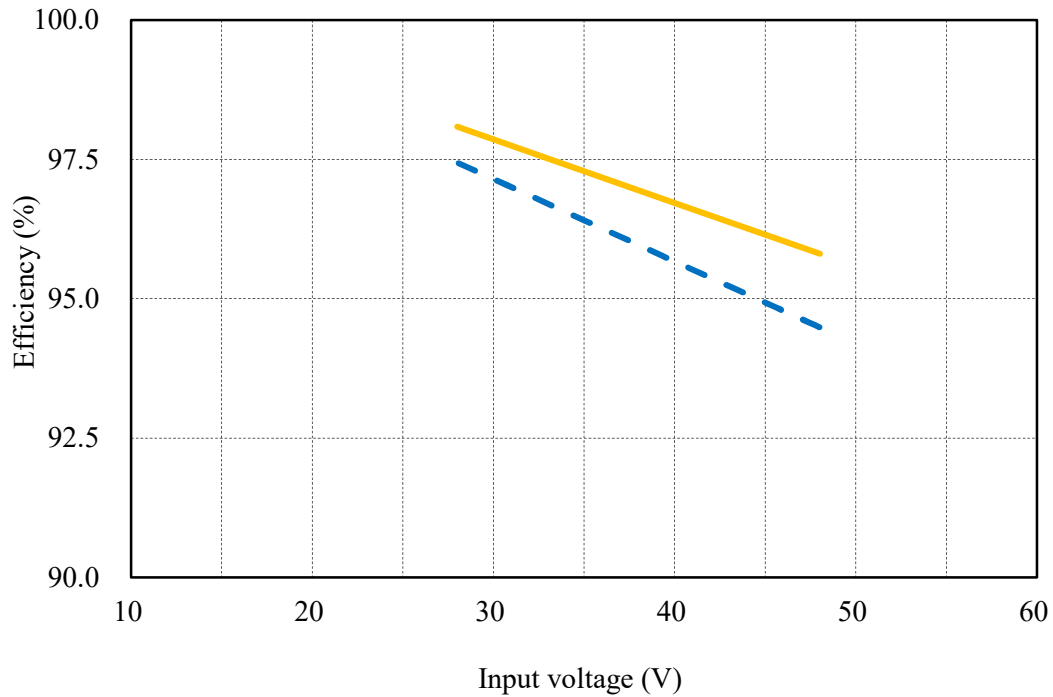
(4) 効率 対 入力電圧 Efficiency vs. Input voltage

Conditions I_o : 50 % - - - -
 : 100 % ————
 T_a : 25 °C

V_o=15V

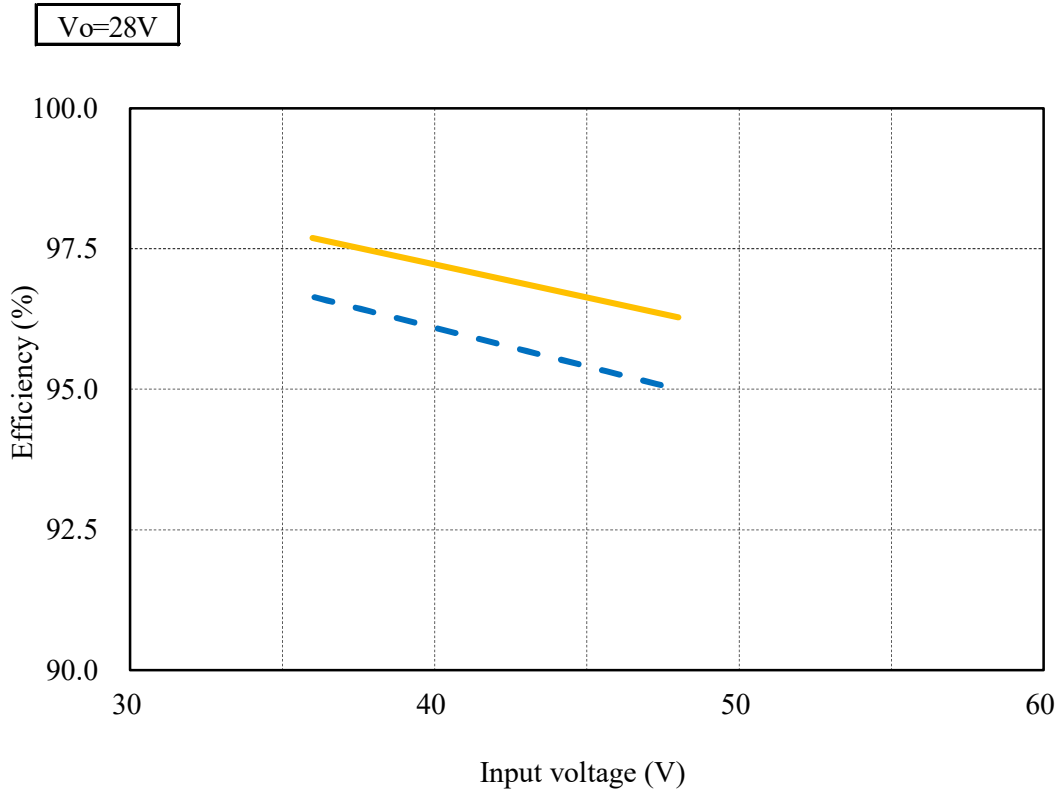


V_o=24V



(4) 効率 対 入力電圧 Efficiency vs. Input voltage

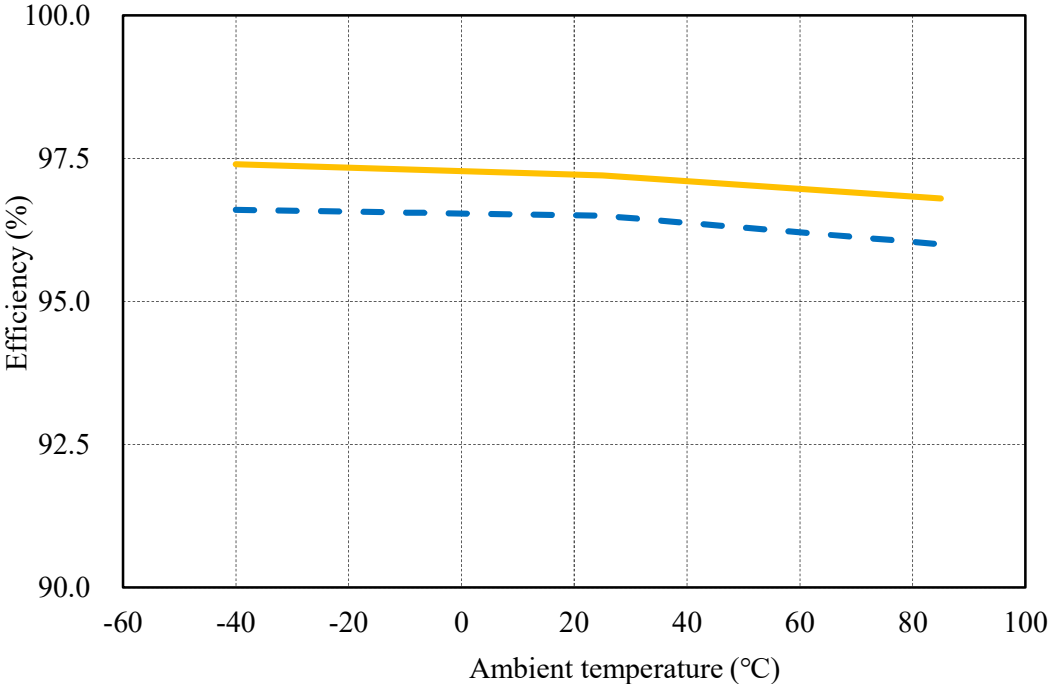
Conditions I_o : 50 % - - - -
 : 100 % —————
 T_a : 25 °C



(5) 効率 対 温度 Efficiency vs. Temperature

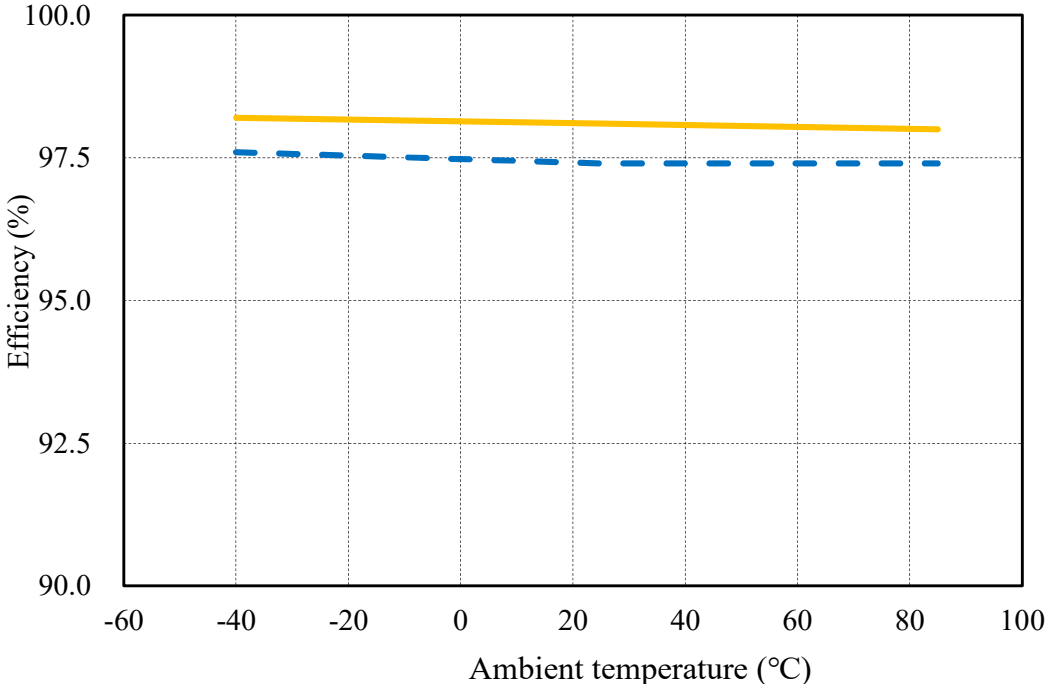
Conditions Vin : 24 V
Io : 50 %
: 100 %

Vo=15V



Vo=24V

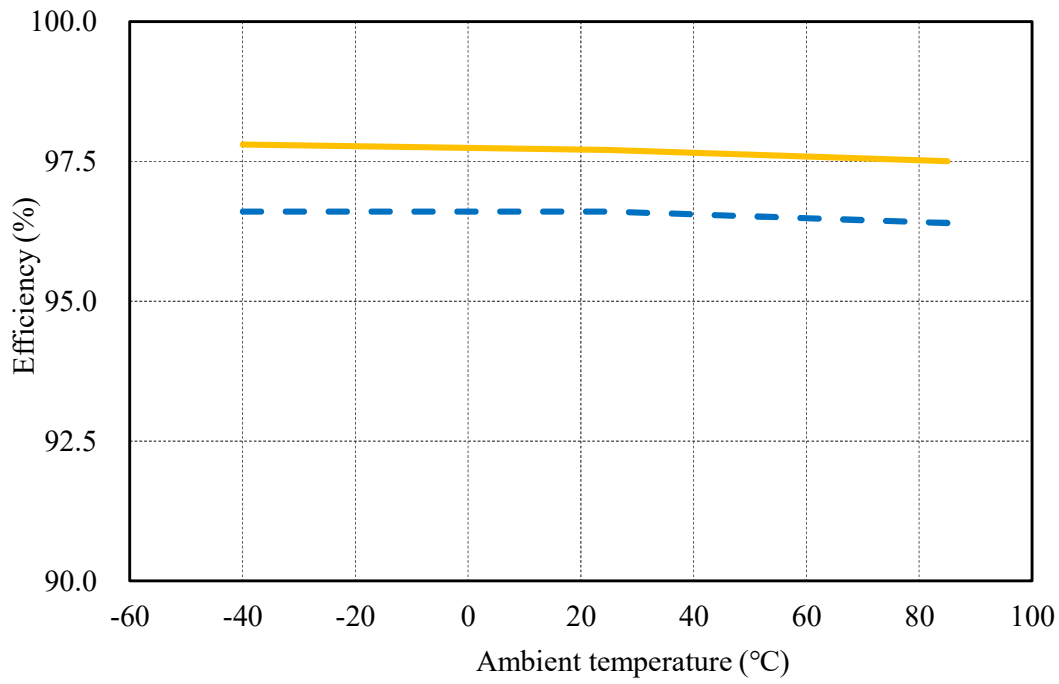
Conditions Vin : 28 V



(5) 效率 对 温度 Efficiency vs. Temperature

Conditions Vin : 36 V
Io : 50 % - - - -
 : 100 % —————

Vo=28V



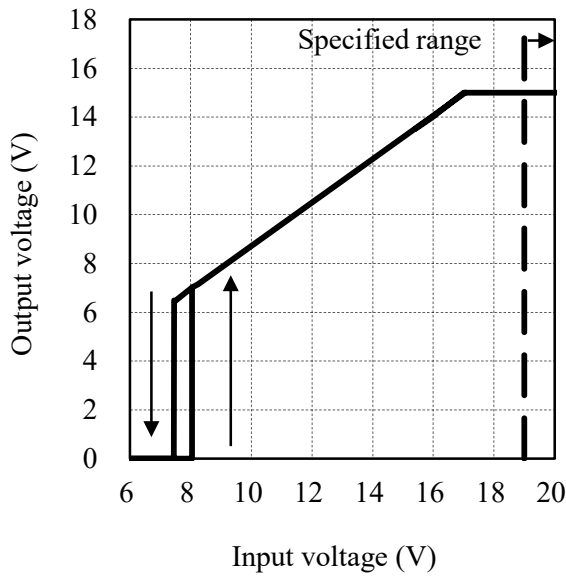
(6) 起動・遮断電圧特性 Start up and Drop out voltage characteristics

出力電圧 対 入力電圧

Output voltage vs. Input voltage

Conditions I_o : 100 %
 T_a : 25 °C

$V_o=15V$

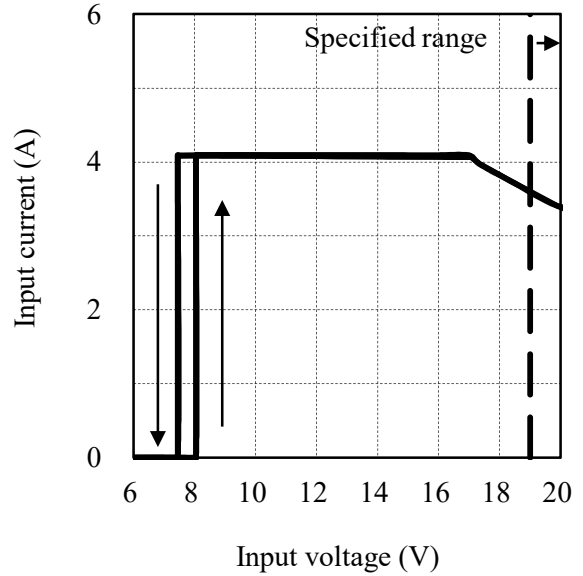


入力電流 対 入力電圧

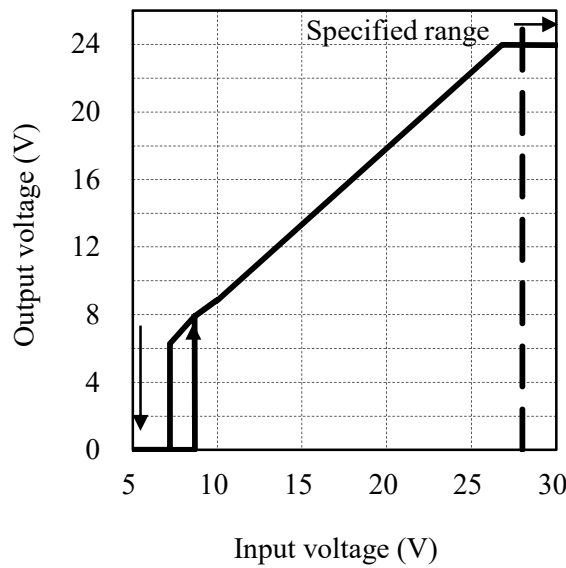
Input current vs. Input voltage

Conditions I_o : 100 %
 T_a : 25 °C

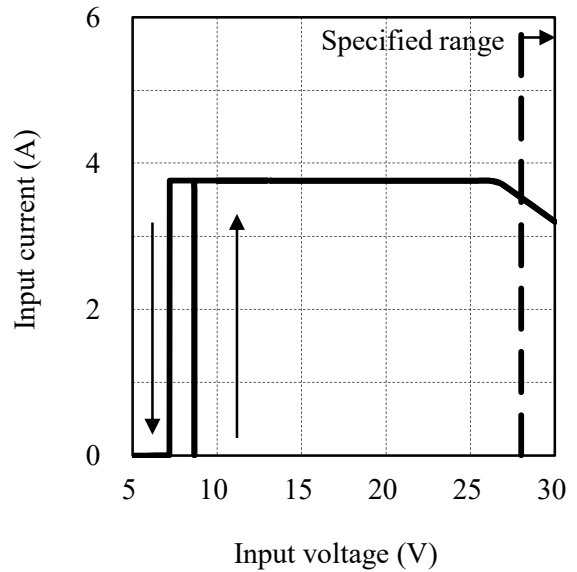
$V_o=15V$



$V_o=24V$



$V_o=24V$

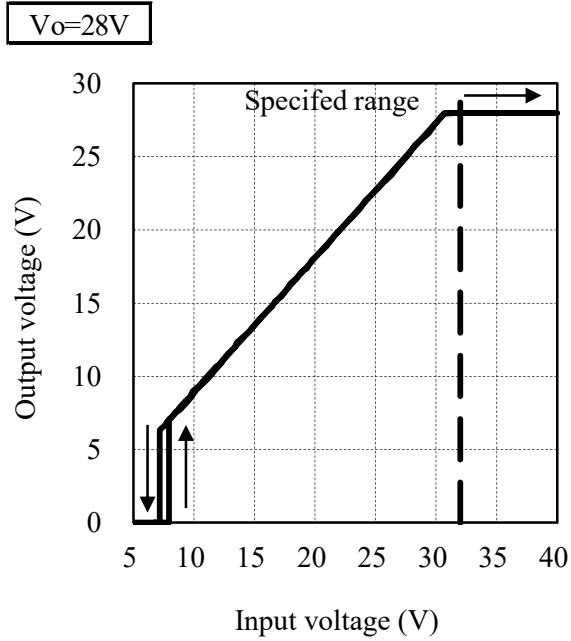


(6) 起動・遮断電圧特性 Start up and Drop out voltage characteristics

出力電圧 対 入力電圧

Output voltage vs. Input voltage

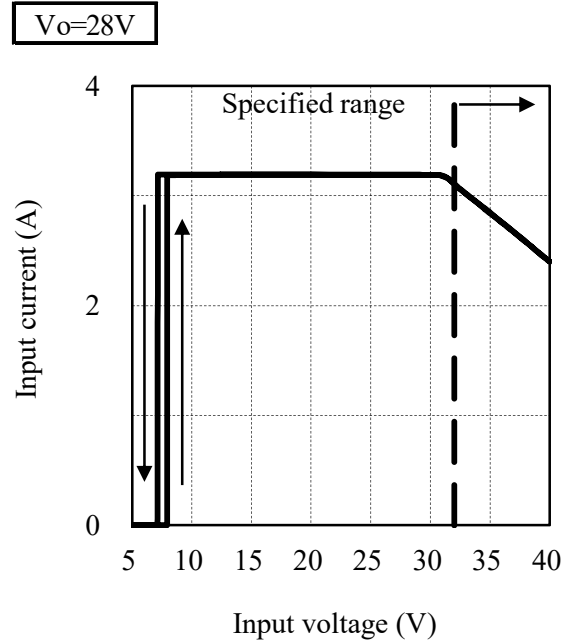
Conditions I_o : 100 %
 T_a : 25 °C



入力電流 対 入力電圧

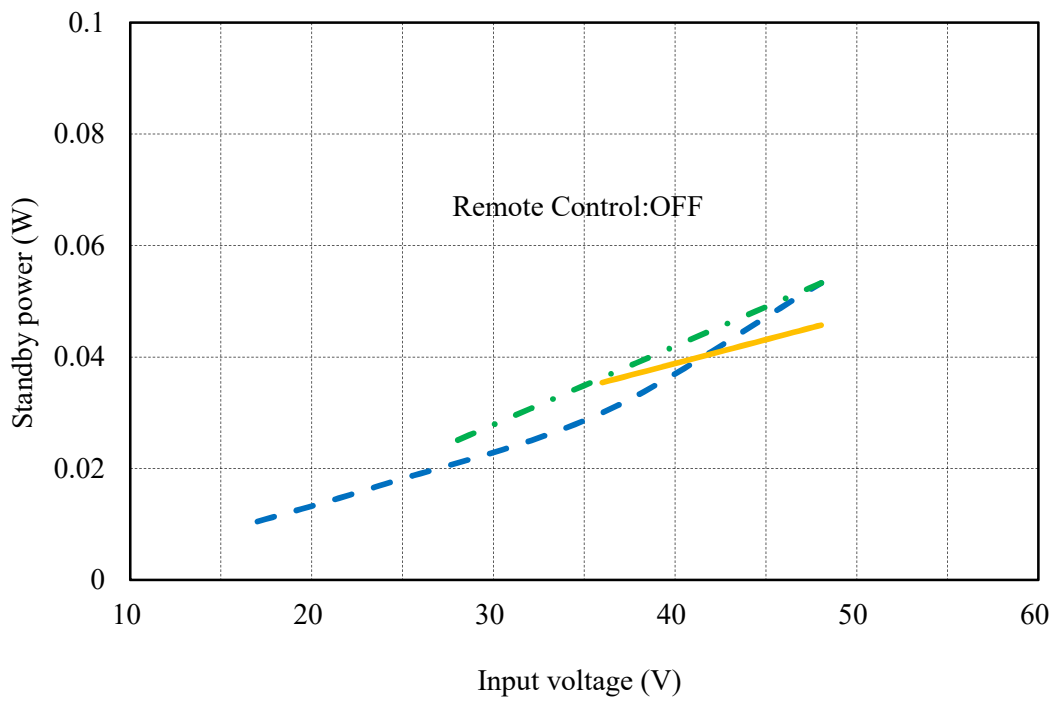
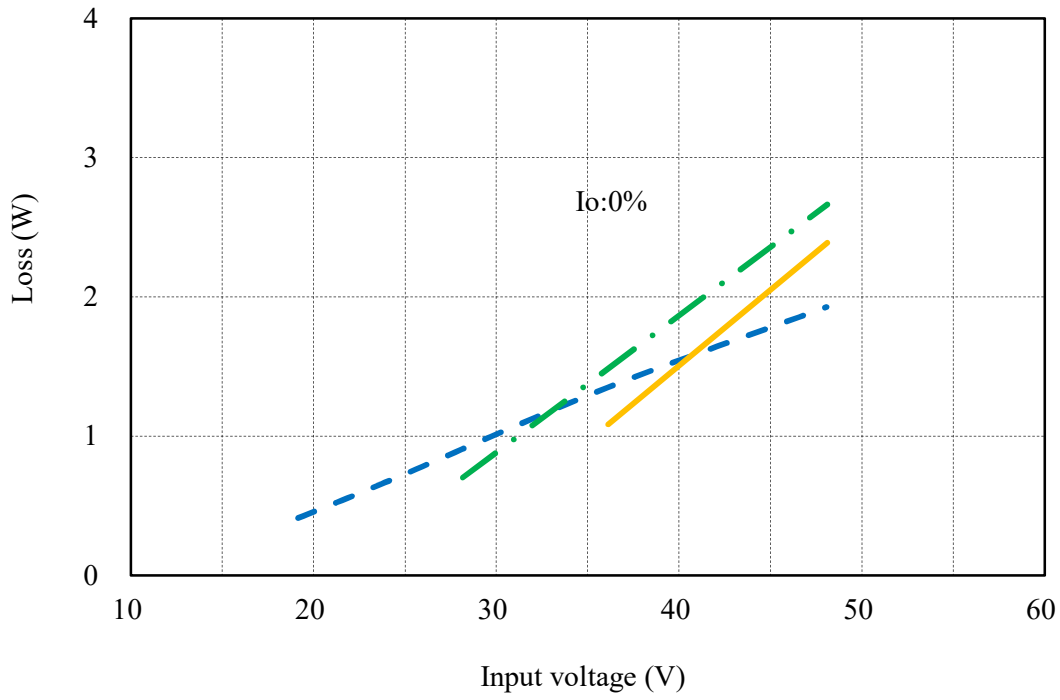
Input current vs. Input voltage

Conditions I_o : 100 %
 T_a : 25 °C



2-2. 待機電力特性 Standby power characteristics

Conditions Vo : 15 VDC - - -
 : 24 VDC - · -
 : 28 VDC ———
 Ta : 25 °C



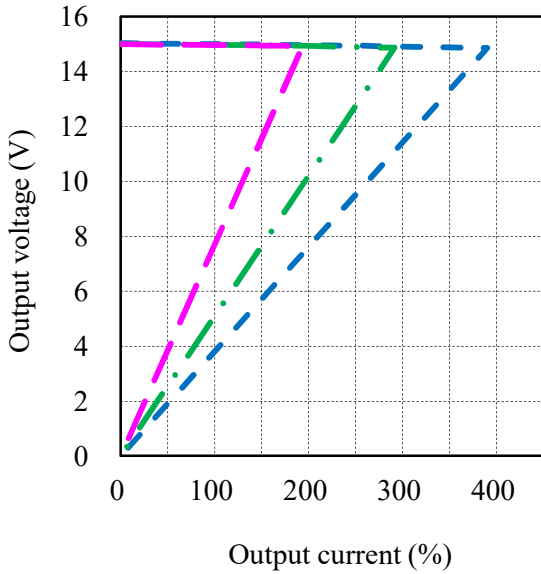
2-3. 過電流保護特性 Over current protection (OCP) characteristics

入力電圧依存性

Input voltage dependence

Conditions Vin : 19 VDC — — — —
 : 24 VDC - · - · - ·
 : 28 VDC - - - - -
 : 36 VDC —————
 : 48 VDC - - - - -
 Ta : 25 °C

Vo=15V

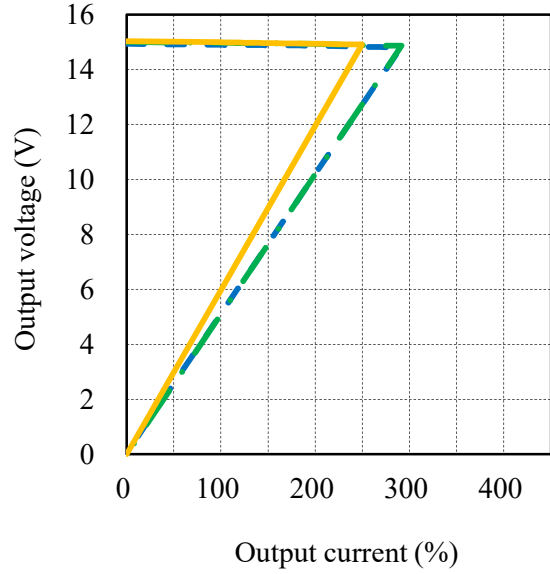


周囲温度依存性

Ambient temperature dependence

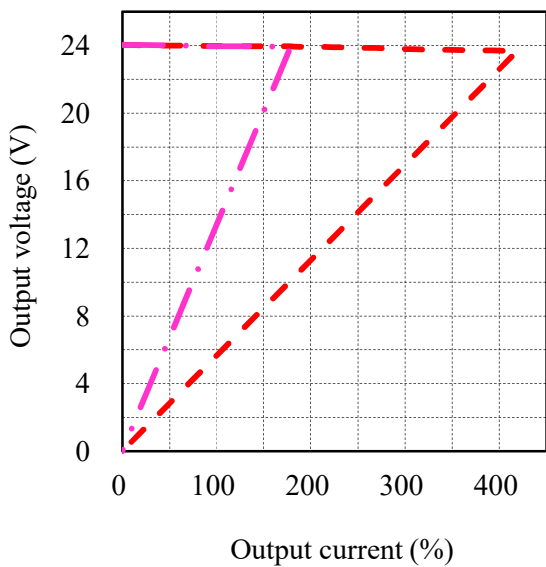
Conditions Vin : 24 VDC
 Ta : -40 °C — — — —
 : 25 °C - · - · - ·
 : 85 °C —————

Vo=15V

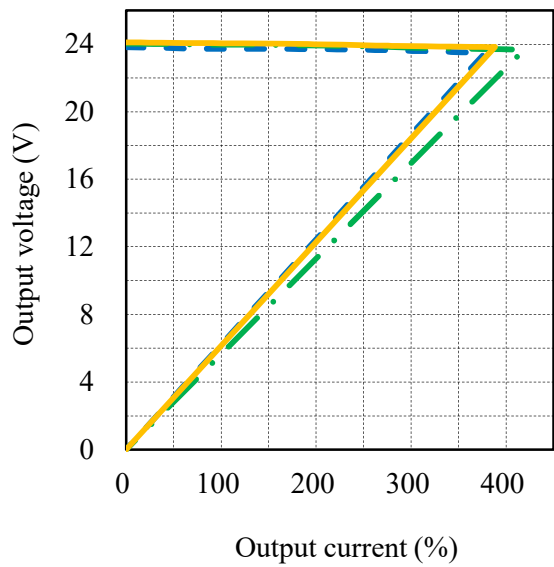


Conditions Vin : 28 VDC

Vo=24V



Vo=24V



2-3. 過電流保護特性 Over current protection (OCP) characteristics

入力電圧依存性

Input voltage dependence

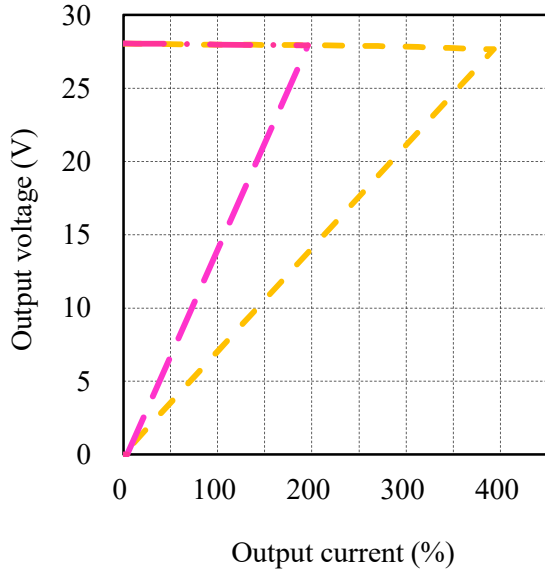
Conditions Vin : 36 VDC ———
 : 48 VDC - - - -
 Ta : 25 °C

周囲温度依存性

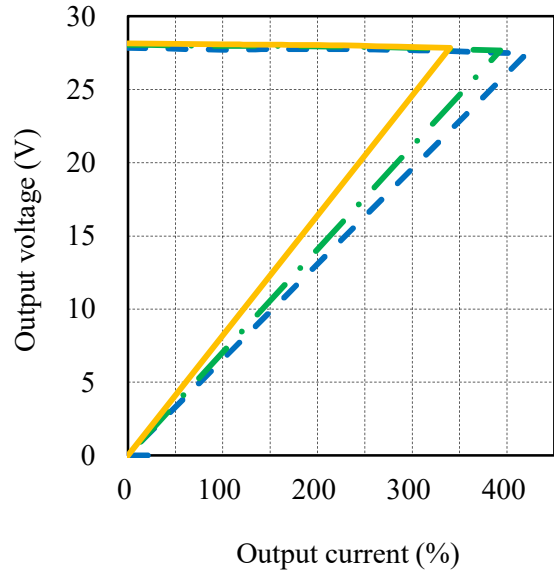
Ambient temperature dependence

Conditions Vin : 36 VDC
 Ta : -40 °C - - - -
 : 25 °C - · - · -
 : 85 °C ———

$V_o=28V$



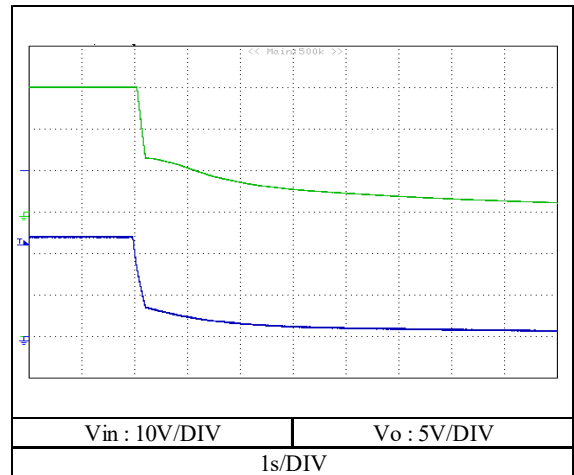
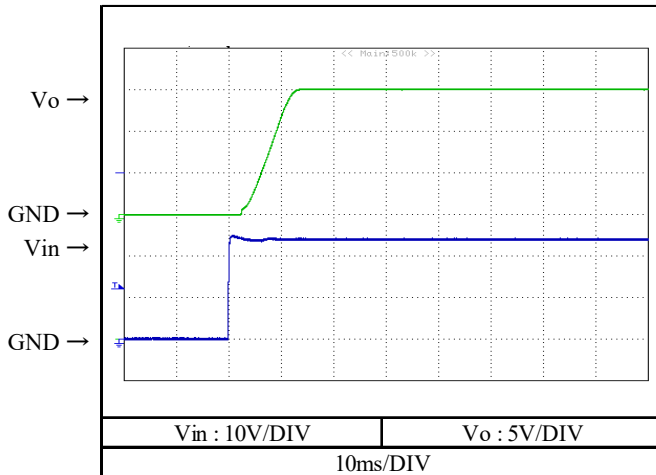
$V_o=28V$



2-4. 出力立ち上がり・立ち下がり特性 Output rise and fall characteristics

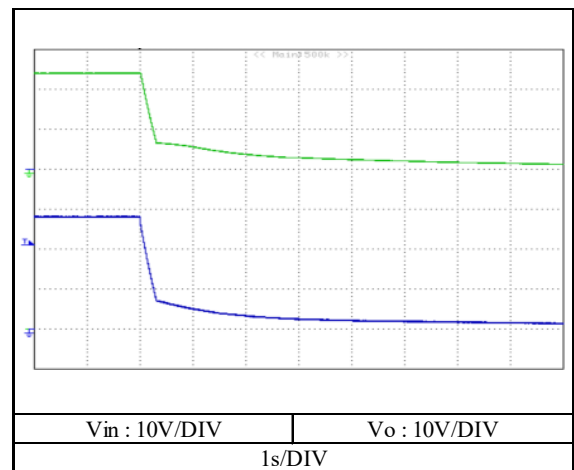
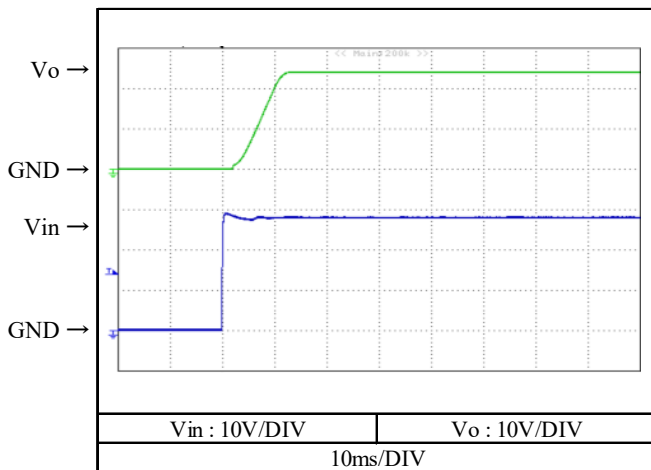
Conditions V_{in} : 24 VDC
 I_o : 0 %
 T_a : 25 °C

$V_o=15V$



Conditions V_{in} : 28 VDC
 I_o : 0 %
 T_a : 25 °C

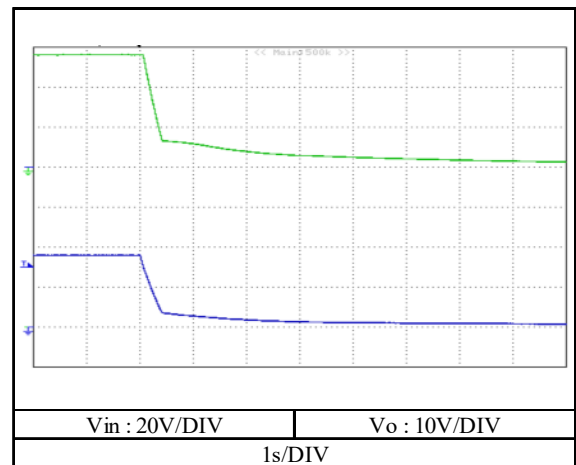
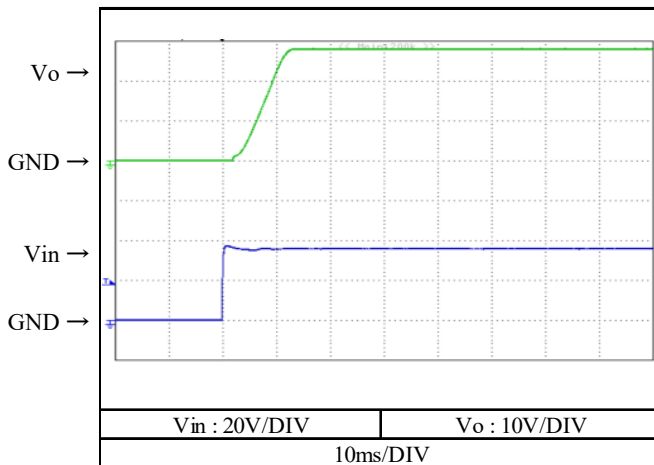
$V_o=24V$



2-4. 出力立ち上がり・立ち下がり特性 Output rise and fall characteristics

Conditions V_{in} : 36 VDC
 I_o : 0 %
 T_a : 25 °C

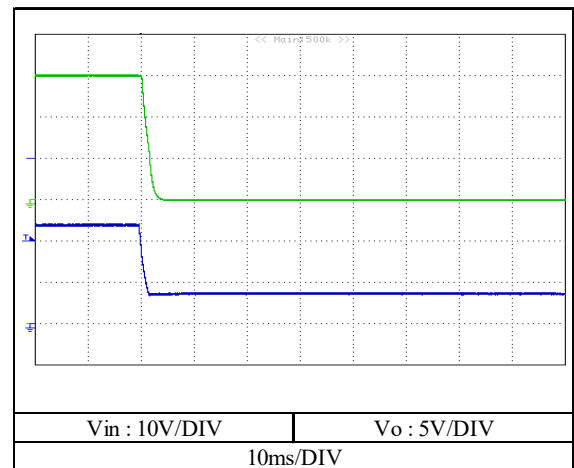
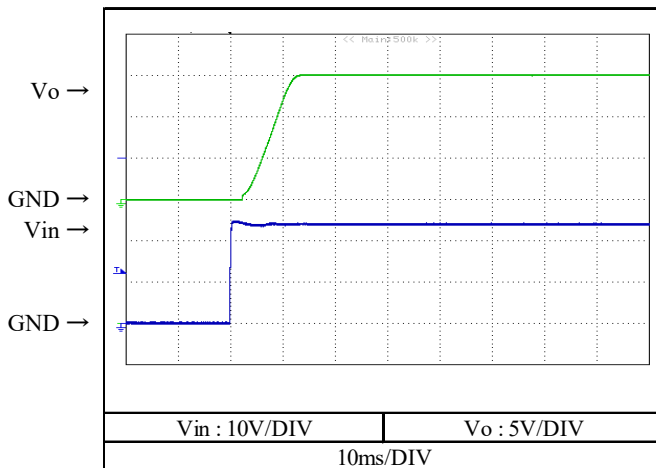
$V_o=28V$



2-4. 出力立ち上がり・立ち下がり特性 Output rise and fall characteristics

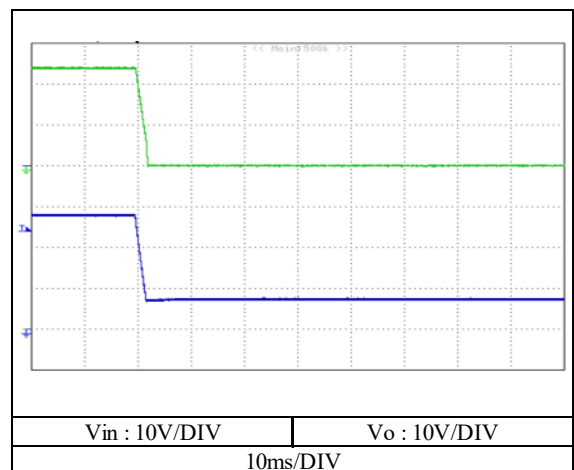
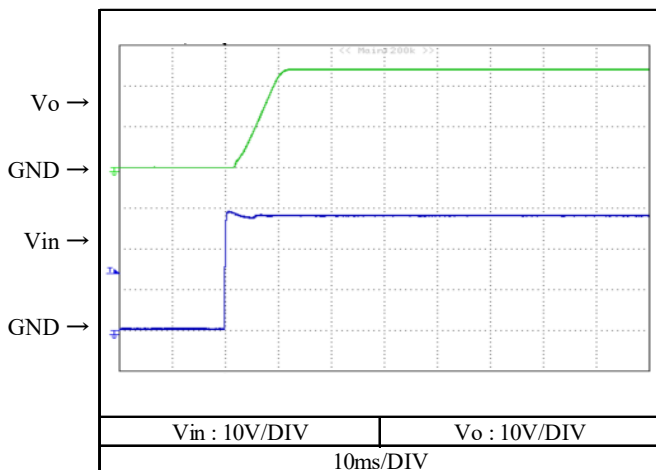
Conditions V_{in} : 24 VDC
 I_o : 100 %
 T_a : 25 °C

$V_o=15V$



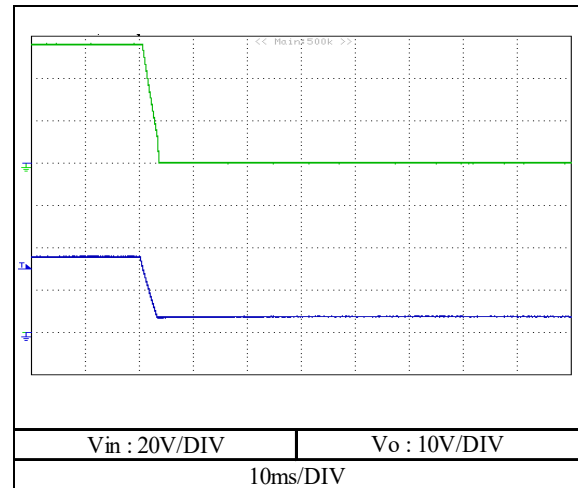
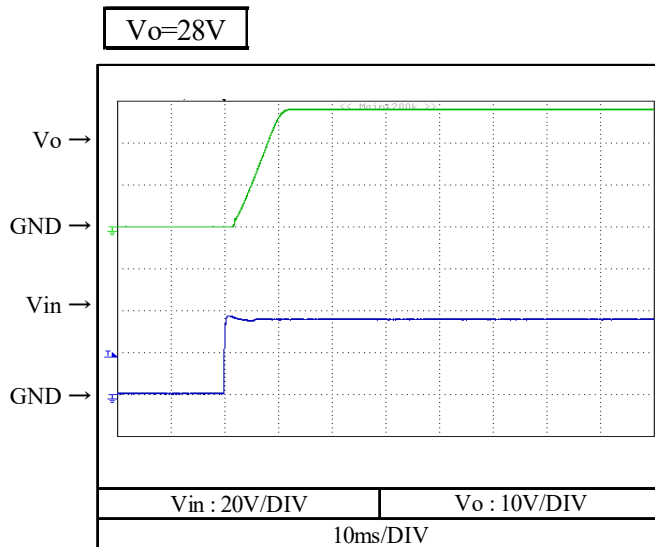
Conditions V_{in} : 28 VDC
 I_o : 100 %
 T_a : 25 °C

$V_o=24V$



2-4. 出力立ち上がり・立ち下がり特性 Output rise and fall characteristics

Conditions Vin : 36 VDC
Io : 100 %
Ta : 25 °C

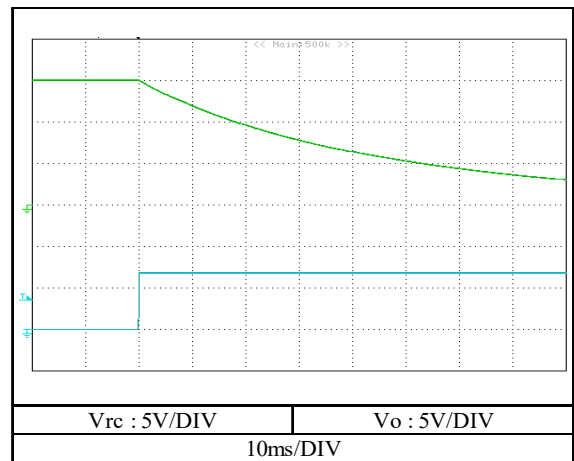
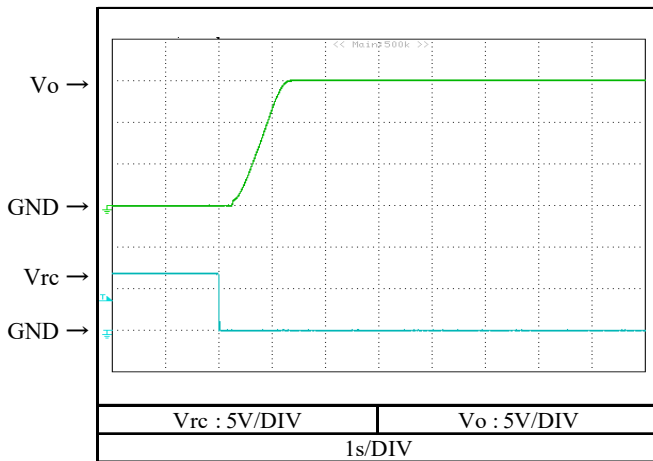


2-4. 出力立ち上がり・立ち下がり特性 (リモートON/OFFコントロール時)

Output rise and fall characteristics with REMOTE ON/OFF CONTROL

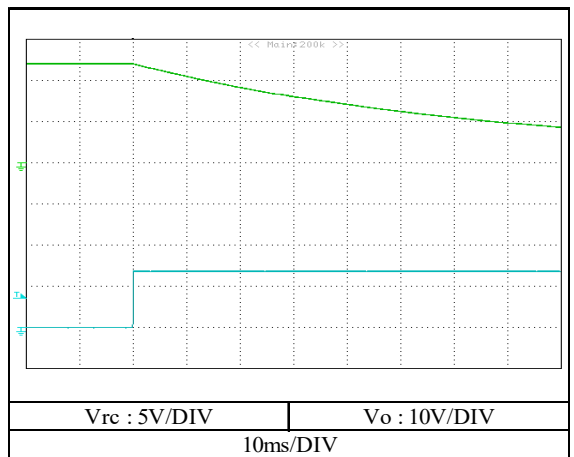
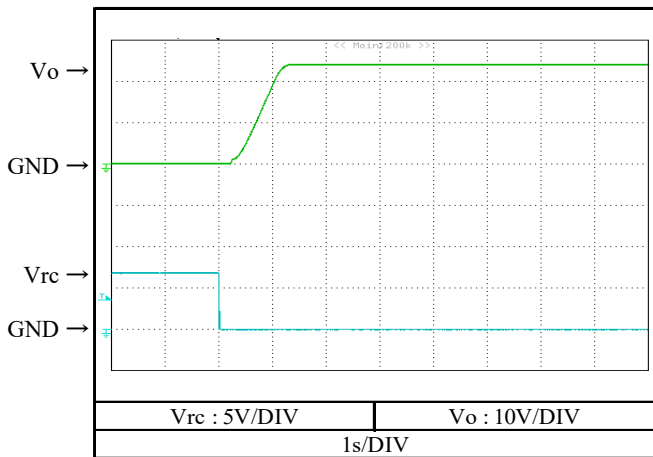
Conditions Vin : 24 VDC
 Io : 0 %
 Ta : 25 °C

Vo=15V



Conditions Vin : 28 VDC
 Io : 0 %
 Ta : 25 °C

Vo=24V



2-4. 出力立ち上がり・立ち下がり特性 (リモートON/OFFコントロール時)

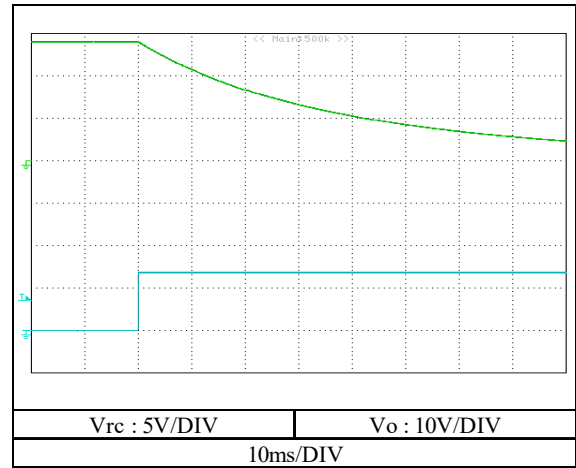
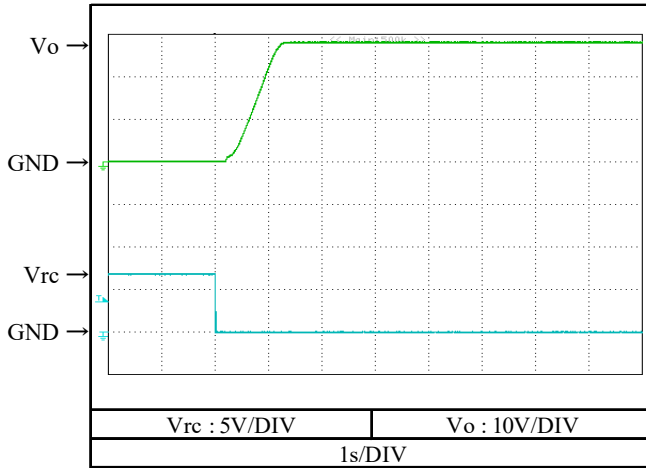
Output rise and fall characteristics with REMOTE ON/OFF CONTROL

Conditions V_{in} : 36 VDC

I_o : 0 %

T_a : 25 °C

$V_o=28V$

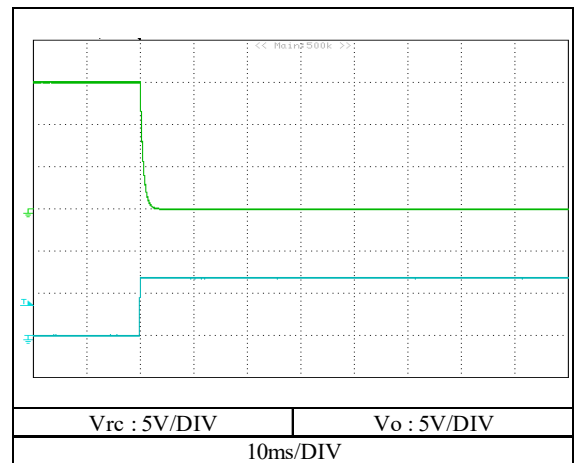
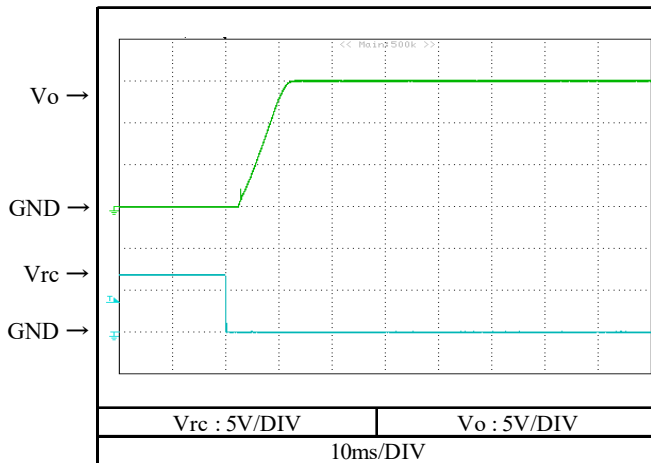


2-4. 出力立ち上がり・立ち下がり特性 (リモートON/OFFコントロール時)

Output rise and fall characteristics with REMOTE ON/OFF CONTROL

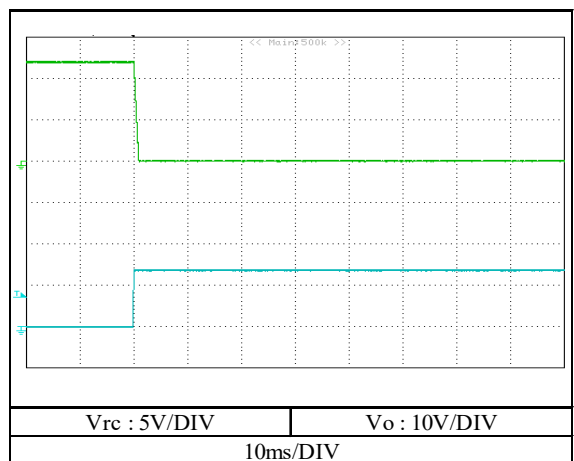
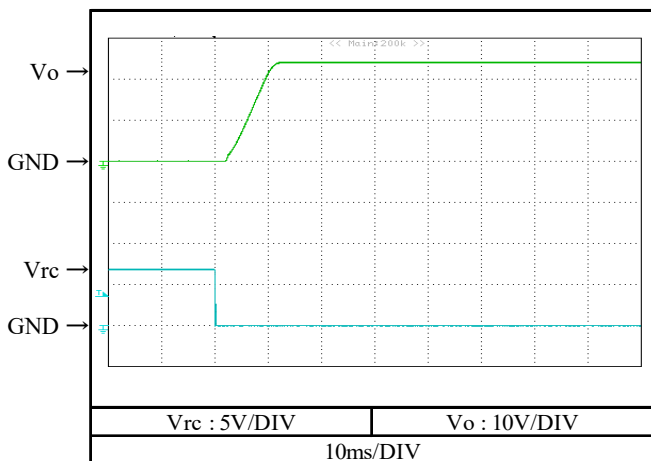
Conditions V_{in} : 24 VDC
 I_o : 100 %
 T_a : 25 °C

$V_o=15V$



Conditions V_{in} : 28 VDC
 I_o : 100 %
 T_a : 25 °C

$V_o=24V$



2-4. 出力立ち上がり・立ち下がり特性 (リモートON/OFFコントロール時)

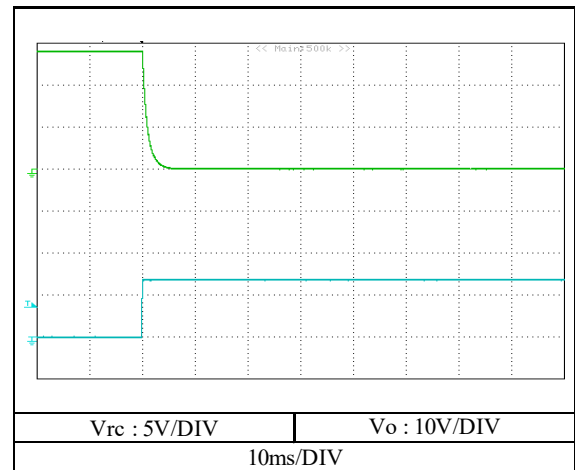
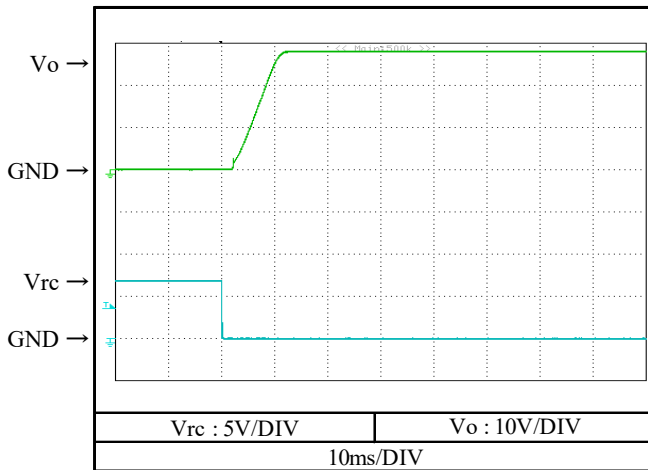
Output rise and fall characteristics with REMOTE ON/OFF CONTROL

Conditions V_{in} : 36 VDC

I_o : 100 %

T_a : 25 °C

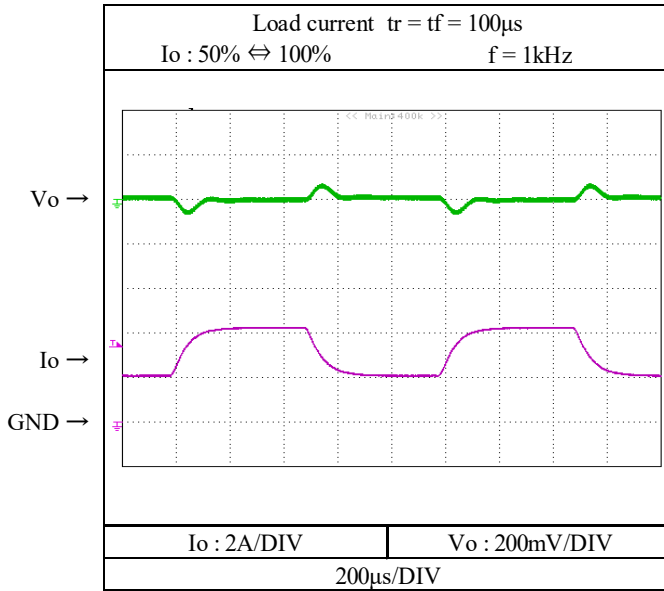
$V_o=28V$



2-5. 過渡応答(負荷急変)特性 Dynamic load response characteristics

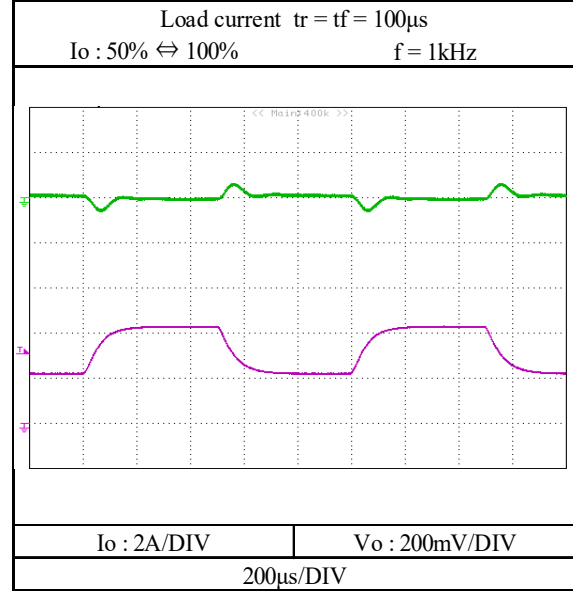
Conditions V_{in} : 24 VDC
 T_a : 25 °C

$V_o=15V$



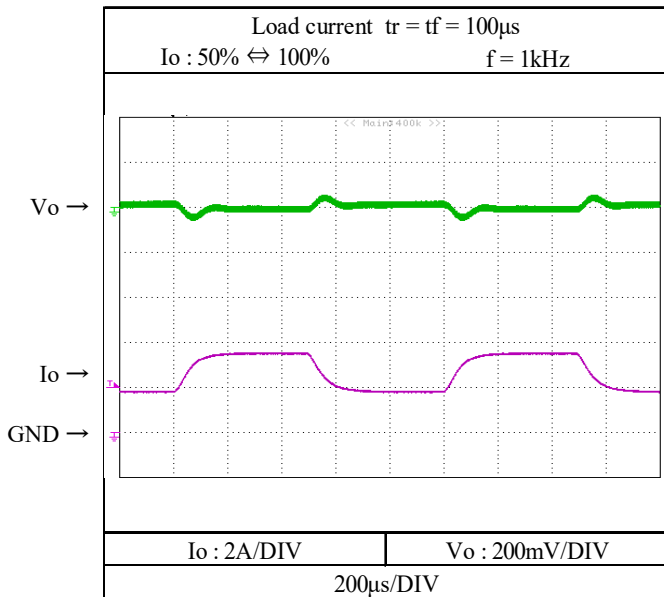
Conditions V_{in} : 28 VDC
 T_a : 25 °C

$V_o=24V$



Conditions V_{in} : 36 VDC
 T_a : 25 °C

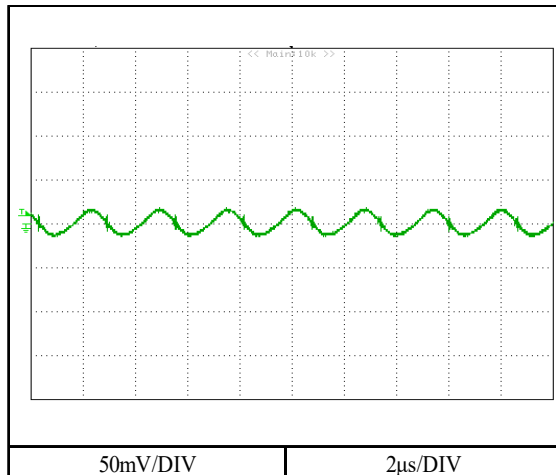
$V_o=28V$



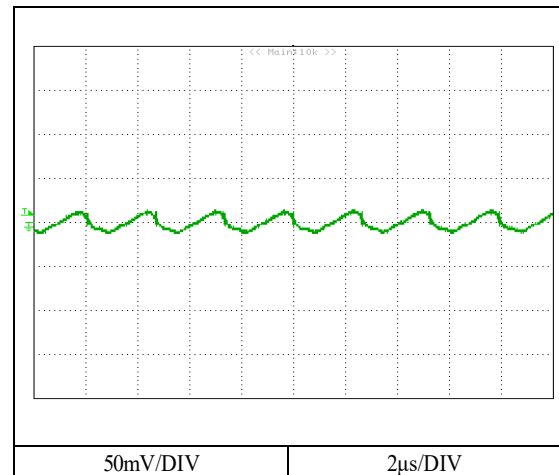
2-6. 出力リップル、ノイズ波形 Output ripple and noise waveform

Conditions I_o : 100 %
 T_a : 25 °C

Vo=15V Conditions V_{in} : 24 VDC



Vo=24V Conditions V_{in} : 28 VDC



Vo=28V Conditions V_{in} : 36 VDC

