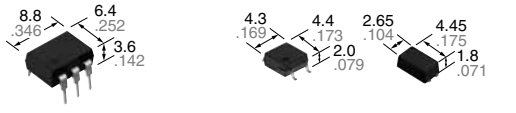
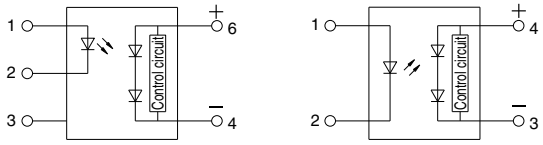
(APV1122, APV1121S, APV2121S)

**Photovoltaic MOSFET drivers of wide variation**

# Photovoltaic MOSFET Driver (APV1, 2)




mm inch




**RoHS compliant**

## FEATURES

**1. High-speed switching**
Since release time is Typ. 0.1 ms, the MOSFET can be turned off quickly in a urgent situation.

**2. High insulation**
DIP type: 5,000 Vrms
SOP type: 2,500 Vrms
SSOP type: 1,500 Vrms

**3. Extensive product lineup**
Products include SSOP, SOP4-pin and DIP6-pin.

## TYPICAL APPLICATIONS

- Power supply (Vcc) for electronic circuits
- Driving MOSFET

## TYPES

| Output rating | | Package | Part No. | | | | Packing quantity | |
|---|---|---|---|---|---|---|---|---|
| Drop-out voltage (Typ.) | Short circuit current (Typ.) | | Through hole terminal | Surface-mount terminal | | | | |
| | | | Tube packing style | Tube packing style | Tape and reel packing style | | Tube | Tape and reel |
| | | | | | Picked from 1/2/3-pin side*1 | Picked from 4/5/6-pin side*2 | | |
| 8.7V | 14μA | DIP6-pin | APV1122 | APV1122A | APV1122AX | APV1122AZ | 1 tube contains 50 pcs. 1 batch contains 500 pcs. | 1,000 pcs. |
| 8.7V | 14μA | SOP4-pin*3 | — | APV1121S | APV1121SX | APV1121SZ | 1 tube contains 100 pcs. 1 batch contains 2,000 pcs. | |
| 8.2V | 8μA | | — | APV2121S | APV2121SX | APV2121SZ | | |
| 8.2V | 8μA | SSOP*4 | — | — | APV2111VY | APV2111VW | — | 3,500 pcs. |

Notes: *1 SOP type is picked from 1/2-pin side, SSOP type is picked from 1/4-pin side.
*2 SOP type is picked from 3/4-pin side, SSOP type is picked from 2/3-pin side.
*3 For space reasons, the two initial letters of the part number "AP", package (SOP) indicator "S" and the packing style indicator "X" or "Z" are not marked on the device. (Ex. the label for product number APV1121SX is V1121).
*4 Tape and reel package is the standard packing style. Packing quantity of 1,000 pieces is possible. Please contact our sales office.
For space reasons, the two initial letters of the part number "AP", package (SSOP) indicator "V" and the packing style are not marked on the device. (Ex. the label for product number APV2111VY is V2111).

## RATING

**1. Absolute maximum ratings** (Ambient temperature: 25°C 77°F)

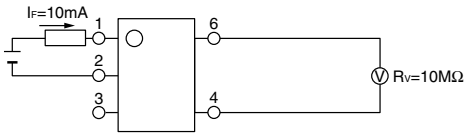
| Item | | Symbol | APV1122(A) | APV1121S | APV2121S | APV2111V | Remarks |
|---|---|---|---|---|---|---|---|
| Input | LED forward current | $I_F$ | 50mA | | | | |
| | LED reverse voltage | $V_R$ | 5V | | | | |
| | Peak forward current | $I_{FP}$ | 1A | | | | f = 100 Hz, Duty Ratio = 0.1% |
| | Power dissipation | $P_{in}$ | 75mW | | | | |
| I/O isolation voltage | | $V_{iso}$ | 5,000Vrms | 2,500Vrms | 2,500Vrms | 1,500Vrms | |
| Ambient temperature | Operating | $T_{opr}$ | –40 to +85°C –40 to +185°F | | | | (Non-icing at low temperatures) |
| | Storage | $T_{stg}$ | –40 to +100°C –40 to +212°F | | | | |

**2. Electrical characteristics** (Ambient temperature: 25°C 77°F)

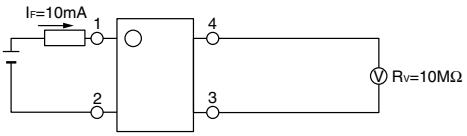
| Item | | | Symbol | APV1122(A) | APV1121S | APV2121S | APV2111V | Condition |
|---|---|---|---|---|---|---|---|---|
| Input | LED operate current | Typical | $I_{Fon}$ | 0.6mA | | 0.85mA | | $V_{OC}$ = 5V |
| | | Maximum | | 3mA | | | | |
| | LED turn off current | Minimum | $I_{Foff}$ | 0.2mA | | | | $V_{OC}$ = 1V |
| | | Typical | | 0.5mA | | 0.75mA | | |
| | LED dropout voltage | Typical | $V_F$ | 1.15V | | | | $I_F$ = 10mA |
| | | Maximum | | 1.5V | | | | |
| Output | Drop-out voltage* | Minimum | $V_{OC}$ | 6V | | 5V | | $I_F$ = 10mA |
| | | Typical | | 8.7V | | 8.2V | | |
| | Short circuit current** | Minimum | $I_{SC}$ | 5μA | | 3μA | | $I_F$ = 10mA |
| | | Typical | | 14μA | | 8μA | | |
| Transfer characteristics | Turn on time*** | Typical | $T_{on}$ | 0.4ms | | 0.8ms | | $I_F$ = 10mA, $C_L$ = 1,000pF |
| | Turn off time*** | Typical | $T_{off}$ | 0.1ms | | | | $I_F$ = 10mA, $C_L$ = 1,000pF |
| | I/O capacitance | Typical | $C_{iso}$ | 0.8pF | | | | $V_B$ = 0V, f = 1MHz |
| | | Maximum | | 1.5pF | | | | |
| | Initial I/O isolation resistance | Minimum | $R_{iso}$ | 1,000MΩ | | | | 500V DC |

*Drop-out voltage measurement circuit

APV1122(A)

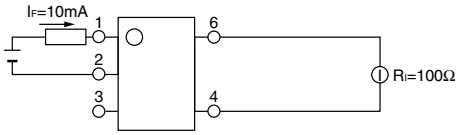



APV1121S, APV2121S, APV2111V

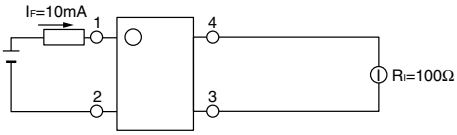



**Short circuit current measurement circuit

APV1122(A)

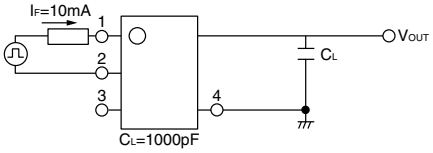



APV1121S, APV2121S, APV2111V

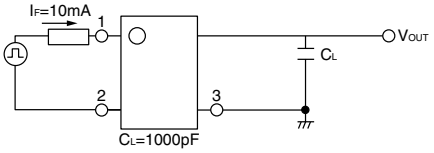



***Turn on/Turn off time measurement circuit

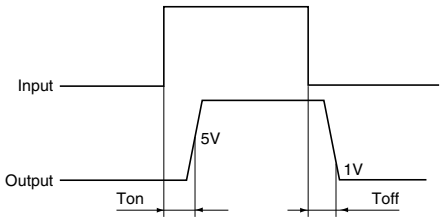
APV1122(A)




APV1121S, APV2121S, APV2111V




***Turn on time




**3. Recommended operating conditions** (Ambient temperature: 25°C 77°F)

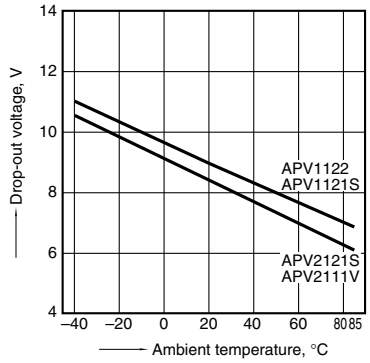
Please use under recommended operating conditions to obtain expected characteristics.

| Item | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| LED current | $I_F$ | 10 | 30 | mA |

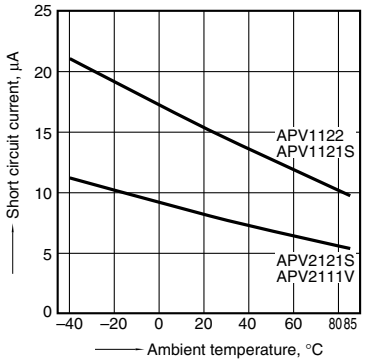
■ **These products are not designed for automotive use.**
**If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.**

# REFERENCE DATA

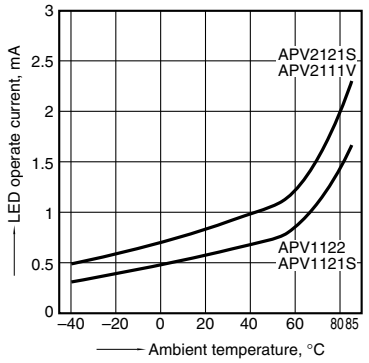
1. Drop-out voltage vs. ambient temperature characteristics
Input current: 10mA



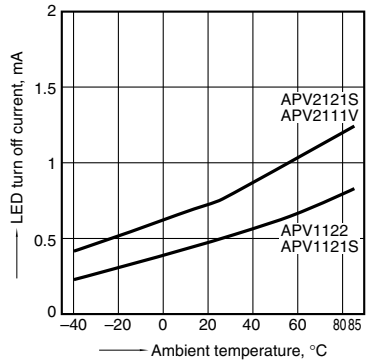

2. Short circuit current vs. ambient temperature characteristics
Input current: 10mA



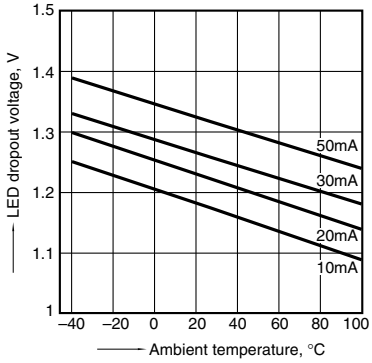

3. LED operate current vs. ambient temperature characteristics
Drop-out voltage: 5V



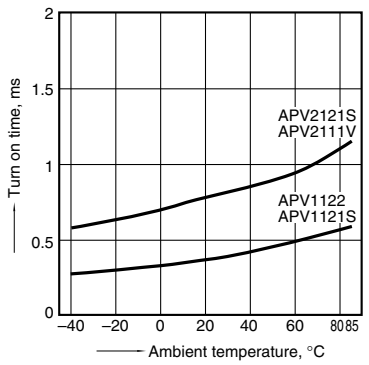

4. LED turn off current vs. ambient temperature characteristics
Drop-out voltage: 1V



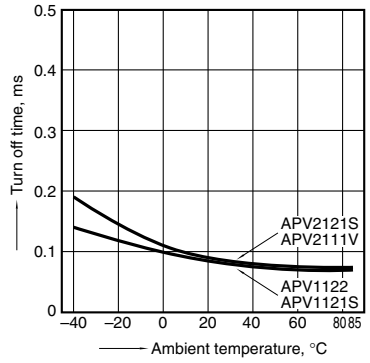

5. LED dropout voltage vs. ambient temperature characteristics
LED forward current: 10 to 50mA



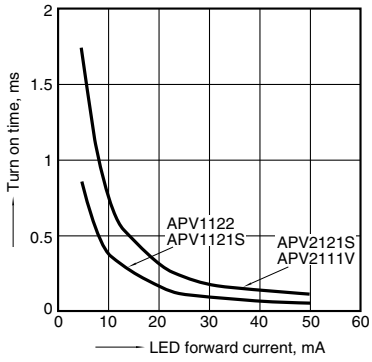

6. Turn on time vs. ambient temperature characteristics
LED forward current: 10mA
Load capacity: 1,000pF; output voltage: 5V



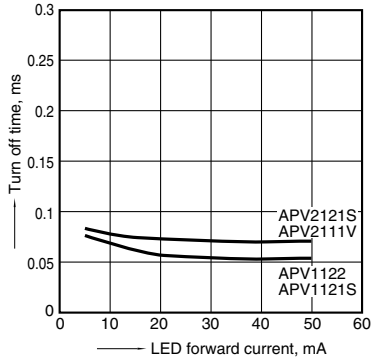

7. Turn off time vs. ambient temperature characteristics
LED forward current: 10mA
Load capacity: 1,000pF; output voltage: 1V



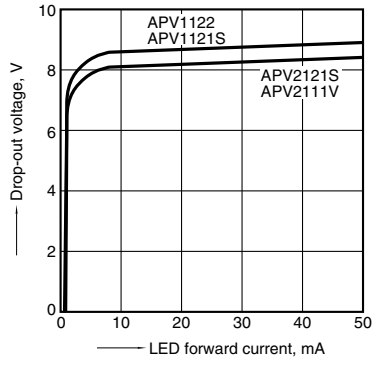

8. Turn on time vs. LED forward current characteristics
Load capacity: 1,000pF; output voltage: 5V



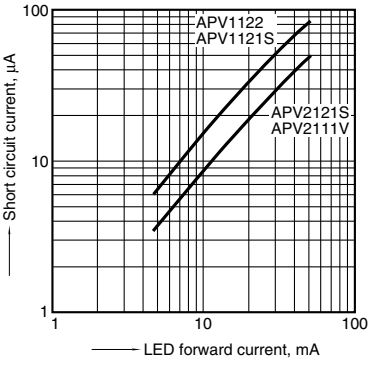

9. Turn off time vs. LED forward current characteristics
Load capacity: 1,000pF; output voltage: 1V




10. Drop-out voltage vs. LED forward current characteristics




11. Short circuit current vs. LED forward current characteristics



Please contact .....

Panasonic Corporation
Electromechanical Control Business Division
■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

Panasonic®

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panasonic:

APV1121SX APV1121SZ APV1122AX APV1122AZ APV2111VW APV2111VY APV2121S APV2121SX APV2121SZ APV2111V

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

**Данный компонент на территории Российской Федерации**

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

**Офис по работе с юридическими лицами:**

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9