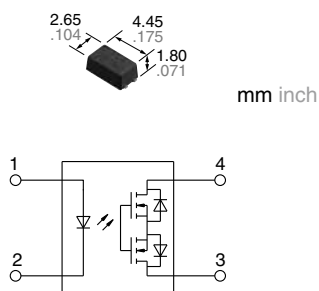


**C×R type SSOP package**  
**60 V, 80 V and 100 V**  
**load voltage**

**PhotoMOS®**  
**RF SSOP 1 Form A C×R**  
**(AQY22○○○V)**



**RoHS compliant**

### FEATURES

- 1. Miniature SSOP package**  
 (Compared to SOP 4-pin models, volume ratio can be reduced by approximately 53%.)
- 2. Load voltage: 60 V, 80 V and 100 V**
- 3. Low C×R**  
 Low on resistance and low output capacitance available
  - 60 V load voltage  
 Output capacitance: Typ. 27 pF, On resistance: Typ. 0.8Ω
  - 80 V load voltage  
 Output capacitance: Typ. 4.5 pF, On resistance: Typ. 10.5Ω
  - 100 V load voltage  
 Output capacitance: Typ. 5.8 pF, On resistance: Typ. 8.8Ω
- 4. Turn on time**  
 80 V and 100 V load voltage type: Typ. 0.05 ms

### TYPICAL APPLICATIONS

- 1. Measuring and testing equipment**  
 Semiconductor testing equipment, Probe cards, Datalogger, Board tester and other testing equipment
- 2. Telecommunication and broadcasting equipment**
- 3. Medical equipment**  
 Ultrasonic wave diagnostic machine
- 4. Multi-point recorder**  
 Data logger, Warping and Thermocouple, etc.

\*Does not support automotive applications.

### TYPES

| Type           | Output rating*1 |              | Part No. (Tape and reel packing style)*2 |                                  | Packing quantity in the tape and reel |
|----------------|-----------------|--------------|--|----------------------------------|---------------------------------------|
|                | Load voltage    | Load current | Picked from the 1 and 4-pin side         | Picked from the 2 and 3-pin side |                                       |
| AC/DC dual use | 60 V            | 400 mA       | AQY222R2VY                               | AQY222R2VW                       | 3,500 pcs.                            |
|                | 80 V            | 120 mA       | AQY225R2VY                               | AQY225R2VW                       |                                       |
|                | 100 V           | 120 mA       | AQY225R3VY                               | AQY225R3VW                       |                                       |

Notes: \*1. Indicate the peak AC and DC values.

\*2. Only tape and reel package is available. Packing quantity of 1,000 pieces is possible. Please consult us.

For space reasons, the three initial letters of the part number "AQY", the package (SSOP) indication "V", and the packaging style "Y" or "W" are not marked on the device.

# RF SSOP 1 Form A C×R (AQY22000V)

## RATING

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

| Item                    |                         | Symbol     | AQY222R2V                   | AQY225R2V | AQY225R3V | Remarks                         |
|-------------------------|-------------------------|------------|-----------------------------|-----------|-----------|---------------------------------|
| Input side              | LED forward current     | $I_F$      | 50 mA                       |           |           |                                 |
|                         | LED reverse voltage     | $V_R$      | 5 V                         |           |           |                                 |
|                         | Peak forward current    | $I_{FP}$   | 1 A                         |           |           | f = 100 Hz, Duty factor = 0.1%  |
|                         | Power dissipation       | $P_{in}$   | 75 mW                       |           |           |                                 |
| Output side             | Load voltage (peak AC)  | $V_L$      | 60 V                        | 80 V      | 100 V     |                                 |
|                         | Continuous load current | $I_L$      | 0.4 A                       | 0.12 A    |           | Peak AC, DC                     |
|                         | Peak load current       | $I_{peak}$ | 1.2 A                       | 0.3 A     |           | 100 ms (1shot), $V_L = DC$      |
|                         | Power dissipation       | $P_{out}$  | 250 mW                      |           |           |                                 |
| Total power dissipation |                         | $P_T$      | 300 mW                      |           |           |                                 |
| I/O isolation voltage   |                         | $V_{iso}$  | 1,500 Vrms                  |           |           |                                 |
| 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 |           |           |                                 |

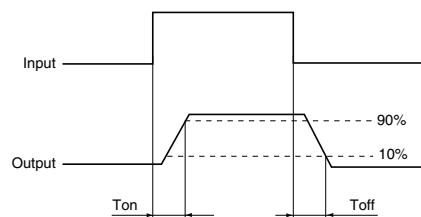
### 2. Electrical characteristics (Ambient temperature: 25°C 77°F)

| Item                             |                      |            | Symbol                          | AQY222R2V | AQY225R2V | AQY225R3V                  | Condition   |
|----------------------------------|----------------------|------------|---------------------------------|-----------|-----------|----------------------------|---|
| Input                            | LED operate current  | Typical    | $I_{Fon}$                       | 0.5 mA    |           |                            | AQY222R2V: $I_L = 400$ mA<br>AQY225R2V: $I_L = 80$ mA<br>AQY225R3V: $I_L = 80$ mA   |
|                                  |                      | Maximum    |                                 | 3.0 mA    |           |                            |   |
|                                  | LED turn off current | Minimum    | $I_{Foff}$                      | 0.1 mA    |           |                            |   |
|                                  |                      | Typical    |                                 | 0.45 mA   |           |                            |   |
| LED dropout voltage              | Typical              | $V_F$      | 1.32 V (1.14 V at $I_F = 5$ mA) |           |           | $I_F = 50$ mA              |   |
|                                  | Maximum              |            | 1.5 V                           |           |           |                            |   |
| Output                           | On resistance        | Typical    | $R_{on}$                        | 0.8Ω      | 10.5Ω     | 8.8Ω                       | AQY222R2V: $I_F = 5$ mA, $I_L = 400$ mA<br>AQY225R2V: $I_F = 5$ mA, $I_L = 80$ mA<br>AQY225R3V: $I_F = 5$ mA, $I_L = 80$ mA<br>Within 1 s                         |
|                                  |                      | Maximum    |                                 | 1.25Ω     | 15Ω       | 14Ω                        |   |
|                                  | Output capacitance   | Typical    | $C_{out}$                       | 27 pF     | 4.5 pF    | 5.8 pF                     |   |
|                                  |                      | Maximum    |                                 | 40 pF     | 6 pF      | 8 pF                       |   |
| Off state leakage current        | Typical              | $I_{Leak}$ | —                               |           |           | $I_F = 0$ mA, $V_L = Max.$ |   |
|                                  | Maximum              |            | *10 nA                          |           |           |                            |   |
| Transfer characteristics         | Turn on time**       | Typical    | $T_{on}$                        | 0.15 ms   | 0.05 ms   |                            | AQY222R2V: $I_F = 5$ mA, $V_L = 10$ V, $R_L = 100Ω$<br>AQY225R2V: $I_F = 5$ mA, $V_L = 10$ V, $R_L = 125Ω$<br>AQY225R3V: $I_F = 5$ mA, $V_L = 10$ V, $R_L = 125Ω$ |
|                                  |                      | Maximum    |                                 | 0.5 ms    |           |                            |   |
|                                  | Turn off time**      | Typical    | $T_{off}$                       | 0.08 ms   | 0.05 ms   |                            |   |
|                                  |                      | Maximum    |                                 | 0.2 ms    |           |                            |   |
| I/O capacitance                  | Typical              | $C_{iso}$  | 0.8 pF                          |           |           | f = 1 MHz, $V_B = 0$ V     |   |
|                                  | Maximum              |            | 1.5 pF                          |           |           |                            |   |
| Initial I/O isolation resistance | Minimum              | $R_{iso}$  | 1,000 MΩ                        |           |           | 500 V DC                   |   |

Note: Variation possible through combinations of output capacitance and on resistance. For more information, please contact our sales office in your area.

\*Available as custom orders (1 nA or less)

\*\*Turn on/Turn off 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 |                         | $I_F$  | 5    | 30   | mA   |
| AQY222R2V   | Load voltage (Peak AC)  | $V_L$  | —    | 30   | V    |
|             | Continuous load current | $I_L$  | —    | 0.4  | A    |
| AQY225R2V   | Load voltage (Peak AC)  | $V_L$  | —    | 40   | V    |
|             | Continuous load current | $I_L$  | —    | 0.12 | A    |
| AQY225R3V   | Load voltage (Peak AC)  | $V_L$  | —    | 50   | V    |
|             | Continuous load current | $I_L$  | —    | 0.12 | A    |

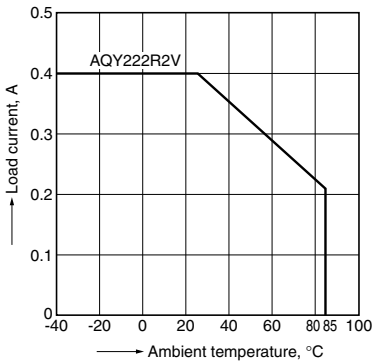
■ These products are not designed for automotive use.

If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

## REFERENCE DATA

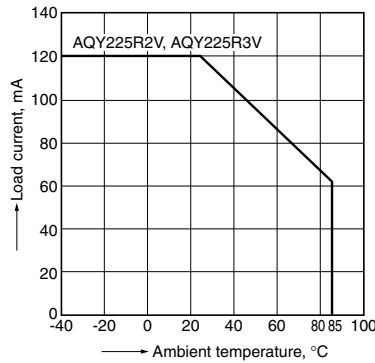
1.-(1) Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40 to +85°C  
-40 to +185°F



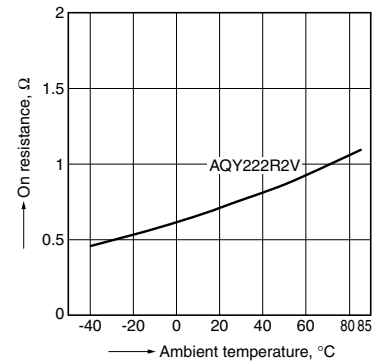
1.-(2) Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40 to +85°C  
-40 to +185°F



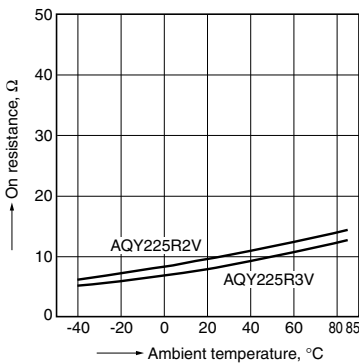
2.-(1) On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4  
LED current: 5 mA; Load voltage: 10V (DC)  
Continuous load current: Max. (DC)



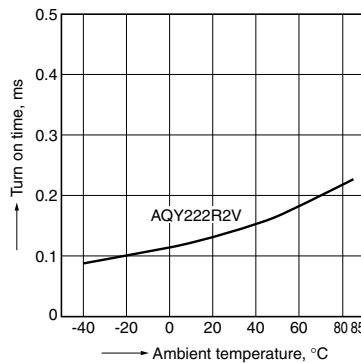
2.-(2) On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4;  
LED current: 5 mA; Load voltage: 10V (DC);  
Continuous load current: 80mA (DC)



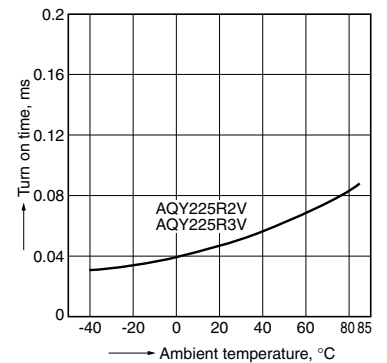
3.-(1) Turn on time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);  
Continuous load current: 100mA (DC)



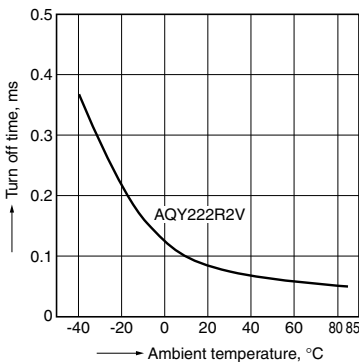
3.-(2) Turn on time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);  
Continuous load current: 80mA (DC)



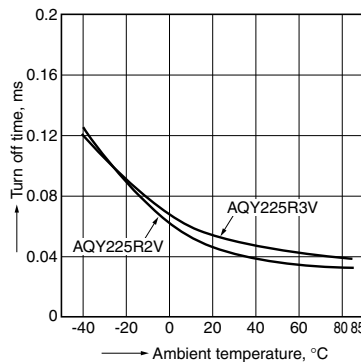
4.-(1) Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);  
Continuous load current: 100mA (DC)



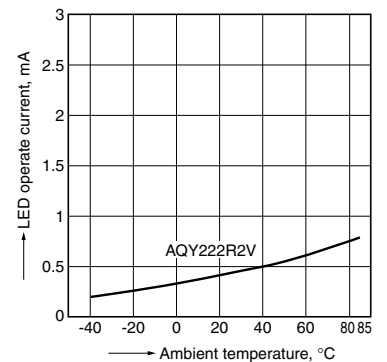
4.-(2) Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);  
Continuous load current: 80mA (DC)



5.-(1) LED operate current vs. ambient temperature characteristics

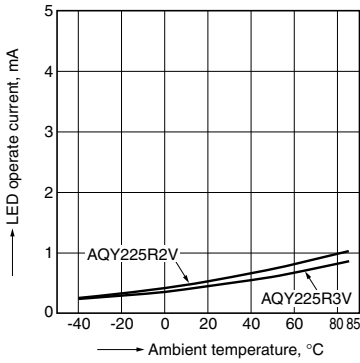
Load voltage: 10V (DC);  
Continuous load current: 400mA (DC)



# RF SSOP 1 Form A CxR (AQY22000V)

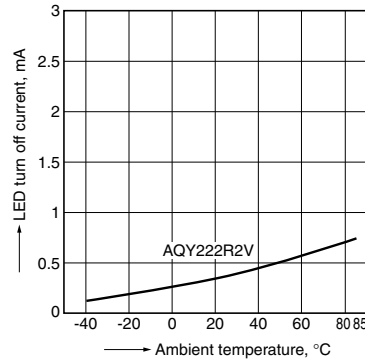
5.-(2) LED operate current vs. ambient temperature characteristics

Load voltage: 10V (DC);  
Continuous load current: 80mA (DC)



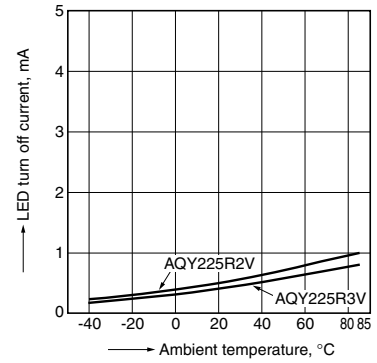
6.-(1) LED turn off current vs. ambient temperature characteristics

Load voltage: 10V (DC);  
Continuous load current: 400mA (DC)



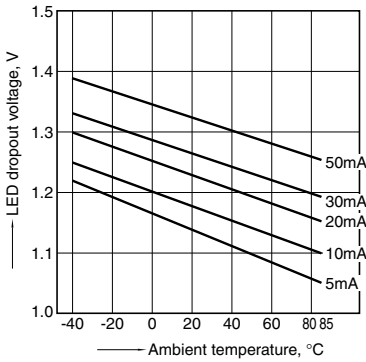
6.-(2) LED turn off current vs. ambient temperature characteristics

Load voltage: 10V (DC);  
Continuous load current: 80mA (DC)



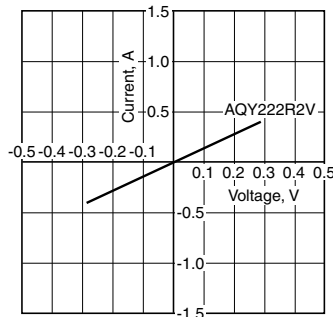
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



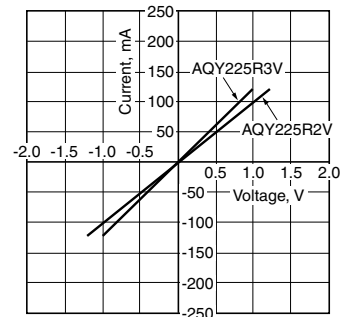
8.-(1) Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4;  
Ambient temperature: 25°C 77°F



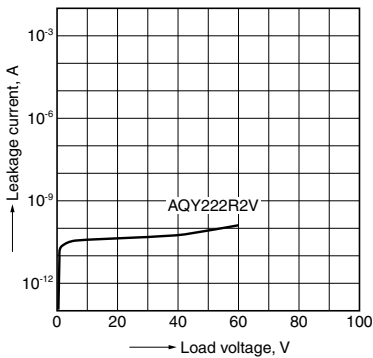
8.-(2) Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4;  
Ambient temperature: 25°C 77°F



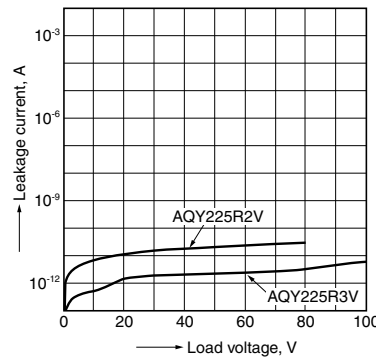
9.-(1) Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4;  
Ambient temperature: 25°C 77°F



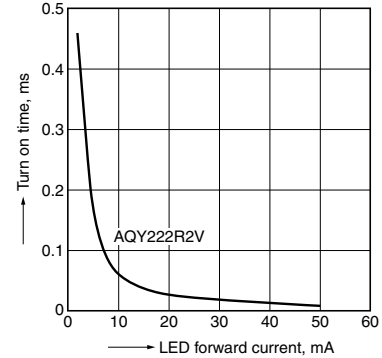
9.-(2) Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4;  
Ambient temperature: 25°C 77°F



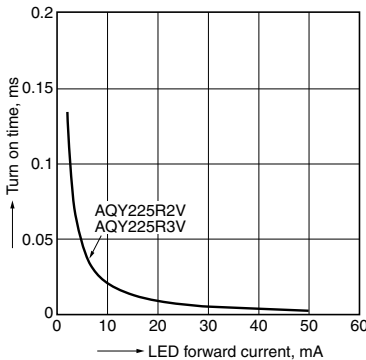
10.-(1) Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;  
Load voltage: 10V (DC); Continuous load current: 100mA (DC); Ambient temperature: 25°C 77°F



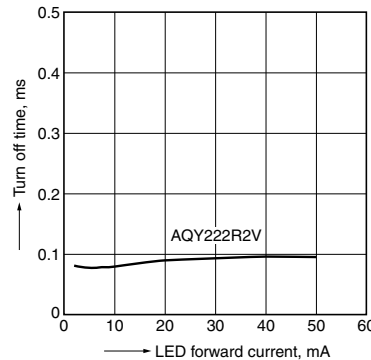
10.-(2) Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;  
Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



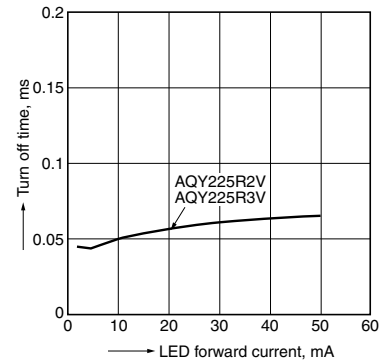
11.-(1) Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;  
Load voltage: 10V (DC); Continuous load current: 100mA (DC); Ambient temperature: 25°C 77°F



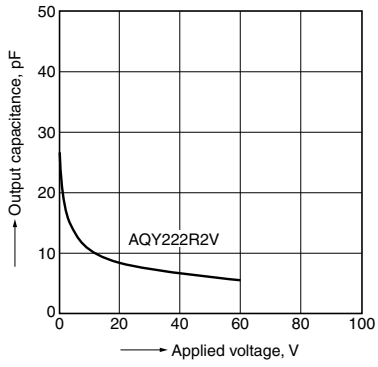
11.-(2) Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;  
Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



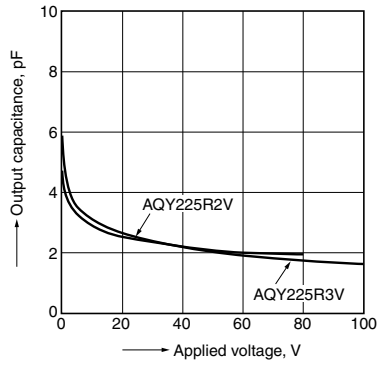
12.-(1) Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4;  
 Measurement signal: 1 MHz;  
 Ambient temperature: 25°C 77°F



12.-(2) Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4;  
 Measurement signal: 1 MHz;  
 Ambient temperature: 25°C 77°F



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Please contact .....

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[AQY225R3VY](#) [AQY225R3VW](#)

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

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- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
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- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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