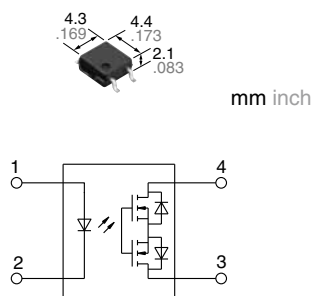


| | |
|---|--|
| Miniature SOP4-pin type Low C×R 60V/80V load voltage | PhotoMOS® RF SOP 1 Form A C×R (AQY22○ROS) |
|---|--|



RoHS compliant

FEATURES

1. Low capacitance and low on resistance (Load voltage: 60 to 80V)

| | AQY222R1S | AQY225R1S | AQY225R2S |
|---------------------------|-------------|-------------|------------|
| Output capacitance (Cout) | Typ. 24.5pF | Typ. 37.5pF | Typ. 4.5pF |
| On resistance (Ron) | Typ. 0.8Ω | Typ. 0.8Ω | Typ. 10.5Ω |

2. Miniature SOP4-pin package

(W)4.3 × (L)4.4 × (H)2.1 mm
(W).169 × (L).173 × (H).083 inch

3. Low-level off-state leakage current of Typ. 0.01 nA (AQY225R2S)

4. Controls low-level analog signals

TYPICAL APPLICATIONS

1. Measuring and testing equipment

IC tester, Liquid crystal driver tester, Semiconductor performance tester, Bare board tester, In-circuit tester, Function tester, etc.

2. Telecommunication and broadcasting equipment

3. Medical equipment

4. Multi-point recorder

Data logger, Warming and Thermocouple, etc.

TYPES

| | Output rating* | | Package | Part No. | | | Packing quantity | |
|----------------|----------------|--------------|----------|--------------------|------------------------------|------------------------------|---|---------------|
| | Load voltage | Load current | | Tube packing style | Tape and reel packing style | | Tube | Tape and reel |
| | | | | | Picked from the 1/2-pin side | Picked from the 3/4-pin side | | |
| AC/DC dual use | 60V | 0.5A | SOP4-pin | AQY222R1S | AQY222R1SX | AQY222R1SZ | 1 tube contains: 100 pcs. 1 batch contains: 2,000 pcs. | 1,000 pcs. |
| | 80V | 0.35A | | AQY225R1S | AQY225R1SX | AQY225R1SZ | | |
| | 80V | 0.15A | | AQY225R2S | AQY225R2SX | AQY225R2SZ | | |

* Indicate the peak AC and DC values.

Note: For space reasons, the three initial letters of the part number "AQY", the package (SOP) indicator "S" and the packing style indicator "X" or "Z" are not marked on the device. (Ex. the label for product number AQY222R1SX is 222R1)

RATING

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

| Item | | Symbol | AQY222R1S | AQY225R1S | AQY225R2S | Remarks |
|-------------------------|-------------------------|-------------------|-----------------------------|-----------|-----------|--------------------------------------|
| Input | LED forward current | I _F | 50mA | | | |
| | LED reverse voltage | V _R | 5V | | | |
| | Peak forward current | I _{FP} | 1A | | | f=100 Hz, Duty factor=0.1% |
| | Power dissipation | P _{in} | 75mW | | | |
| Output | Load voltage (peak AC) | V _L | 60V | 80V | | |
| | Continuous load current | I _L | 0.5A | 0.35A | 0.15A | Peak AC, DC |
| | Peak load current | I _{peak} | 1A | 0.7A | 0.45A | 100 ms (1 shot), V _L = DC |
| | Power dissipation | P _{out} | 300mW | | | |
| Total power dissipation | | P _T | 350mW | | | |
| I/O isolation voltage | | V _{iso} | 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 | | | |

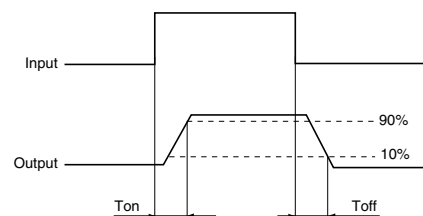
RF SOP 1 Form A C×R (AQY22○ROS)

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

| Item | | Symbol | AQY222R1S | AQY225R1S | AQY225R2S | Condition |
|----------------------------------|----------------------|-------------------|--|-----------|-----------|--|
| Input | LED operate current | Typical | 0.5 mA | | | I _L = Max. |
| | | Maximum | 3.0 mA | | | |
| | LED turn off current | Minimum | 0.1 mA | | | I _L = Max. |
| 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 | 0.8Ω | | 10.5Ω | I _F = 5 mA |
| | | Maximum | 1.2Ω | | 15Ω | I _L = Max. |
| | Output capacitance | Typical | C _{out} | 24.5 pF | 37.5 pF | 4.5 pF |
| Maximum | | 30 pF | | 45 pF | 6.0 pF | |
| Off state leakage current | Typical | I _{Leak} | 0.05 nA | 0.03 nA | 0.01 nA | I _F = 0 mA V _L = Max. |
| | Maximum | | *10 nA | | | |
| Transfer characteristics | Turn on time** | Typical | 0.15 ms | 0.25 ms | 0.05 ms | I _F = 5 mA V _L = 10V R _L = 100Ω |
| | | Maximum | 0.5ms | 0.75ms | 0.5ms | |
| | Turn off time** | Typical | T _{off} | 0.06 ms | 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} | 1,000MΩ | | | 500 V DC |

*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 | |
| AQY222R1S | Load voltage (Peak AC) | V _L | — | 30 | V |
| | Continuous load current | I _L | — | 0.5 | A |
| AQY225R1S | Load voltage (Peak AC) | V _L | — | 40 | V |
| | Continuous load current | I _L | — | 0.35 | A |
| AQY225R2S | Load voltage (Peak AC) | V _L | — | 40 | V |
| | Continuous load current | I _L | — | 0.15 | A |

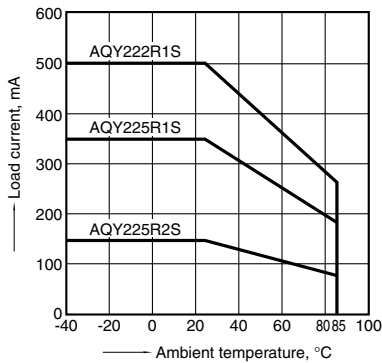
■ These products are not designed for automotive use.

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

REFERENCE DATA

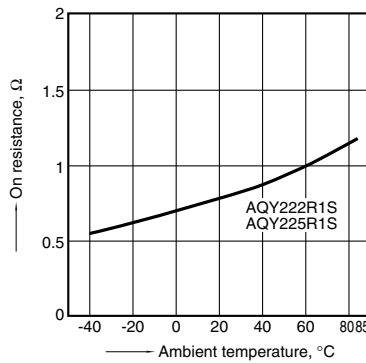
1. Load current vs. ambient temperature characteristics

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



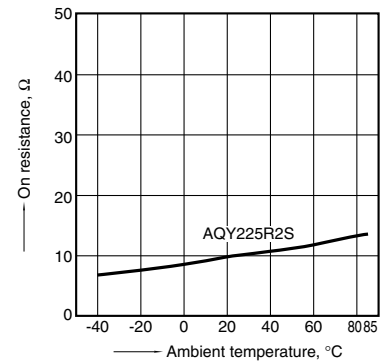
2.-(1) On resistance vs. ambient temperature characteristics

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



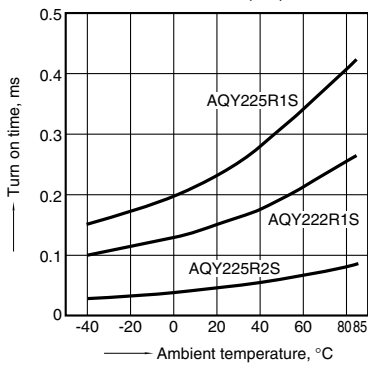
2.-(2) On resistance vs. ambient temperature characteristics

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



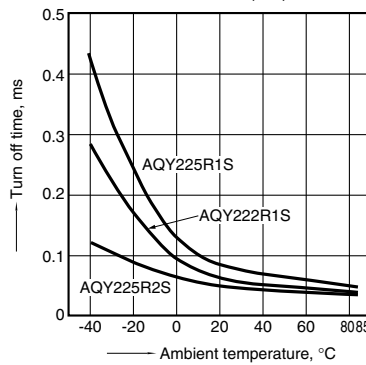
3. Turn on time vs. ambient temperature characteristics

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



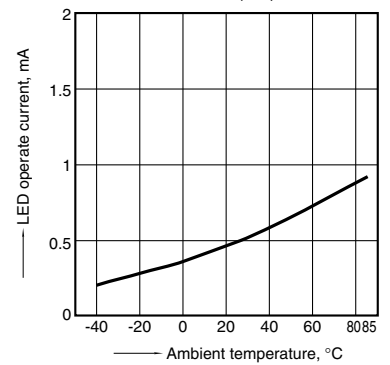
4. Turn off time vs. ambient temperature characteristics

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



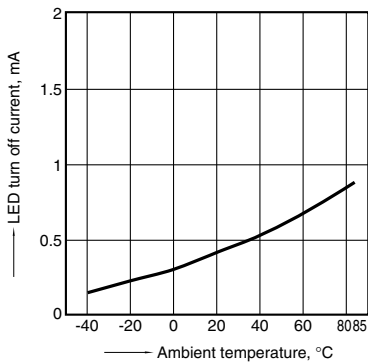
5. LED operate current vs. ambient temperature characteristics

Load voltage: Max. (DC)
Continuous load current: Max. (DC)



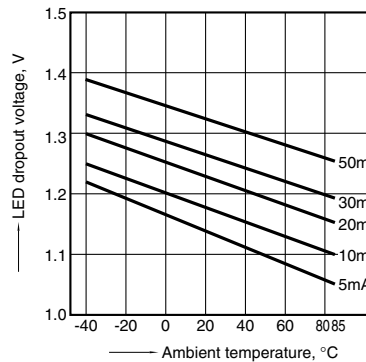
6. LED turn off current vs. ambient temperature characteristics

Load voltage: Max. (DC)
Continuous load current: Max. (DC)



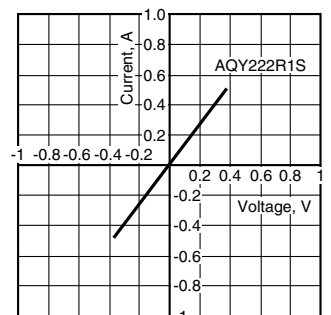
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



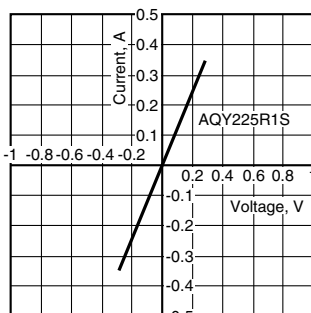
8.-(1) Current vs. voltage characteristics of output at MOS portion

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



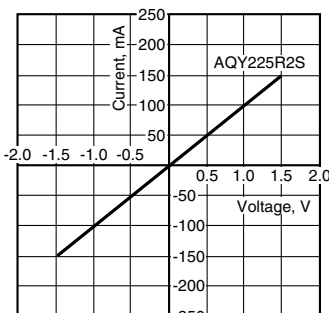
8.-(2) Current vs. voltage characteristics of output at MOS portion

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



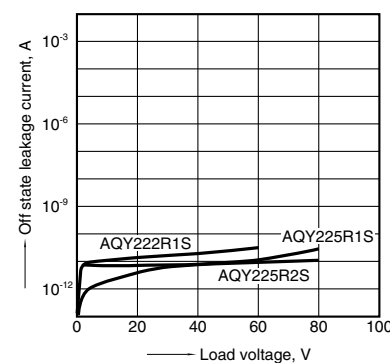
8.-(3) Current vs. voltage characteristics of output at MOS portion

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



9. Off state leakage current vs. load voltage characteristics

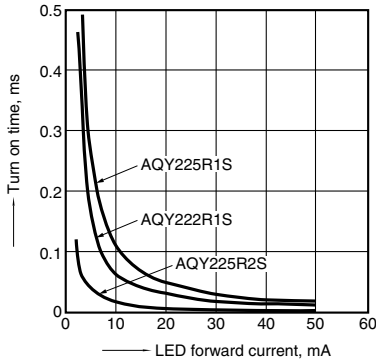
Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



RF SOP 1 Form A CxR (AQY22OROS)

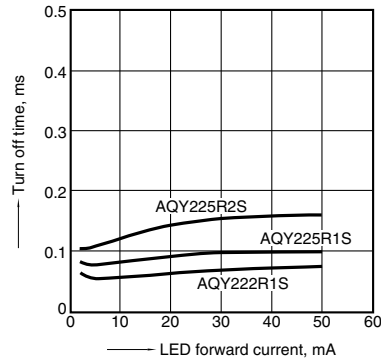
10. Turn on time vs. LED forward current characteristics

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



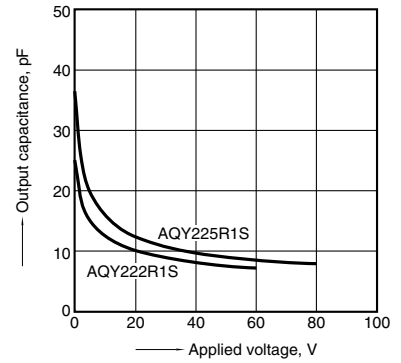
11. Turn off time vs. LED forward current characteristics

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



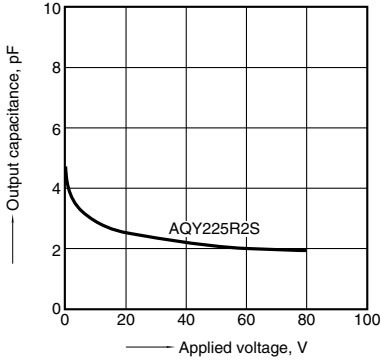
12.-(1) Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4
 Frequency: 1 MHz, 30mVrms
 Ambient temperature: 25°C 77°F



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

Measured portion: between terminals 3 and 4
 Frequency: 1 MHz, 30mVrms
 Ambient temperature: 25°C 77°F



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Please contact

Panasonic Corporation

Electromechanical Control Business Division

■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

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- Подбор аналогов;
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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.