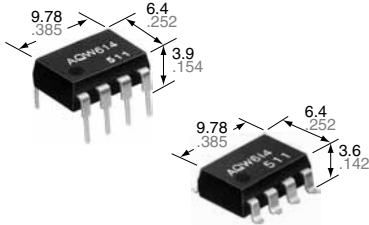
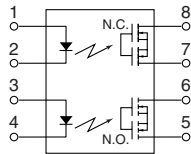


Both NO and NC contacts incorporated in a DIP8-pin package

PhotoMOS[®]
GU Form A & B
(AQW614)



mm inch



RoHS compliant

FEATURES

1. Approx. 1/2 the space compared with the mounting of a set of 1 Form A and 1 Form B PhotoMOS
2. Applicable for 1 Form A 1 Form B use as well as two independent 1 Form A and 1 Form B use
3. Controls load currents up to 0.13 A with 5 mA input current
4. Extremely low closed-circuit offset voltages to enable control of small analog signals without distortion
5. Stable on-resistance

TYPICAL APPLICATIONS

- High-speed inspection machines
- Telephone equipment
- Computers
- Sensing equipment

TYPES

| | Output rating* | | Package | Part No. | | | | Packing quantity | |
|----------------|----------------|--------------|--------------------|--------------------------------|--------------------------------|----------|----------|--|------------|
| | Load voltage | Load current | | Through hole terminal | Surface-mount terminal | | Tube | Tape and reel | |
| | | | | | Tape and reel packing style | | | | |
| | | | Tube packing style | Picked from the 1/2/3-pin side | Picked from the 4/5/6-pin side | | | | |
| AC/DC dual use | 400 V | 100 mA | DIP8-pin | AQW614 | AQW614A | AQW614AX | AQW614AZ | 1 tube contains: 50 pcs. 1 batch contains: 500 pcs. | 1,000 pcs. |

*Indicate the peak AC and DC values.

Note: The surface mount terminal shape indicator "A" and the packing style indicator "X" or "Z" are not marked on the device.

RATING

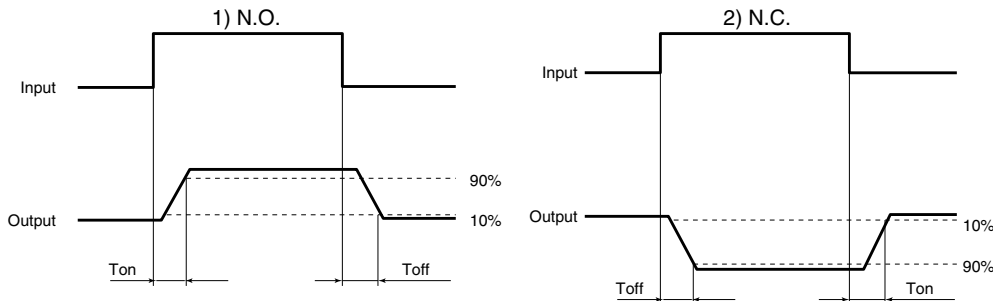
1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

| | Item | Symbol | AQW614(A) | Remarks |
|-------------------------|-------------------------|------------|---------------------------------|--|
| Input | 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 | Load voltage (peak AC) | V_L | 400 V | |
| | Continuous load current | I_L | 0.1 A (0.13 A) | Peak AC, DC (): in case of using only 1a or 1b, 1 channel |
| | Peak load current | I_{peak} | 0.3 A | 100 ms (1 shot), $V_L = DC$ |
| | Power dissipation | P_{out} | 800 mW | |
| Total power dissipation | | P_T | 850 mW | |
| I/O isolation voltage | | V_{iso} | 1,500 V AC | Between input and output/between contact sets |
| Temperature limits | Operating | T_{opr} | -40°C to +85°C -40°F to +185°F | Non-condensing at low temperatures |
| | Storage | T_{stg} | -40°C to +100°C -40°F to +212°F | |

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

| Item | | | Symbol | AQW614(A) | Condition | |
|----------------------------------|---------------------------|-----------|---------------------------------|-------------------------------|--|---|
| Input | LED operate current | Typical | I_{Fon} (N.O.) | 0.9 mA | $I_L = 100$ mA | |
| | | Maximum | I_{Foff} (N.C.) | 3 mA | | |
| | LED reverse current | Minimum | I_{Foff} (N.O.) | 0.4 mA | $I_L = 100$ mA | |
| | | Typical | I_{Fon} (N.C.) | 0.8 mA | | |
| LED dropout voltage | Typical | V_F | 1.25 V (1.14 V at $I_F = 5$ mA) | | $I_F = 50$ mA | |
| | Maximum | | 1.5 V | | | |
| Output | On resistance | Typical | R_{on} | 27 Ω | $I_F = 5$ mA (N.O.) $I_F = 0$ mA (N.C.) $I_L = 100$ mA within 1 s on time | |
| | | Maximum | | 50 Ω | | |
| | Off state leakage current | Maximum | I_{Leak} | 1 μ A | $I_F = 0$ mA (N.O.) $I_F = 5$ mA (N.C.) $V_L = 400$ V | |
| Transfer characteristics | Operate time* | Typical | T_{on} (N.O.) | 0.28 ms (N.O.) 0.43 ms (N.C.) | | $I_F = 0$ mA \rightarrow 5 mA $I_L = 100$ mA |
| | | Maximum | | T_{off} (N.C.) | 1 ms | |
| | Reverse time* | Typical | T_{off} (N.O.) | 0.04 ms (N.O.) 0.3 ms (N.C.) | | $I_F = 5$ mA \rightarrow 0 mA $I_L = 100$ mA |
| | | Maximum | | T_{on} (N.C.) | 1 ms | |
| | I/O capacitance | Typical | C_{iso} | 0.8 pF | | $f = 1$ MHz |
| | Maximum | 1.5 pF | | $V_B = 0$ V | | |
| Initial I/O isolation resistance | Minimum | R_{iso} | 1,000 M Ω | | 500 V DC | |

*Operate/Reverse time



RECOMMENDED OPERATING CONDITIONS

Please obey the following conditions to ensure proper device operation and resetting.

| Item | Symbol | Recommended value | Unit |
|-------------------|--------|-------------------|------|
| Input LED current | I_F | 5 | mA |

■ For Dimensions.

■ For Schematic and Wiring Diagrams.

■ For Cautions for Use.

■ These products are not designed for automotive use.

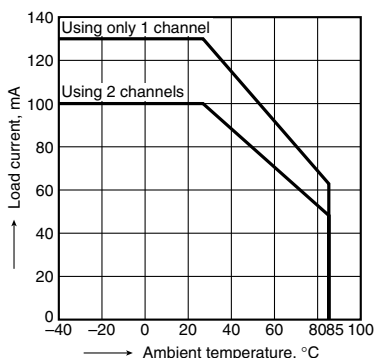
If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

For more information.

REFERENCE DATA

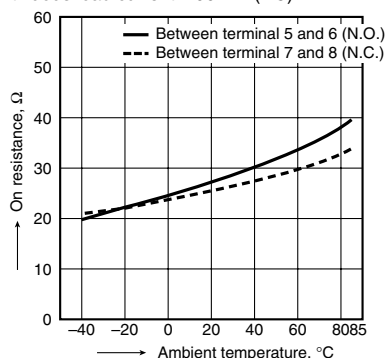
1. Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40°C to $+85^{\circ}\text{C}$
 -40°F to $+185^{\circ}\text{F}$



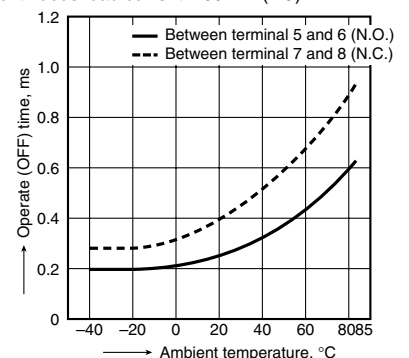
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
LED current: 5 mA; Load voltage: 400 V (DC);
Continuous load current: 100 mA (DC)



3. Operate time vs. ambient temperature characteristics

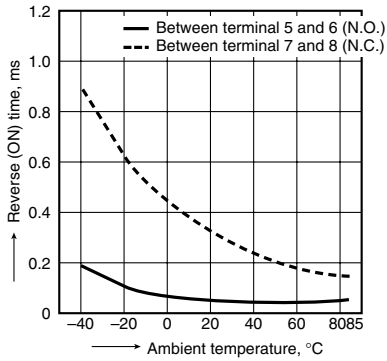
LED current: 5 mA;
Load voltage: 400 V (DC);
Continuous load current: 100 mA (DC)



GU Form A & B (AQW614)

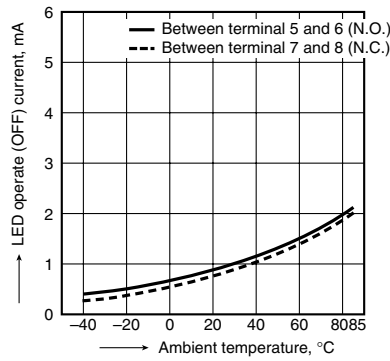
4. Reverse time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 400 V (DC);
Continuous load current: 100 mA (DC)



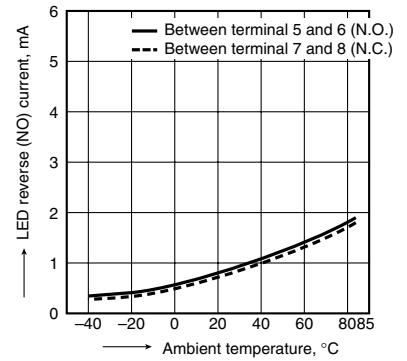
5. LED operate current vs. ambient temperature characteristics

Load voltage: 400 V (DC);
Continuous load current: 100 mA (DC)



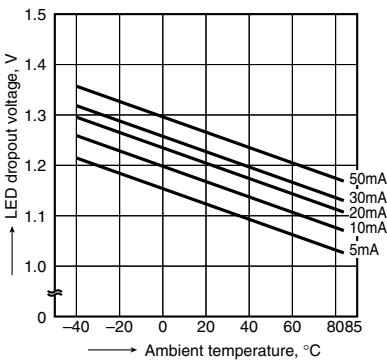
6. LED reverse current vs. ambient temperature characteristics

Load voltage: 400 V (DC);
Continuous load current: 100 mA (DC)



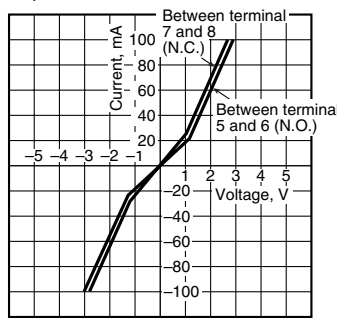
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



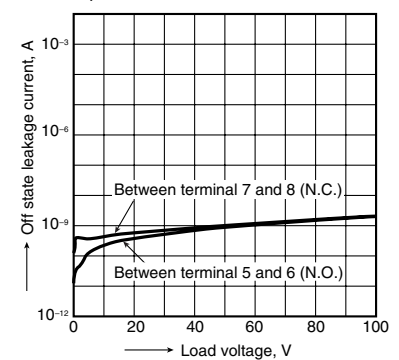
8. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 5 and 6, 7 and 8;
Ambient temperature: 25°C 77°F



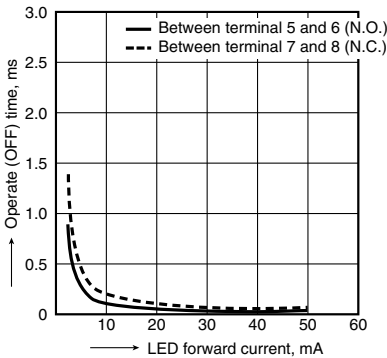
9. Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Ambient temperature: 25°C 77°F



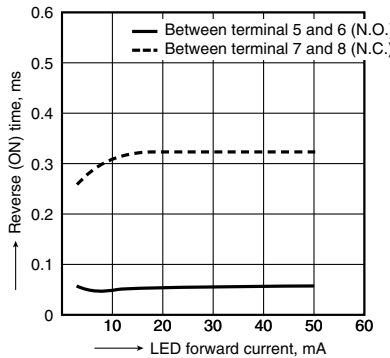
10. Operate time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Load voltage: 400 V (DC); Continuous load current:
100 mA (DC); Ambient temperature: 25°C 77°F



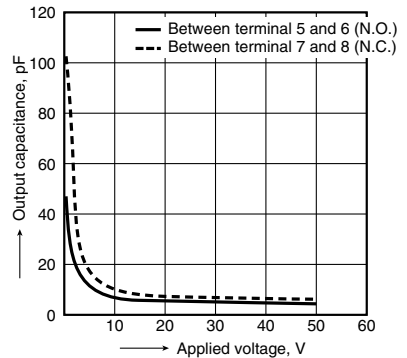
11. Reverse time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Load voltage: 400 V (DC); Continuous load current:
100 mA (DC); Ambient temperature: 25°C 77°F



12. Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Frequency: 1 MHz;
Ambient temperature: 25°C 77°F



Данный компонент на территории Российской Федерации

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