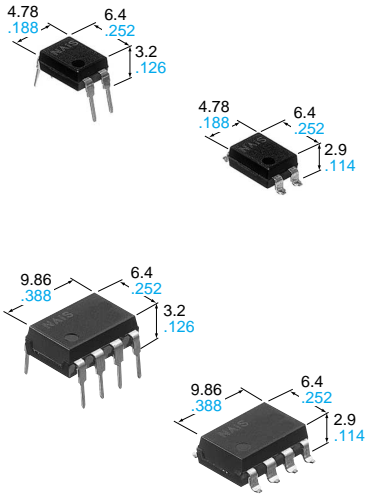


FEATURES

- 1. Low cost type.**
- 2. Reinforced insulation 5,000V type (DIP type)**
More than 0.4mm internal insulation distance between inputs and outputs. Conforms to EN41003, EN60950 (reinforced insulation)
- 3. Various package design (DIP4, SOP4, DIP8, SOP8 packages are available)**
- 4. High sensitivity, Low ON resistance**
Can control a maximum 0.5A (AQY282EH, AQW282EH) load current with a 5mA input current. Low ON resistance of 2.5Ω (AQY282EH, AQW282EH). Stable operation because there are no metallic contact parts.
- 5. Low-level off state leakage current**
The SSR has an off state leakage current of several milliamperes, where as the PhotoMOS relay has only 100pA even with the rated load voltage of 350V (AQY280EH).

TYPICAL APPLICATIONS

- Modem
- Telephone equipment
- Security equipment
- Sensors
- Amusement



mm inch

DIP TYPES

DIP 4pin

| Type | I/O isolation voltage | Output rating* | | Part No. | | | | Packing quantity | |
|------------|-----------------------|----------------|--------|-----------------------|------------------------|------------|------------------------------|--|------------------------------|
| | | | | Through hole terminal | Surface-mount terminal | | Tape and reel packing style | | |
| | | | | | | | Picked from the 1/2-pin side | | Picked from the 3/4-pin side |
| AC/DC type | Reinforced 5,000 V | 60 V | 500 mA | AQY282EH | AQY282EHA | AQY282EHAX | AQY282EHAZ | Tube: 1 tube contains 100 pcs. Tube: 1 batch contains 1,000 pcs. Tape and reel: 1,000 pcs. | |
| | | 350 V | 130 mA | AQY280EH | AQY280EHA | AQY280EHAX | AQY280EHAZ | | |
| | | 400 V | 120 mA | AQY284EH | AQY284EHA | AQY284EHAX | AQY284EHAZ | | |

*Indicate the peak AC and DC values.

Note: For space reasons, the initial letters of the product number "AQY", the SMD terminal shape indicator "A" and the package type indicator "X" and "Z" are omitted from the seal.

DIP 8pin

| Type | I/O isolation voltage | Output rating* | | Part No. | | | | Packing quantity | |
|------------|-----------------------|----------------|--------|-----------------------|------------------------|------------|----------------------------------|---|----------------------------------|
| | | | | Through hole terminal | Surface-mount terminal | | Tape and reel packing style | | |
| | | | | | | | Picked from the 1/2/3/4-pin side | | Picked from the 5/6/7/8-pin side |
| AC/DC type | Reinforced 5,000 V | 60 V | 400 mA | AQW282EH | AQW282EHA | AQW282EHAX | AQW282EHAZ | Tube: 1 tube contains 40 pcs. Tube: 1 batch contains 400 pcs. Tape and reel: 1,000 pcs. | |
| | | 350 V | 120 mA | AQW280EH | AQW280EHA | AQW280EHAX | AQW280EHAZ | | |
| | | 400 V | 100 mA | AQW284EH | AQW284EHA | AQW284EHAX | AQW284EHAZ | | |

*Indicate the peak AC and DC values.

Note: For space reasons, the SMD terminal shape indicator "A" and the package type indicator "X" and "Z" are omitted from the seal.

RATING

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

DIP 4pin

| Item | | Symbol | AQY282EH | AQY280EH | AQY284EH | 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 | 60 V | 350 V | 400 V | |
| | Continuous load current (peak AC) | I_L | 0.5 A | 0.13 A | 0.12 A | |
| | Peak load current | I_{peak} | 1.5 A | 0.4 A | 0.3 A | 100 ms (1 shot), $V_L = DC$ |
| | Power dissipation | P_{out} | 500 mW | | | |
| Total power dissipation | | P_T | 550 mW | | | |
| I/O isolation voltage | | V_{iso} | 5,000 V AC | | | |
| Operating temperature | | T_{opr} | -40°C to +85°C -40°F to +185°F | | | Non-condensing at low temperature |
| Storage temperature | | T_{stg} | -40°C to +100°C -40°F to +212°F | | | |

DIP 8pin

| Item | | Symbol | AQW282EH | AQW280EH | AQW284EH | 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 | 60 V | 350 V | 400 V | |
| | Continuous load current (peak AC) | I_L | 0.4 (0.5) A | 0.12 (0.14) A | 0.1 (0.13) A | (): in case of using only 1 channel |
| | Peak load current | I_{peak} | 1.2 A | 0.36 A | 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} | 5,000 V AC | | | |
| Operating temperature | | T_{opr} | -40°C to +85°C -40°F to +185°F | | | Non-condensing at low temperature |
| Storage temperature | | T_{stg} | -40°C to +100°C -40°F to +212°F | | | |

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

DIP4pin

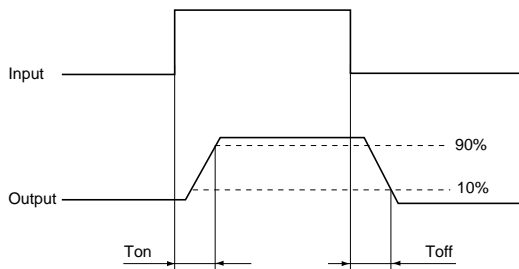
| Item | | Symbol | AQY282EH | AQY280EH | AQY284EH | Condition |
|----------------------------------|---------------------------|-----------|---|----------|----------|---|
| Input | LED operate current | Typical | 1.8 mA | | | $I_L = \text{Max.}$ |
| | | Maximum | 3.0 mA | | | |
| | LED turn off current | Minimum | 0.2 mA | | | $I_L = \text{Max.}$ |
| | | Typical | 1.6 mA | | | |
| | LED dropout voltage | Typical | 1.14 V (1.25 V at $I_F = 50\text{mA}$) | | | $I_F = 5 \text{ mA}$ |
| Maximum | | 1.5 V | | | | |
| Output | On resistance | Typical | 0.85Ω | 20Ω | 28Ω | $I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ Within 1 s on time |
| | | Maximum | 2.5Ω | 25Ω | 35Ω | |
| | Off state leakage current | Maximum | I_{Leak} | 1μA | | $I_F = 0 \text{ mA}$ $V_L = \text{Max.}$ |
| Transfer characteristics | Turn on time* | Typical | 1.8 ms | 1.5 ms | | $I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ |
| | | Maximum | 5 ms | | | |
| | Turn off time* | Typical | 0.5 ms | | | $I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ |
| | | Maximum | 2 ms | | | |
| | I/O capacitance | Typical | 0.8 pF | | | f = 1 MHz $V_B = 0 \text{ V}$ |
| Maximum | | 1.5 pF | | | | |
| Initial I/O isolation resistance | Minimum | R_{iso} | 1,000 MΩ | | 500 V DC | |

AQ○28○EH

DIP8pin

| Item | | | Symbol | AQW282EH | AQW280EH | AQW284EH | Condition |
|----------------------------------|---------------------------|-----------|---|----------|----------|----------------------|---|
| Input | LED operate current | Typical | I_{Fon} | 1.8 mA | | | $I_L = \text{Max.}$ |
| | | Maximum | | 3.0 mA | | | |
| | LED turn off current | Minimum | I_{Foff} | 0.2 mA | | | $I_L = \text{Max.}$ |
| | | Typical | | 1.6 mA | | | |
| LED dropout voltage | Typical | V_F | 1.14 V (1.25 V at $I_F = 50\text{mA}$) | | | $I_F = 5 \text{ mA}$ | |
| | Maximum | | 1.5 V | | | | |
| Output | On resistance | Typical | R_{on} | 0.85Ω | 20Ω | 28Ω | $I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ Within 1 s on time |
| | | Maximum | | 2.5Ω | 25Ω | 35Ω | |
| | Off state leakage current | Maximum | I_{Leak} | 1μA | | | $I_F = 0 \text{ mA}$ $V_L = \text{Max.}$ |
| Transfer characteristics | Turn on time* | Typical | T_{on} | 1.8 ms | 1.5 ms | | $I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ |
| | | Maximum | | 5 ms | | | |
| | Turn off time* | Typical | T_{off} | 0.5 ms | | | $I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ |
| | | Maximum | | 2 ms | | | |
| | I/O capacitance | Typical | C_{iso} | 0.8 pF | | | $f = 1 \text{ MHz}$ $V_B = 0\text{V}$ |
| | | Maximum | | 1.5 pF | | | |
| Initial I/O isolation resistance | Minimum | R_{iso} | 1,000 MΩ | | | 500 V DC | |

*Turn on/Turn off time



3-4 the terminal leads receive solder plating or solder dip plating.

REFERENCE DATA

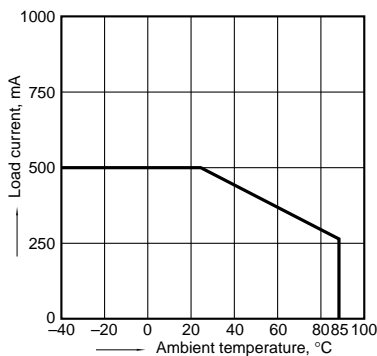
[DIP type]

1. Load current vs. ambient temperature characteristics

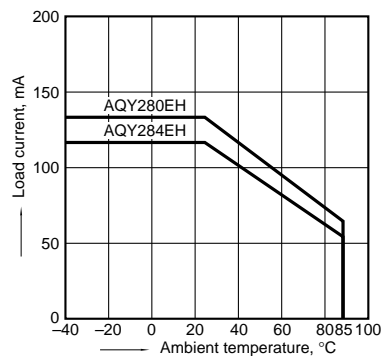
Allowable ambient temperature: -40°C to +85°C
-40°F to +185°F

Type of connection: A

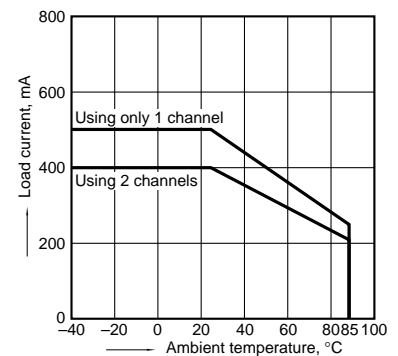
(1) AQY282EH



(2) AQY280EH, AQY284EH



(3) AQW282EH



DIMENSIONS

AQY28OS



Recommended mounting pad
(Top view)



Terminal thickness = 0.15 .006
General tolerance: ±0.1 ±.004

Tolerance: ±0.1 ±.004

AQW28OS



Recommended mounting pad
(Top view)

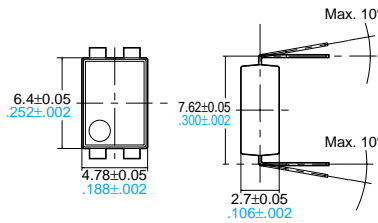


Terminal thickness = 0.15 .006
General tolerance: ±0.1 ±.004

Tolerance: ±0.1 ±.004

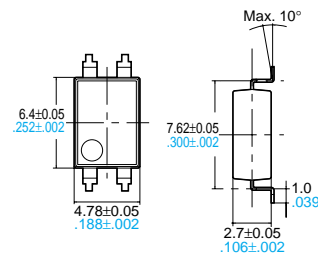
AQY28EH(A)

Through hole terminal type



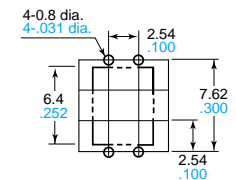
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

Surface mount terminal type



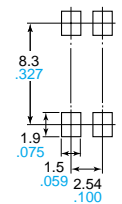
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

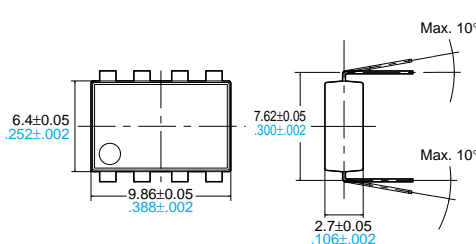
Mounting pad (Top view)



Tolerance: ±0.1 ±.004

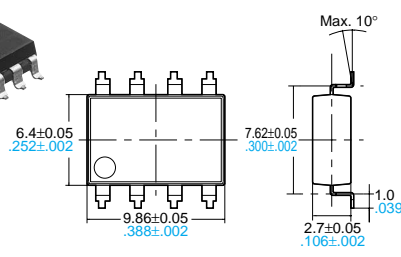
AQW28EH(A)

Through hole terminal type



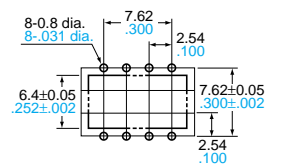
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

Surface mount terminal type



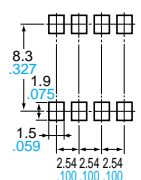
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

PC board pattern
(Bottom view)



Tolerance: ±0.1 ±.004

Mounting pad (Top view)



Tolerance: ±0.1 ±.004

Mouser Electronics

Authorized Distributor

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[AQW282EH](#) [AQW282EHA](#) [AQW282EHAX](#) [AQW282EHAZ](#)



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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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