

Panasonic
ideas for life

**GU (General Use)-E Type
[1, 2-Channel (Form A)
4, 6-Pin Type]**

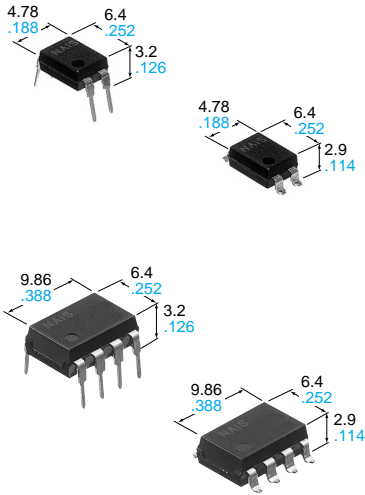
**PhotoMOS
RELAYS**

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 | | |
| | | | | | | | Tube packing style | | Picked from the 1/2-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 | | |
| | | | | | | | Tube packing style | | Picked from the 1/2/3/4-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

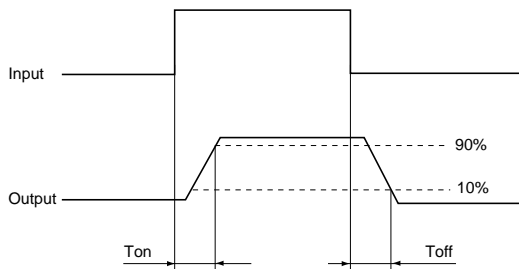
| Item | | Symbol | AQY282EH | AQY280EH | AQY284EH | Condition |
|----------------------------------|---------------------------|-----------|---|----------|----------|---|
| Input | LED operate current | Typical | 1.8 mA | | | $I_L = \text{Max.}$ |
| | | Maximum | 3.0 mA | | | |
| | LED turn off current | 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

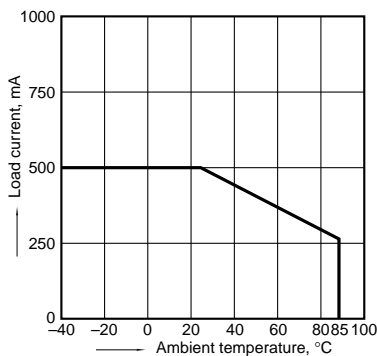
[DIP type]

1. Load current vs. ambient temperature characteristics

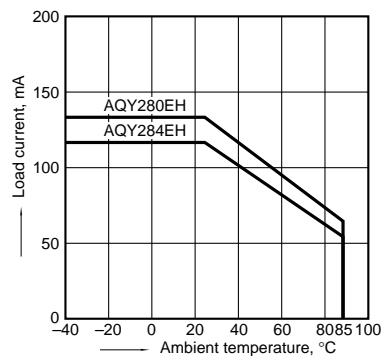
Allowable ambient temperature: -40°C to +85°C
-40°F to +185°F

Type of connection: A

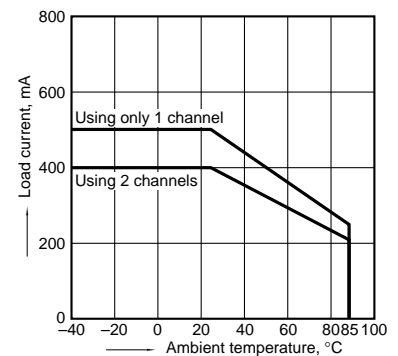
(1) AQY282EH



(2) AQY280EH, AQY284EH

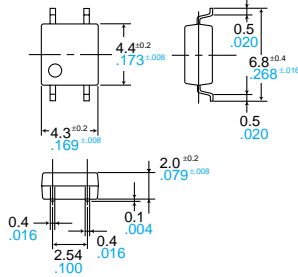


(3) AQW282EH

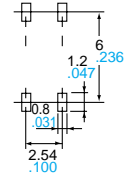


DIMENSIONS

AQY28OS



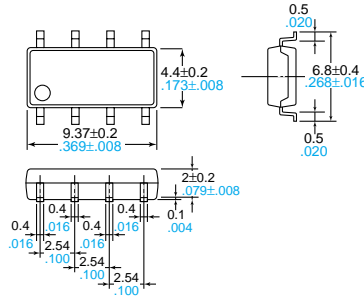
Recommended mounting pad
(Top view)



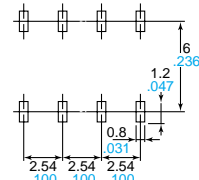
Terminal thickness = 0.15 .006
General tolerance: ±0.1 ±.004

Tolerance: ±0.1 ±.004

AQW28OS



Recommended mounting pad
(Top view)

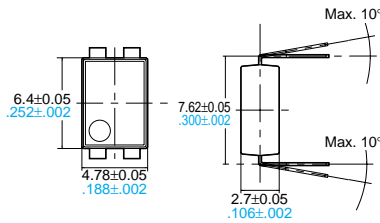


Terminal thickness = 0.15 .006
General tolerance: ±0.1 ±.004

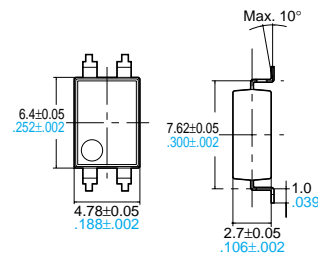
Tolerance: ±0.1 ±.004

AQY28EH(A)

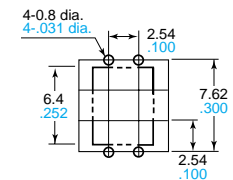
Through hole terminal type



Surface mount terminal type



PC board pattern (Bottom view)



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

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

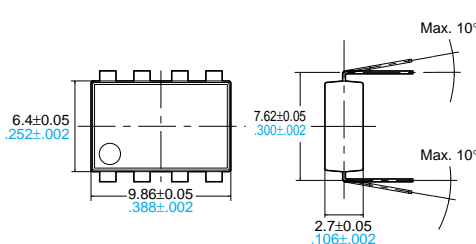
Tolerance: ±0.1 ±.004

Mounting pad (Top view)

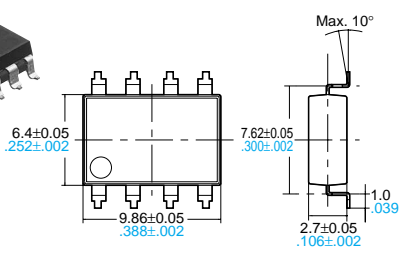
Tolerance: ±0.1 ±.004

AQW28EH(A)

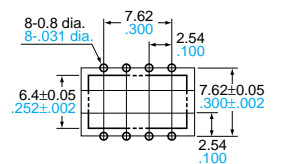
Through hole terminal type



Surface mount terminal type



PC board pattern
(Bottom view)



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

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

Tolerance: ±0.1 ±.004

Mounting pad (Top view)

Tolerance: ±0.1 ±.004

Mouser Electronics

Authorized Distributor

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

[Panasonic:](#)

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

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А