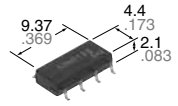
Panasonic
ideas for life

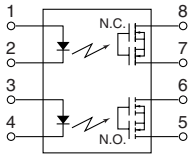
Super miniature design, SOP (1Form A/1Form B) 8-pin type. Controls load voltage 60V, 350V.

GU PhotoMOS (AQW61○S)

AQW610S (AQW612S)



mm inch



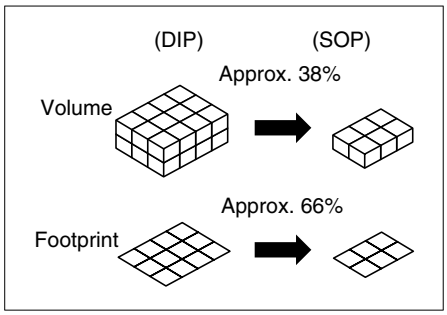
FEATURES

1. 60V type couples high capacity (0.45A) with low on-resistance (1Ω).

Item	GU SOP (1 Form A/ 1 Form B type) type	
Part No.	AQW610S	AQW612S NEW
Load voltage	350V	60V
Continuous load current	0.1A	0.45A
ON resistance (typ.)	18Ω	1Ω

2. 2 channels in super miniature design

The device comes in a super-miniature SO package measuring (W) 4.4 × (L) 9.37 × (H) 2.1 mm (W) .173× (L) .369× (H) .083 inch —approx. 38% of the volume and 66% of the footprint size of DIP type PhotoMOS relays.



3. Tape and reel

The device comes standard in a tape and reel (1,000 pcs./reel) to facilitate automatic insertion machines.

Applicable for 1 Form A 1 Form B use as well as two independent 1 Form A and 1 Form B use

Controls low-level analog signals

PhotoMOS relays feature extremely low closed-circuit offset voltage to enable control of low-level analog signals without distortion

4. Low-level off-state leakage current

TYPICAL APPLICATIONS

- Power supply
- Measuring equipment
- Security equipment
- Telephone equipment
- Computer input machine
- Industrial robots
- High-speed inspection machines

TYPES

Type	Output rating*		Package size	Part No.			Packing quantity	
	Load voltage	Load current		Tube packing style	Tape and reel packing style		Tube	Tape and reel
AC/DC type	60V	450mA	SOP8pin	AQW612S	AQW612SX (Picked from the 1/2/3/4-pin side)	AQW612SZ (Picked from the 5/6/7/8-pin side)	1 tube contains: 50 pcs. 1 batch contains: 1,000 pcs.	1,000 pcs.
	350V	100mA		AQW610S	AQW610SX (Picked from the 1/2/3/4-pin side)	AQW610SZ (Picked from the 5/6/7/8-pin side)		

* Indicate the peak AC and DC values.

Note: For space reasons, the package style indicator "X" or "Z" are not marked on the relay.

RATING

1. AC/DC type

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

Item		Symbol	AQW612S	AQW610S	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	
	Continuous load current	I_L	0.45 A (0.55 A)	0.1 A (0.13 A)	Peak AC, DC ( ): in case of using only 1a or 1b, 1 channel
	Peak load current	I_{peak}	1.5 A	0.3 A	100 ms (1 shot), V_L = DC
	Power dissipation	P_{out}	600 mW		
Total power dissipation		P_T	650 mW		
I/O isolation voltage		V_{iso}	1,500 V AC		
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		

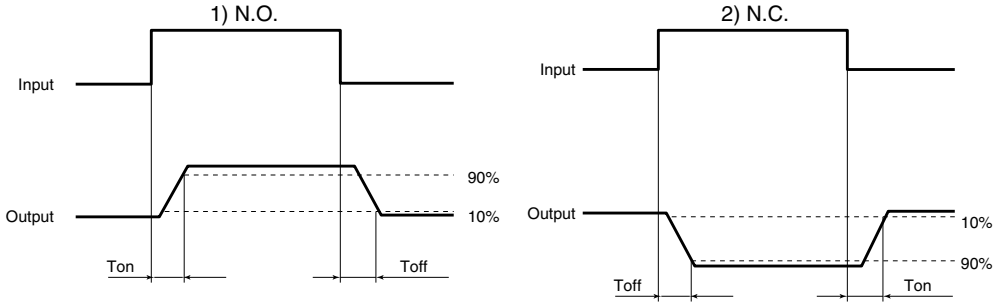
GU PhotoMOS (AQW61❍S)

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

Item			Symbol	AQW612S	AQW610S	Condition
Input	LED operate current	Typical	I_{Fon}	0.9 mA		I_L = Max.
		Maximum		3 mA		
	LED reverse current	Minimum	I_{Foff}	0.4 mA		I_L = Max.
		Typical		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}	1 Ω	18 Ω	I_F = 5 mA (N.O.) I_F= 0 mA (N.C.) I_L = Max. Within 1 s on time
		Maximum		2.5 Ω	25 Ω	
	Off state leakage current	Maximum	I_{leak}	1 μA		I_F = 0 mA (N.O.) I_F= 5 mA (N.C.) V_L = Max.
Transfer characteristics	Operate time*	Typical	T_{off}	0.65 ms (N.O.), 0.9 ms (N.C.)	0.28 ms (N.O.), 0.52 ms (N.C.)	I_F = 0 mA → 5 mA I_L = Max.
		Maximum		3.0 ms	1.0 ms	
	Reverse time*	Typical	T_{on}	0.08 ms (N.O.), 0.2 ms (N.C.)	0.04 ms (N.O.), 0.23 ms (N.C.)	I_F = 5 mA → 0 mA I_L = Max.
		Maximum		1.0 ms	1.0 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: Recommendable LED forward current I_F = 5 mA. For type of connection.

*Operate/Reverse time

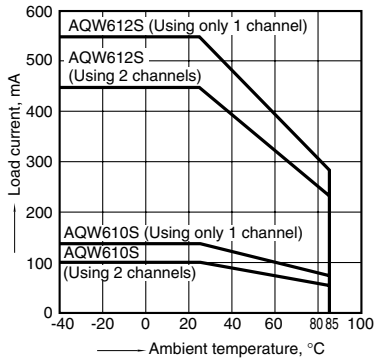


■ For Dimensions.
■ For Schematic and Wiring Diagrams.
■ For Cautions for Use.

REFERENCE DATA

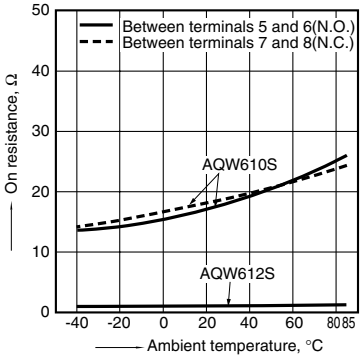
1. Load current vs. ambient temperature characteristics

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



2. On resistance vs. ambient temperature characteristics

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



3. Operate time vs. ambient temperature characteristics

LED current: 5 mA;
Load voltage: Max. (DC);
Continuous load current: Max. (DC)