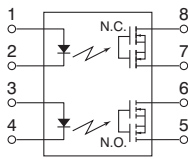


CAD Data

mm inch



## FEATURES

1. Approx. 1/2 the space compared with the mounting of a set of 1 Form A and 1 Form B PhotoMOS relays
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 relay.

## RATING

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

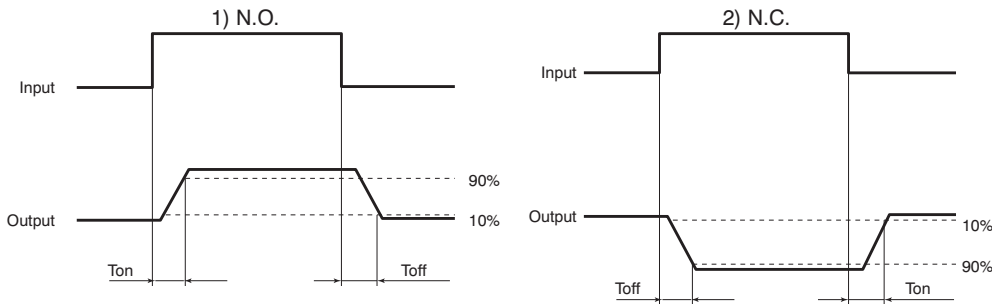
Item		Symbol	AQW614(A)	Remarks
Input	LED forward current	$I_F$	50 mA	
	LED reverse voltage	$V_R$	5 V	
	Peak forward current	$I_{FP}$	1 A	$f = 100$ Hz, Duty factor = 0.1%
	Power dissipation	$P_{in}$	75 mW	
Output	Load voltage (peak AC)	$V_L$	400 V	
	Continuous load current	$I_L$	0.1 A (0.13 A)	Peak AC, 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	

# GU Form A & B (AQW614)

## 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
		Maximum	$I_{Foff}$ (N.C.)	3 mA
	LED reverse current	Minimum	$I_{Foff}$ (N.O.)	0.4 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)	
	Maximum		1.5 V	
Output	On resistance	Typical	$R_{on}$	27 $\Omega$
		Maximum		50 $\Omega$
	Off state leakage current	Maximum	$I_{Leak}$	1 $\mu$ A
Transfer characteristics	Operate time*	Typical	$T_{on}$ (N.O.)	0.28 ms (N.O.) 0.43 ms (N.C.)
		Maximum		$T_{off}$ (N.C.)
	Reverse time*	Typical	$T_{off}$ (N.O.)	0.04 ms (N.O.) 0.3 ms (N.C.)
		Maximum		$T_{on}$ (N.C.)
	I/O capacitance	Typical	$C_{iso}$	0.8 pF
Maximum		1.5 pF		
Initial I/O isolation resistance	Minimum	$R_{iso}$	1,000 M $\Omega$	500 V DC

\*Operate/Reverse time



## RECOMMENDED OPERATING CONDITIONS

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

Item	Symbol	Recommended value	Unit
Input LED current	$I_F$	5	mA

### ■ Dimensions

### ■ Schematic and Wiring Diagrams

### ■ Cautions for Use

■ These products are not designed for automotive use.

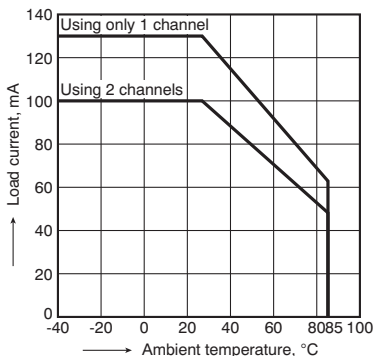
If you are considering to use these products for automotive applications, please contact your local Panasonic technical representative.

Please refer to our information on [PhotoMOS Relays for Automotive Applications](#).

## REFERENCE DATA

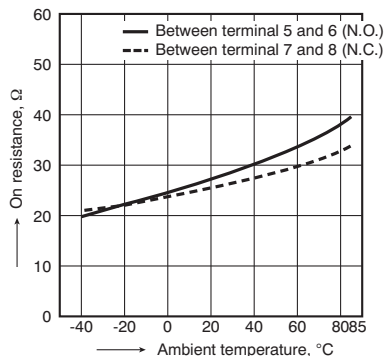
### 1. Load current vs. ambient temperature characteristics

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



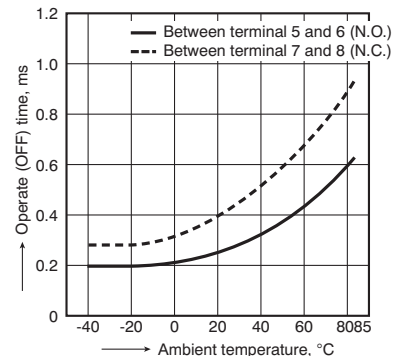
### 2. On resistance vs. ambient temperature characteristics

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



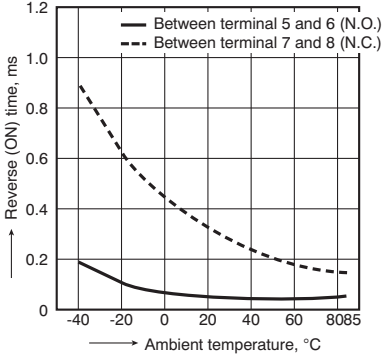
### 3. Operate time vs. ambient temperature characteristics

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



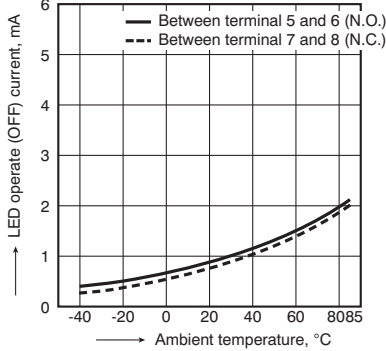
**4. Reverse time vs. ambient temperature characteristics**

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



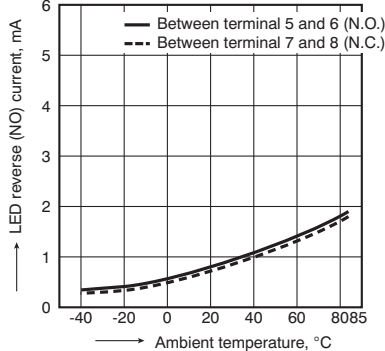
**5. LED operate current vs. ambient temperature characteristics**

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



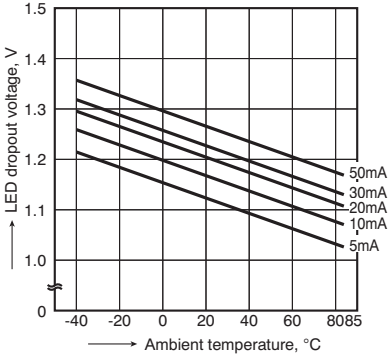
**6. LED reverse current vs. ambient temperature characteristics**

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



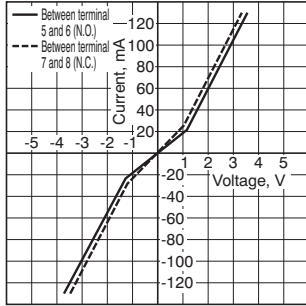
**7. LED dropout voltage vs. ambient temperature characteristics**

LED current: 5 to 50 mA



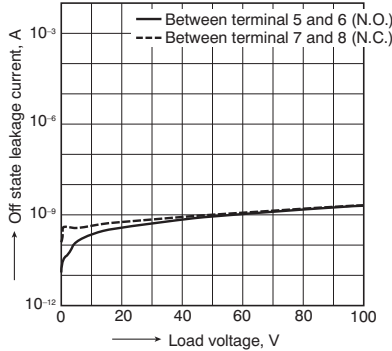
**8. Current vs. voltage characteristics of output at MOS portion**

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



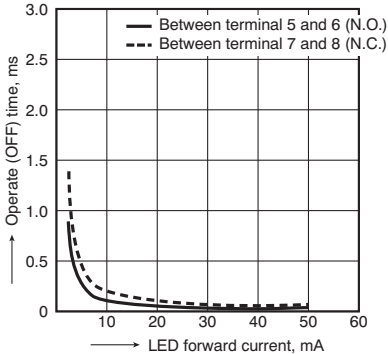
**9. Off state leakage current vs. load voltage characteristics**

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



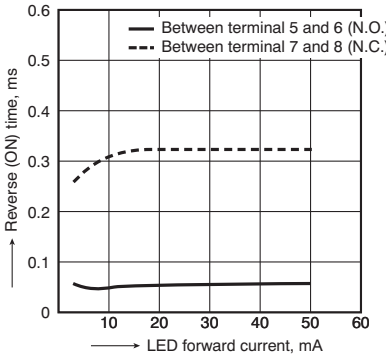
**10. Operate time vs. LED forward current characteristics**

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



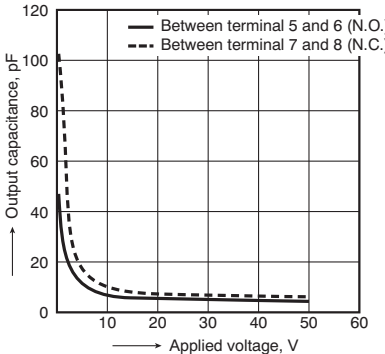
**11. Reverse time vs. LED forward current characteristics**

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



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