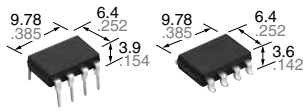




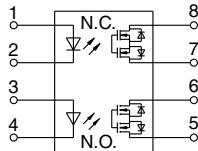
**Both N.O. and N.C. contacts incorporated in a DIP8-pin package**

**PhotoMOS®  
GU 1 Form A & 1 Form B  
(AQW614)**



(Height includes standoff)

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 and 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
				Tube packing style	Tape and reel packing style				
AC/DC dual use	400 V	100 mA	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)

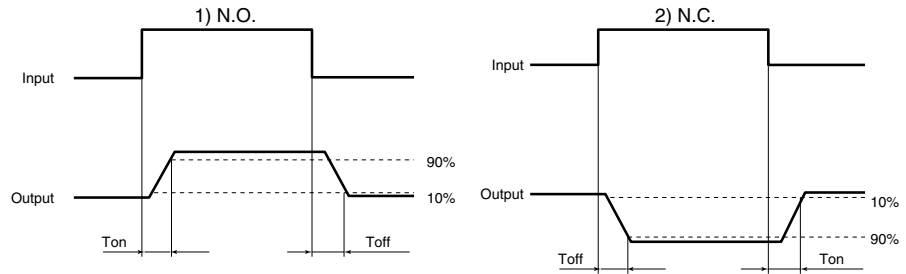
Item	Symbol	AQW614(A)	Remarks	
Input	LED forward current	I <sub>F</sub>	50 mA	
	LED reverse voltage	V <sub>R</sub>	5 V	
	Peak forward current	I <sub>FP</sub>	1 A	f = 100 Hz, Duty factor = 0.1%
	Power dissipation	P <sub>in</sub>	75 mW	
Output	Load voltage (peak AC)	V <sub>L</sub>	400 V	
	Continuous load current	I <sub>L</sub>	0.1 A (0.13 A)	Peak AC, DC ( ): in case of using only 1a or 1b, 1 channel
	Peak load current	I <sub>peak</sub>	0.3 A	100 ms (1 shot), V <sub>L</sub> = DC
	Power dissipation	P <sub>out</sub>	800 mW	
Total power dissipation	P <sub>T</sub>	850 mW		
I/O isolation voltage	V <sub>iso</sub>	1,500 Vrms	Between input and output/between contact sets	
Ambient temperature	Operating	T <sub>opr</sub>	-40 to +85°C -40 to +185°F	
	Storage	T <sub>stg</sub>	-40 to +100°C -40 to +212°F	

# GU 1 Form A & 1 Form 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.)	1 ms	
	Reverse time*	Typical	$T_{off}$ (N.O.)	0.04 ms (N.O.) 0.3 ms (N.C.)	
		Maximum	$T_{on}$ (N.C.)	1 ms	
	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



## 3. Recommended operating conditions (Ambient temperature: 25°C 77°F)

Please use under recommended operating conditions to obtain expected characteristics.

Item	Symbol	Number of used channels	Min.	Max.	Unit
LED current	$I_F$		5	30	mA
Load voltage (Peak AC)	$V_L$		—	320	V
AQW614(A)	Continuous load current	1ch	—	0.13	A
		2ch	—	0.1	

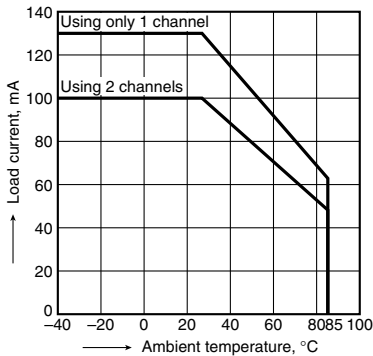
■ These products are not designed for automotive use.

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

## REFERENCE DATA

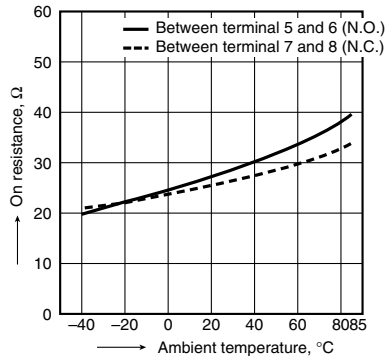
### 1. Load current vs. ambient temperature characteristics

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



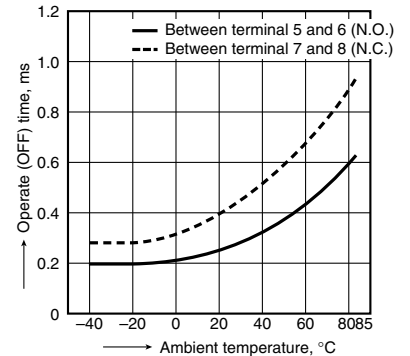
### 2. On resistance vs. ambient temperature characteristics

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)



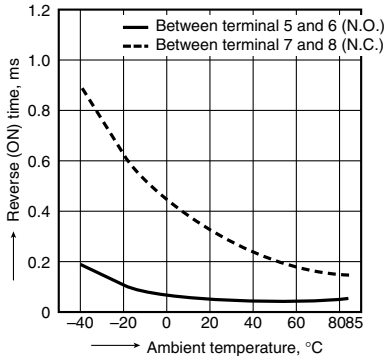
### 3. Operate time vs. ambient temperature characteristics

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



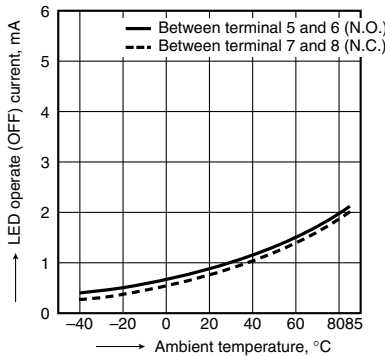
### 4. Reverse time vs. ambient temperature characteristics

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



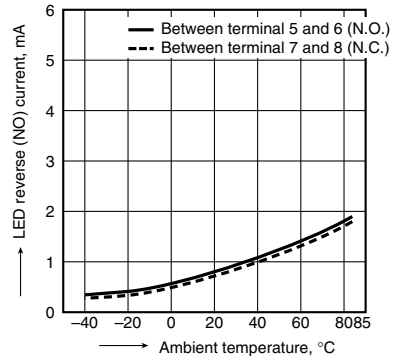
### 5. LED operate current vs. ambient temperature characteristics

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



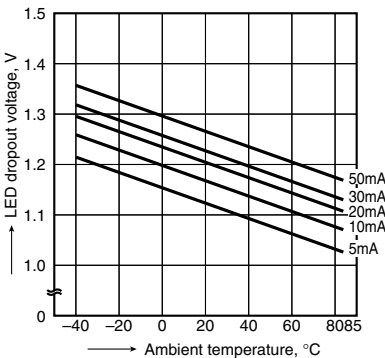
### 6. LED reverse current vs. ambient temperature characteristics

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



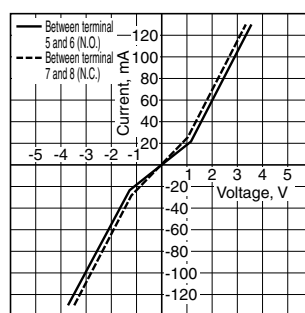
### 7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



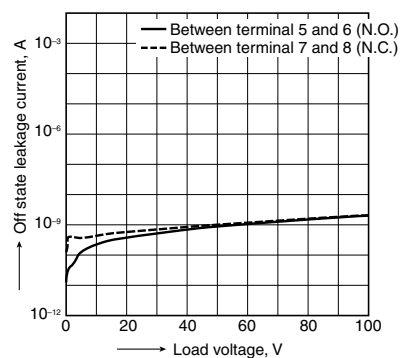
### 8. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 5 and 6, 7 and 8;  
 Ambient temperature:  $25^{\circ}\text{C}$   $77^{\circ}\text{F}$



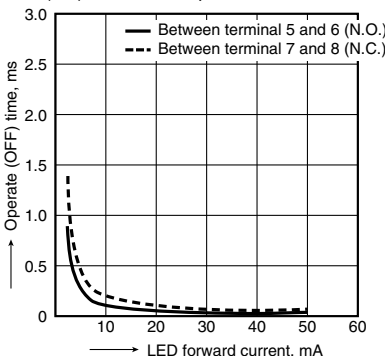
### 9. Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8;  
 Ambient temperature:  $25^{\circ}\text{C}$   $77^{\circ}\text{F}$



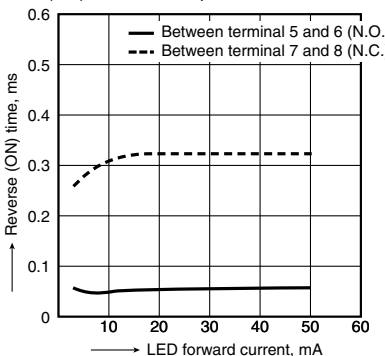
### 10. Operate time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8;  
 Load voltage: 400 V (DC); Continuous load current:  
 100 mA (DC); Ambient temperature:  $25^{\circ}\text{C}$   $77^{\circ}\text{F}$



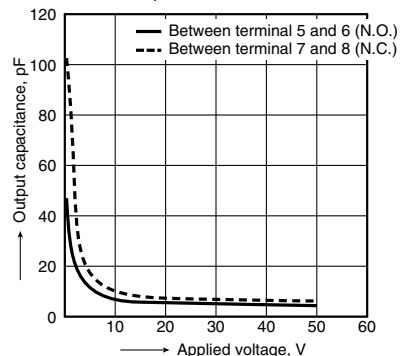
### 11. Reverse time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8;  
 Load voltage: 400 V (DC); Continuous load current:  
 100 mA (DC); Ambient temperature:  $25^{\circ}\text{C}$   $77^{\circ}\text{F}$



### 12. Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8;  
 LED current: 0 mA (N.O.), 5 mA (N.C.); Frequency:  
 1 MHz; Ambient temperature:  $25^{\circ}\text{C}$   $77^{\circ}\text{F}$



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Please contact .....

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