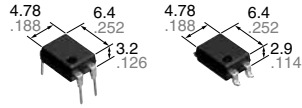


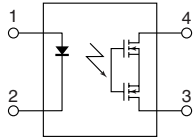
**4-pin high capacity of 1.1A,
I/O isolation voltage of
5,000V**

**PhotoMOS[®]
GU 1 Form A High Capacity
(AQY212GH)**



(Height includes standoff)

mm inch



RoHS compliant

FEATURES

- 1. Greatly increased capacity**
Continuous load current: 1.1A
- 2. Reinforced insulation**
I/O isolation voltage: 5,000 V AC
- 3. Compact 4-pin DIP type**
- 4. The improved performance relative to mercury or mechanical relays**

TYPICAL APPLICATIONS

- Measuring instruments
- Security and disaster-preventing system: use in I/O for alarm and security devices, etc.

TYPES

	Output rating*		Part No.				Packing quantity	
			Through hole terminal	Surface-mount terminal			Tube	Tape and reel
	Load voltage	Load current	Tube packing style		Tape and reel packing style			
				Picked from the 1/2-pin side	Picked from the 3/4-pin side			
AC/DC dual use	60 V	1.1 A	AQY212GH	AQY212GHA	AQY212GHAX	AQY212GHAZ	1 tube contains 100 pcs. 1 batch contains 1,000 pcs.	1,000 pcs.

*Indicate the peak AC and DC values.

Note: For space reasons, the three initial letters of the part number "AQY", 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)

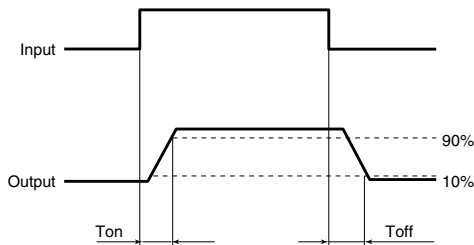
	Item	Symbol	AQY212GH(A)	Remarks
Input	LED forward current	I_F	50 mA	
	LED reverse voltage	V_R	5 V	
	Peak forward current	I_{FP}	1 A	$f = 100 \text{ Hz}$, Duty factor = 0.1%
	Power dissipation	P_{in}	75 mW	
Output	Load voltage (peak AC)	V_L	60 V	
	Continuous load current	I_L	1.1 A	Peak AC, DC
	Peak load current	I_{peak}	3.0 A	100ms (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	
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 1 Form A High Capacity (AQY212GH)

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

Item		Symbol	AQY212GH(A)	Condition
Input	LED operate current	Typical	1.1 mA	$I_L = 100\text{mA}$
		Maximum	3 mA	
	LED turn off current	Minimum	0.3 mA	$I_L = 100\text{mA}$
		Typical	1.0 mA	
LED dropout voltage	Typical	1.32 V (1.14 V at $I_F = 5\text{ mA}$)		$I_F = 50\text{ mA}$
	Maximum	1.5 V		
Output	On resistance	Typical	0.34 Ω	$I_F = 5\text{ mA}$ $I_L = \text{Max.}$ Within 1 s on time
		Maximum	0.7 Ω	
	Off state leakage current	Maximum	1 μA	$I_F = 0\text{ mA}$ $V_L = \text{Max.}$
Transfer characteristics	Turn on time*	Typical	1.3 ms	$I_F = 5\text{ mA}$ $I_L = 100\text{ mA}$ $V_L = 10\text{ V}$
		Maximum	5.0 ms	
	Turn off time*	Typical	0.1 ms	$I_F = 5\text{ mA}$ $I_L = 100\text{ mA}$ $V_L = 10\text{ V}$
		Maximum	0.5 ms	
	I/O capacitance	Typical	0.8 pF	$f = 1\text{ MHz}$ $V_B = 0\text{ V}$
		Maximum	1.5 pF	
Initial I/O isolation resistance	Minimum	1,000 M Ω	500 V DC	

*Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

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

Item	Symbol	Recommended value	Unit
Input LED current	I_F	5 to 10	mA

■ For Dimensions.

■ For Schematic and Wiring Diagrams.

■ For Cautions for Use.

■ These products are not designed for automotive use.

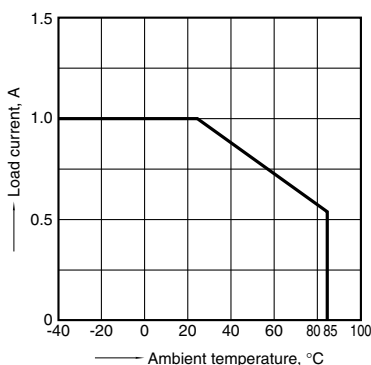
If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

For more information.

REFERENCE DATA

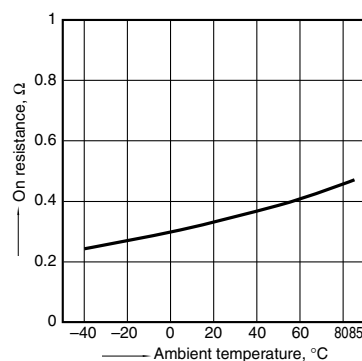
1. Load current vs. ambient temperature characteristics

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



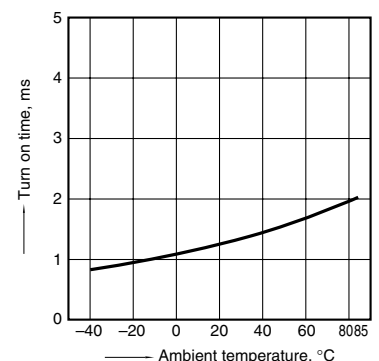
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4;
LED current: 5 mA; Load voltage: Max. (DC)
Continuous load current: Max.(DC)



3. Turn on time vs. ambient temperature characteristics

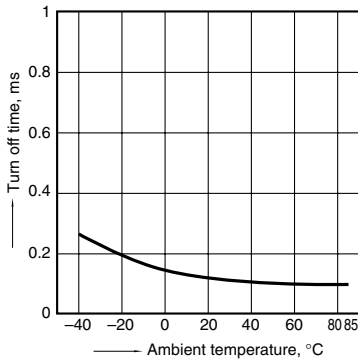
LED current: 5 mA; Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



GU 1 Form A High Capacity (AQY212GH)

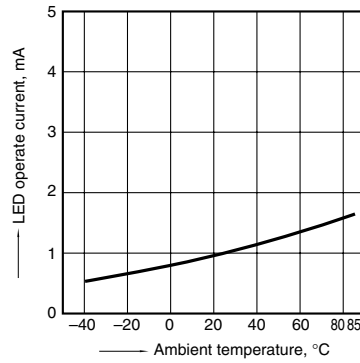
4. Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



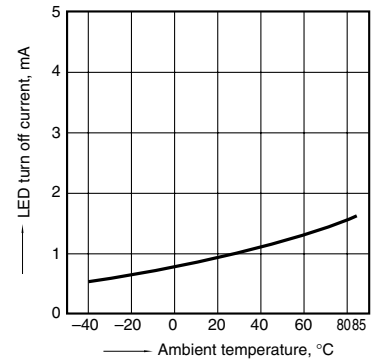
5. LED operate current vs. ambient temperature characteristics

Load voltage: 10 V (DC);
Continuous load current: 100mA (DC)



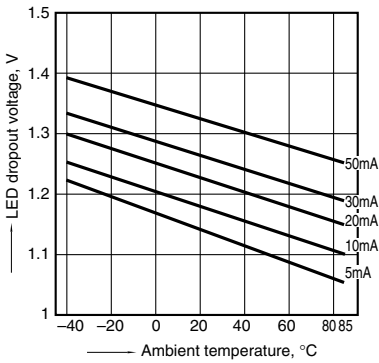
6. LED turn off current vs. ambient temperature characteristics

Load voltage: 10 V (DC);
Continuous load current: 100mA (DC)



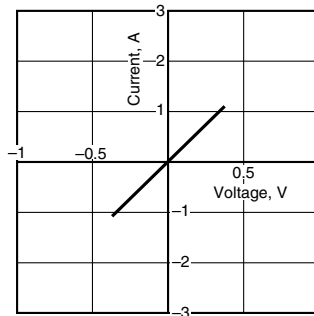
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



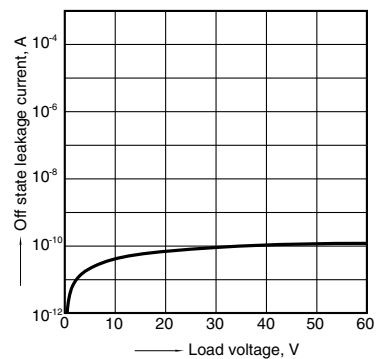
8. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4;
Ambient temperature: 25°C 77°F



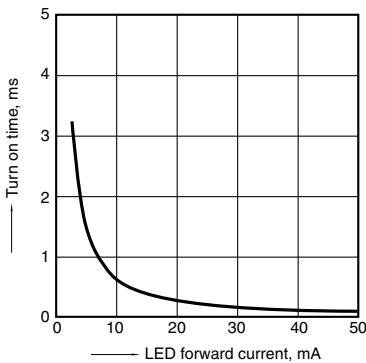
9. Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4;
Ambient temperature: 25°C 77°F



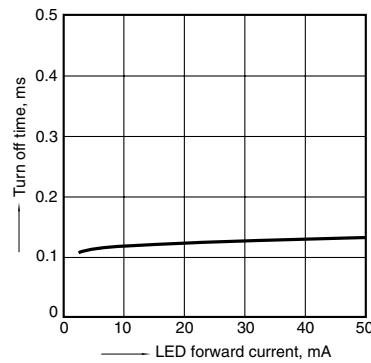
10. Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;
Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC);
Ambient temperature: 25°C 77°F



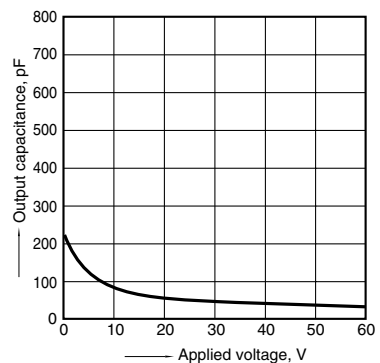
11. Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;
Load voltage: 10 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 3 and 4;
Frequency: 1 MHz;
Ambient temperature: 25°C 77°F



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