

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

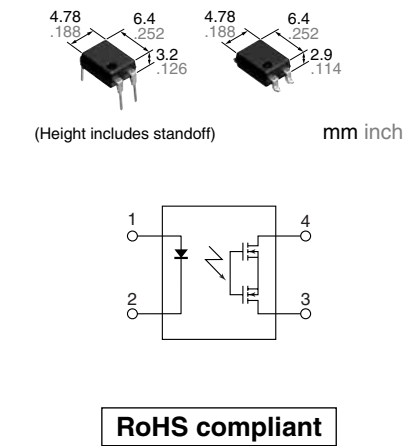
PhotoMOS[®]
GU 1 Form A High Capacity
(AQY212GH)

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				
	Load voltage	Load current	Tube packing style		Tape and reel packing style		Tube	Tape and reel
		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)

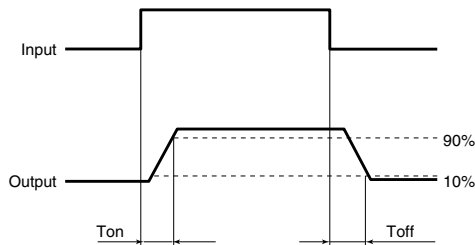
Item		Symbol	AQY212GH(A)	Remarks
Input	LED forward current	I _F	50 mA	
	LED reverse voltage	V _R	5 V	
	Peak forward current	I _{FP}	1 A	f = 100 Hz, Duty factor = 0.1%
	Power dissipation	P _{in}	75 mW	
Output	Load voltage (peak AC)	V _L	60 V	
	Continuous load current	I _L	1.1 A	Peak AC, DC
	Peak load 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	

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

Item			Symbol	AQY212GH(A)	Condition
Input	LED operate current	Typical	I_{Fon}	1.1 mA	$I_L = 100\text{mA}$
		Maximum		3 mA	
	LED turn off current	Minimum	I_{Foff}	0.3 mA	$I_L = 100\text{mA}$
		Typical		1.0 mA	
Output	LED dropout voltage	Typical	V_F	1.32 V (1.14 V at $I_F = 5\text{ mA}$)	$I_F = 50\text{ mA}$
		Maximum		1.5 V	
	On resistance	Typical	R_{on}	0.34 Ω	$I_F = 5\text{ mA}$ $I_L = \text{Max.}$ Within 1 s on time
		Maximum		0.7 Ω	
Transfer characteristics	Off state leakage current	Maximum	I_{Leak}	1 μA	$I_F = 0\text{ mA}$ $V_L = \text{Max.}$
	Turn on time*	Typical	T_{on}	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	T_{off}	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	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 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.

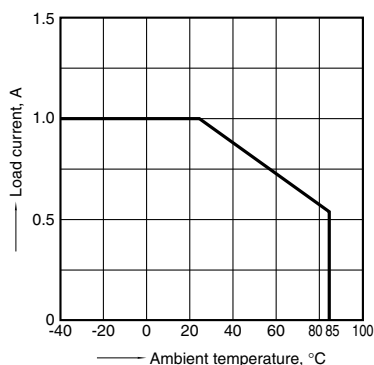
If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

For more information.

REFERENCE DATA

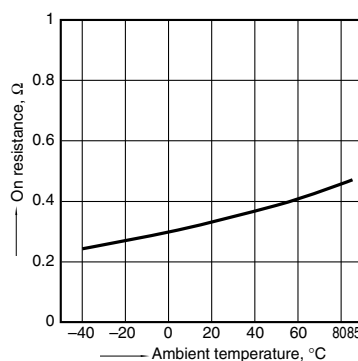
1. Load current vs. ambient temperature characteristics

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



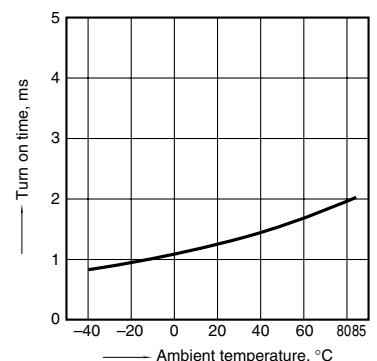
2. On resistance vs. ambient temperature characteristics

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

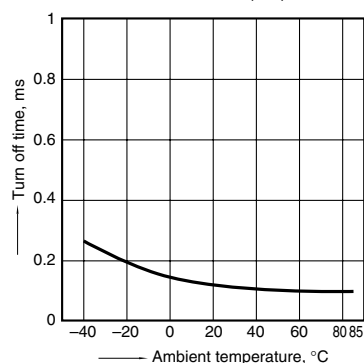
LED current: 5 mA; Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



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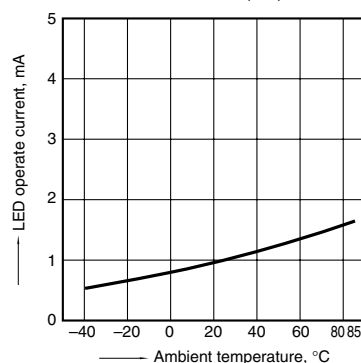
4. Turn off time vs. ambient temperature characteristics

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



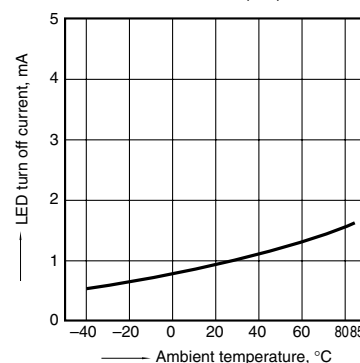
5. LED operate current vs. ambient temperature characteristics

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



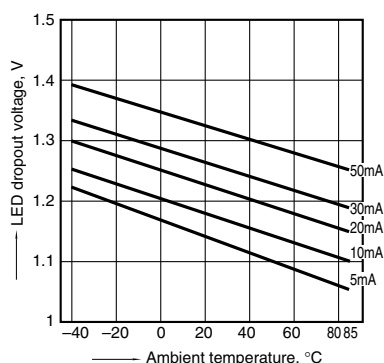
6. LED turn off current vs. ambient temperature characteristics

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



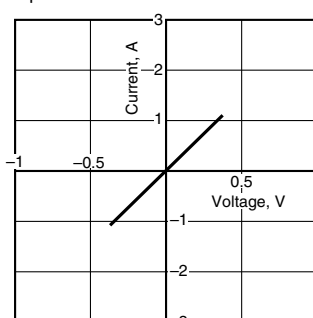
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



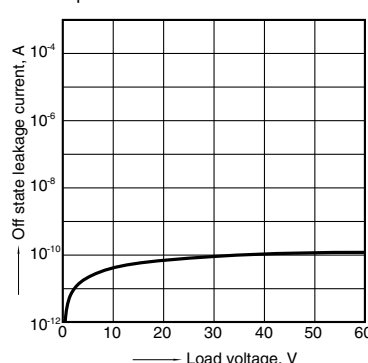
8. Current vs. voltage characteristics of output at MOS portion

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



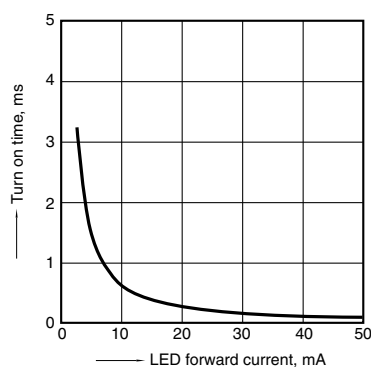
9. Off state leakage current vs. load voltage characteristics

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



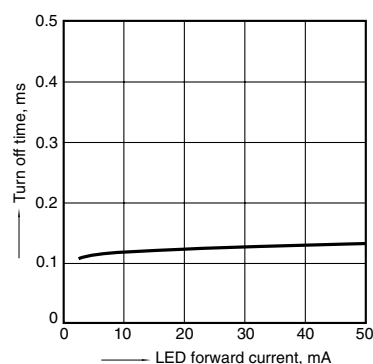
10. Turn on time vs. LED forward current characteristics

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



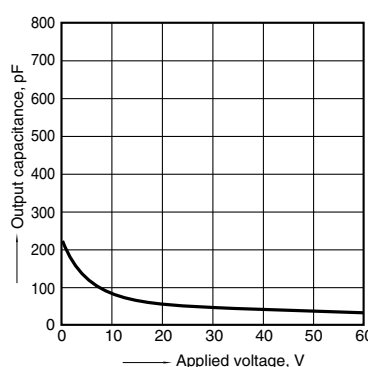
11. Turn off time vs. LED forward current characteristics

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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