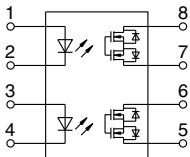
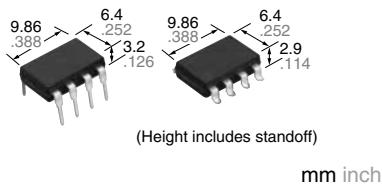




Normally closed type
with reinforced insulation

PhotoMOS®
GE 2 Form B
(AQW414EH)



RoHS compliant

FEATURES

- 1. Reinforced insulation of 5,000 V**
More than 0.4 mm internal insulation distance between inputs and outputs. Con-forms to EN41003, EN60950 (reinforced insulation).
- 2. Applicable for 2 Form B use as well as two independent 1 Form B use**
- 3. Controls low-level analog signals**
PhotoMOS feature extremely low closed-circuit offset voltage to enable control of low-level analog signals without distortion.
- 4. High sensitivity and high speed response**
Can control max. 0.13 A load current with 5 mA input current. Fast operation speed of Typ. 0.8 ms.
- 5. Low-level off state leakage current**

TYPICAL APPLICATIONS

- Modem
- Telephone equipment
- Electricity, plant equipment
- Security equipment
- Sensing equipment

TYPES

	I/O isolation voltage	Output rating*		Package	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 1/2/3/4-pin side	Picked from the 5/6/7/8-pin side		
AC/DC dual use	Reinforced 5,000 Vrms	400 V	100 mA	DIP8-pin	AQW414EH	AQW414EHA	AQW414EHAX	AQW414EHAZ	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

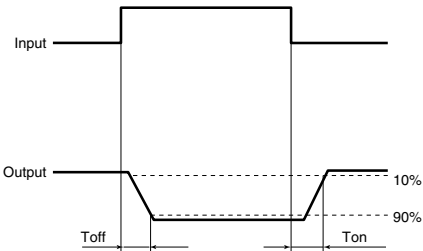
1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

Item		Symbol	AQW414EH(A)	Remarks
Input	LED forward current	I _F	50mA	
	LED reverse voltage	V _R	5V	
	Peak forward current	I _{FP}	1A	f =100 Hz, Duty factor = 0.1%
	Power dissipation	P _{in}	75mW	
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 1 channel.
	Peak load current	I _{peak}	0.3 A	100 ms (1 shot), V _L = DC
	Power dissipation	P _{out}	800mW	
Total power dissipation		P _T	850mW	
I/O isolation voltage		V _{iso}	5,000 Vrms	
Ambient temperature	Operating	T _{opr}	−40 to +85°C −40 to +185°F	(Non-icing at low temperatures)
	Storage	T _{stg}	−40 to +100°C −40 to +212°F	

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

Item			Symbol	AQW414EH(A)	Condition
Input	LED operate (OFF) current	Typical	I _{Off}	1.3mA	I _L =Max.
		Maximum		3.0mA	
	LED reverse (ON) current	Minimum	I _{Fon}	0.4mA	I _L =Max.
		Typical		1.2mA	
	LED dropout voltage	Typical	V _F	1.25 (1.14 V at I _F =5mA)	I _F =50mA
Maximum		1.5V			
Output	On resistance	Typical	R _{On}	26Ω	I _F =0mA I _L =Max. Within 1 s
		Maximum		35Ω	
	Off state leakage current	Maximum	I _{LLeak}	10μA	I _F =5mA V _L =Max.
Transfer characteristics	Operate (OFF) time*	Typical	T _{Off}	0.8ms	I _F =0mA→5mA I _L =Max.
		Maximum		3.0ms	
	Reverse (ON) time*	Typical	T _{On}	0.2ms	I _F =5mA→0mA I _L =Max.
		Maximum		1.0ms	
	I/O capacitance	Typical	C _{iso}	0.8pF	f =1MHz V _B =0V
		Maximum		1.5pF	
	Initial I/O isolation resistance	Minimum	R _{iso}	1,000MΩ	500V DC

*Operate/Reverse time



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

Please use under recommended operating conditions to obtain expected characteristics.

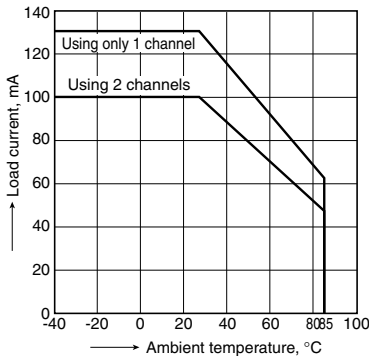
Item		Symbol	Number of used channels	Min.	Max.	Unit
AQW414EH(A)	LED current	I _F		5	30	mA
	Load voltage (Peak AC)	V _L		—	320	V
	Continuous load current	I _L	1ch 2ch	—	0.13 0.1	A

■ 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

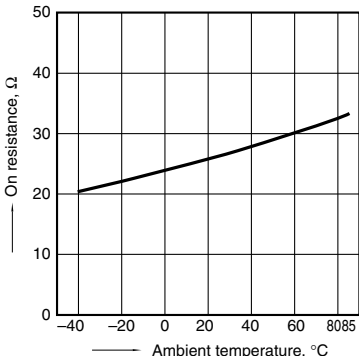
1. Load current vs. ambient temperature characteristics

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



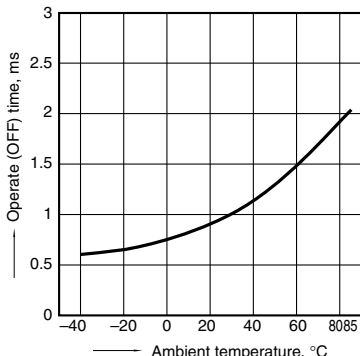
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
LED current: 0 mA; Load voltage: Max. (DC);
Continuous load current: Max. (DC)



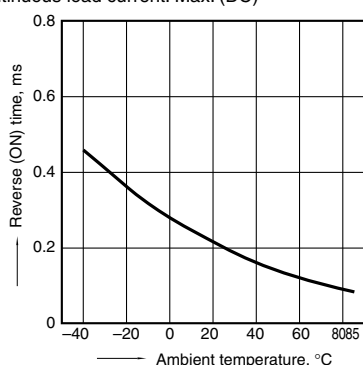
3. Operate (OFF) time vs. ambient temperature characteristics

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



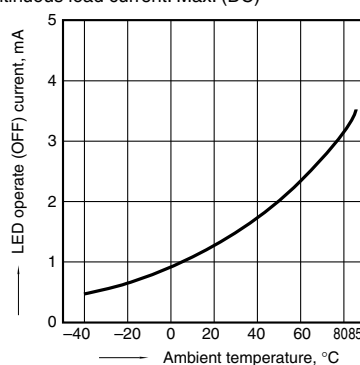
4. Reverse (ON) time vs. ambient temperature characteristics

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



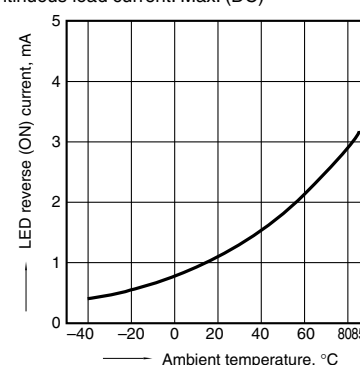
5. LED operate (OFF) current vs. ambient temperature characteristics

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



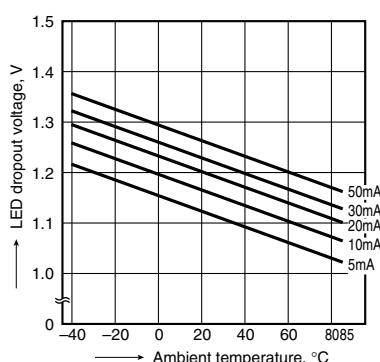
6. LED reverse (ON) current vs. ambient temperature characteristics

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



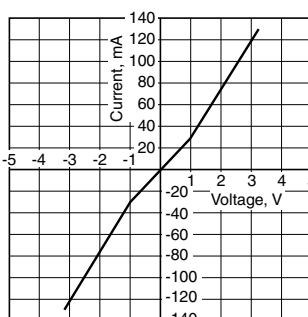
7. LED dropout voltage vs. ambient temperature characteristics;

LED current: 5 to 50 mA



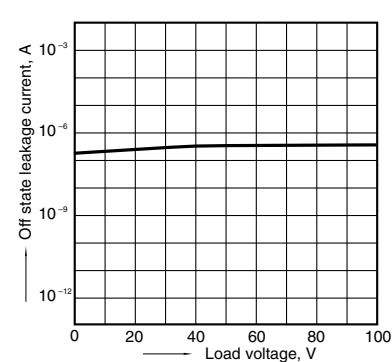
8. Current vs. voltage characteristics of output at MOS portion

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



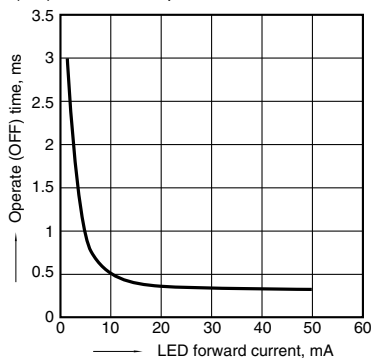
9. Off state leakage current vs. load voltage characteristics

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



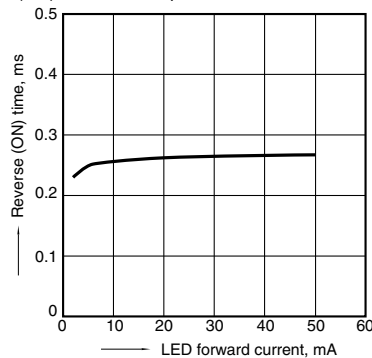
10. Operate (OFF) time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



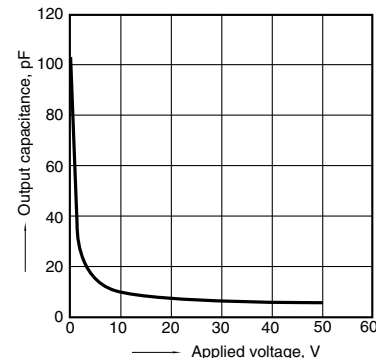
11. Reverse (ON) time vs. LED forward current characteristics

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