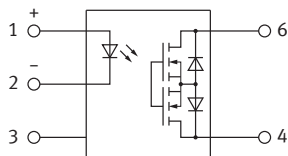
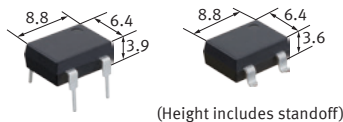


HE 1 Form A

Ideal for industrial battery monitoring system (BMS)



(Unit: mm)

FEATURES

- Load voltage: 1,500 V
- Load current: 20 mA
- Distance between output terminals expanded to cater to 6-pin DIP package

TYPICAL APPLICATIONS

- Isolation detection
- Voltage monitoring
- Signal control

*Note: Please contact our sales representative for automotive applications of PhotoMOS.

TYPES

Category	Output rating*1		Part No.				Packing quantity		
	Load voltage	Load current	Through hole terminal	Surface mount terminal			Through hole terminal	Surface mount terminal	
			Tube packing style	Tube packing style	Tape and reel packing style X*2	Tape and reel packing style Z*2	Tube	Tube	Tape and reel
AC/DC dual use	1,500 V	20 mA	AQV258H5	AQV258H5A	AQV258H5AX	AQV258H5AZ	1-tube : 50 pcs. Outer carton : 500 pcs.	1-tube : 50 pcs. Outer carton : 500 pcs.	1-reel : 1,000 pcs. Outer carton : 1,000 pcs.

Note: The surface mount terminal shape indicator "A" and the packing style indicator "X" or "Z" are not marked on the device.
(Ex, the label for product number AQV258H5AX is AQV258H5.)

*1 Indicate the peak AC and DC values.

*2 Tape and reel packing style X: picked from the 1/2/3-pin side, tape and reel packing style Z: picked from the 4/6-pin side.

RATING

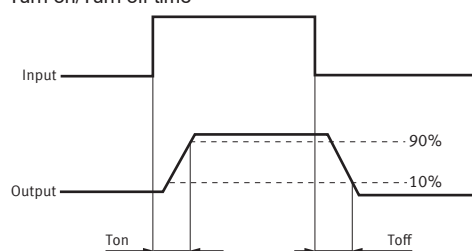
■ Absolute maximum ratings (Ambient temperature: 25°C)

Item		Symbol	AQV258H5 (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 Ratio = 0.1%
	Power dissipation	P_{in}	75 mW	
Output	Load voltage (peak AC)	V_L	1,500 V	
	Continuous load current	I_L	0.02 A	Peak AC, DC
	Peak load current	I_{peak}	0.06 A	100 ms (1 shot), $V_L = \text{DC}$
	Power dissipation	P_{out}	360 mW	
Total power dissipation		P_T	410 mW	
I/O isolation voltage		V_{iso}	5,000 Vrms	
Ambient temperature (Operating)		T_{opr}	-40 to +85°C	(Avoid icing and condensation)
Ambient temperature (Storage)		T_{stg}	-40 to +100°C	

■ Electrical characteristics (Ambient temperature: 25°C)

Item			Symbol	AQV258H5 (A)	Condition
Input	LED operate current	Typical	I_{Fon}	1.4 mA	$I_L = \text{Max.}$
		Maximum		3.0 mA	
	LED turn off current	Minimum	I_{Foff}	0.2 mA	$I_L = \text{Max.}$
		Typical		1.3 mA	
	LED dropout voltage	Typical	V_F	1.32 V (1.16 V at $I_F = 10 \text{ mA}$)	$I_F = 50 \text{ mA}$
		Maximum		1.5 V	
Output	On resistance	Typical	R_{on}	315 Ω	$I_F = 10 \text{ mA}$ $I_L = \text{Max.}$ Within 1 s
		Maximum		500 Ω	
	Off state leakage current	Maximum	I_{Leak}	10 μA	$I_F = 0 \text{ mA}$ $V_L = \text{Max.}$
Transfer characteristics	Turn on time*	Typical	T_{on}	0.35 ms	$I_F = 10 \text{ mA}$ $I_L = \text{Max.}$
		Maximum		1.0 ms	
	Turn off time*	Typical	T_{off}	0.04 ms	$I_F = 10 \text{ mA}$ $I_L = \text{Max.}$
		Maximum		0.2 ms	
	I/O capacitance	Typical	C_{iso}	1.3 pF	$f = 1 \text{ MHz}$ $V_B = 0 \text{ V}$
		Maximum		3 pF	
	Initial I/O isolation resistance	Minimum	R_{iso}	1,000 M Ω	500 V DC

*Turn on/Turn off time



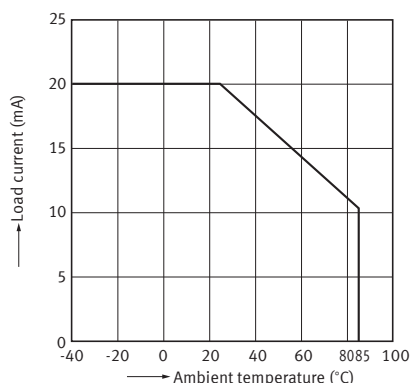
■ Recommended operating conditions (Ambient temperature: 25°C)

Please use under recommended operating conditions to obtain expected characteristics.

Item		Symbol	Min.	Max.	Unit
LED current		I_F	5	30	mA
AQV258H5 (A)	Load voltage (Peak AC)	V_L	—	1,200	V
	Continuous load current	I_L	—	0.02	A

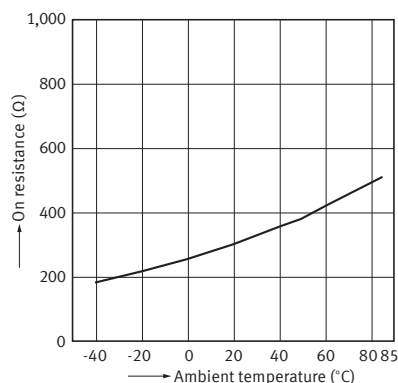
REFERENCE DATA

1. Load current vs. ambient temperature characteristics



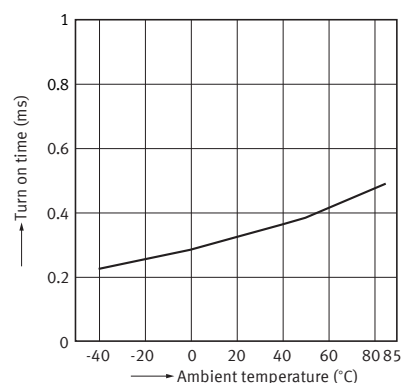
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 4 and 6,
LED current: 10mA;
Continuous load current: Max. (DC)



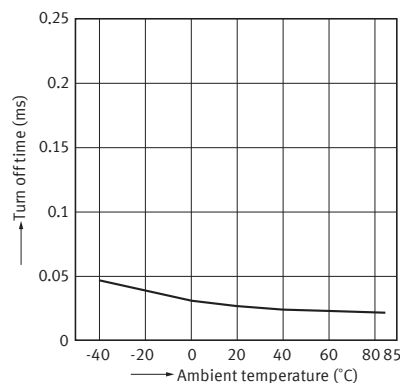
3. Turn on time vs. ambient temperature characteristics

LED current: 10 mA;
Load voltage: Max. (DC);
Continuous load current: Max. (DC)



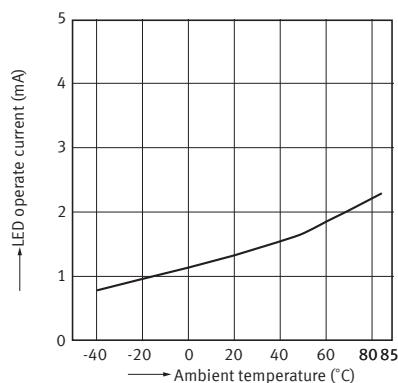
4. Turn off time vs. ambient temperature characteristics

LED current: 10 mA;
Load voltage: Max. (DC);
Continuous load current: Max. (DC)



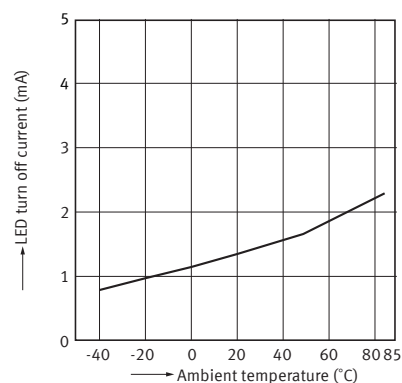
5. LED operate current vs. ambient temperature characteristics

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



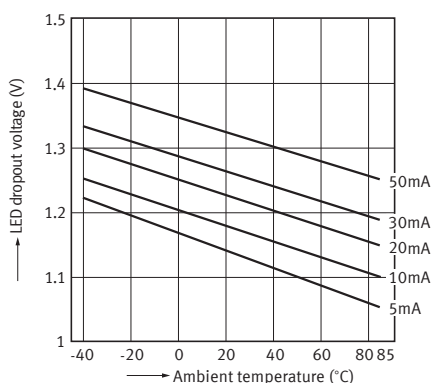
6. LED turn off current vs. ambient temperature characteristics

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



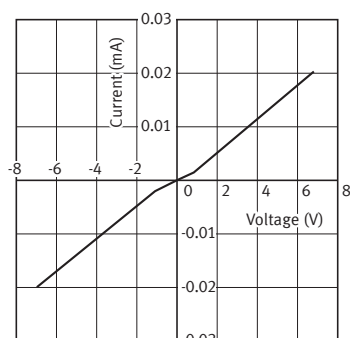
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



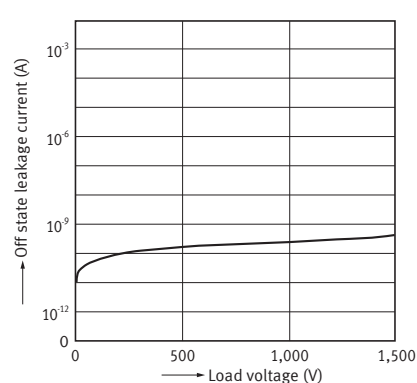
8. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals: 4 and 6,
Ambient temperature: 25°C



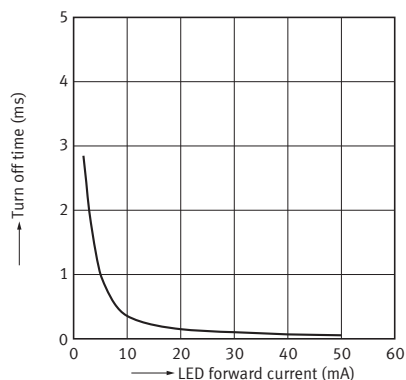
9. Off state leakage current vs. load voltage characteristics

Measured portion: between terminals: 4 and 6,
Ambient temperature: 25°C



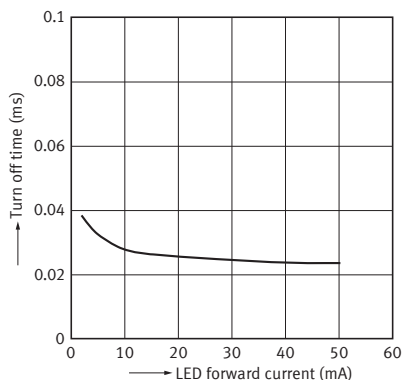
10. Turn on time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6;
Load voltage: Max. (DC);
Continuous load current: Max. (DC);
Ambient temperature: 25°C



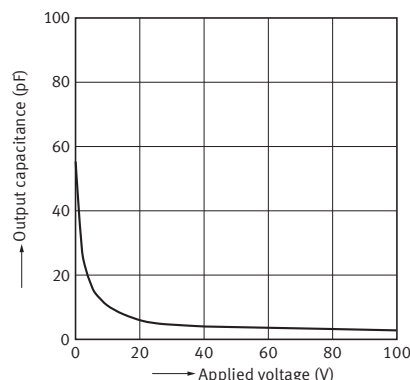
11. Turn off time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6;
Load voltage: Max. (DC);
Continuous load current: Max. (DC);
Ambient temperature: 25°C



12. Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 4 and 6;
Frequency: 1 MHz;
Ambient temperature: 25°C



DIMENSIONS

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

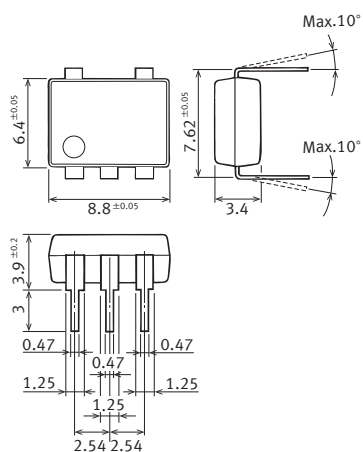
Unit: mm

Through hole terminal

CAD

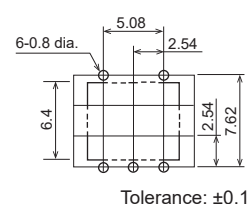


External dimensions



Terminal thickness: $t = 0.25$
General tolerance: ± 0.1

PC board pattern (BOTTOM VIEW)

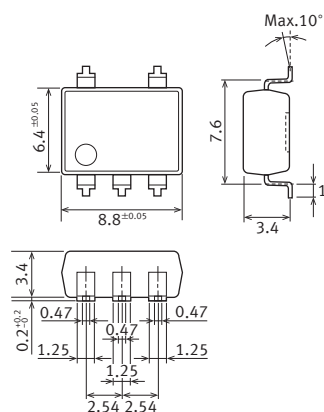


Surface mount terminal

CAD

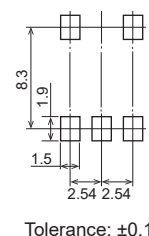


External dimensions

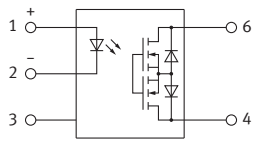
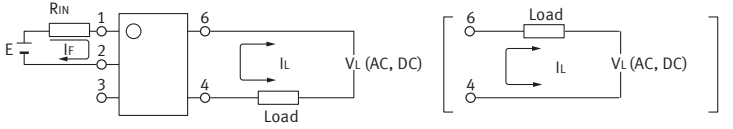


Terminal thickness: $t = 0.25$
General tolerance: ± 0.1

Recommended mounting pad (TOP VIEW)



SCHEMATIC AND WIRING DIAGRAMS

Schematic	Output configuration	Load type	Connection	Wiring diagram
	1 Form A	AC/DC	—	

SAFETY STANDARDS

Part No.		UL (Recognized)	CSA (Certified)	Remarks
		File No. (Standard No.)	File No. (Standard No.)	
AC/DC dual use	AQV258H5 (A)	E191218 (UL1577)	Certified by C-UL	

Note: For the latest information on compliance with safety standards, please refer to our website.

Please refer to **"the latest product specifications"** when designing your product.

- Requests to customers:
<https://industrial.panasonic.com/ac/e/salespolicies/>

Please contact

Panasonic Corporation

Electromechanical Control Business Division

■1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

Panasonic[®]

©Panasonic Corporation 2019