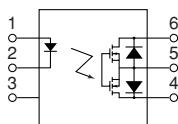
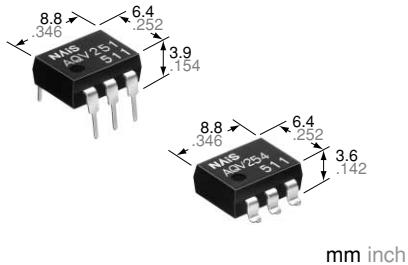


NAiS

**High sensitivity and low on-resistance.
DIP (1 Form A) 6-pin type.**

**HE PhotoMOS
(AQV25○)**

FEATURES



1. **Highly sensitive and low on-resistance**
2. **Controls various types of loads such as relays, motors, lamps and solenoids.**
3. **Optical coupling for extremely high isolation**
5,000 Vrms I/O isolation available.
4. **Low-level off state leakage current**
5. **Eliminates the need for a power supply to drive the power MOSFET**
A power supply used to drive the power MOSFET is unnecessary because of the built-in optoelectronic device. This results in easy circuit design and small PC board area.
6. **Low thermal electromotive force (Approx. 1 μV)**

TYPICAL APPLICATIONS

- High-speed inspection machines
- Telephone equipment
- Data communication equipment

TYPES

1. I/O isolation voltage: 1,500 V AC

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 1/2/3-pin side	Picked from the 4/5/6-pin side		
40 V	500 mA	AQV251	AQV251A	AQV251AX	AQV251AZ		
60 V	400 mA	AQV252	AQV252A	AQV252AX	AQV252AZ		
100 V	350 mA	AQV255	AQV255A	AQV255AX	AQV255AZ		
200 V	250 mA	AQV257	AQV257A	AQV257AX	AQV257AZ		
250 V	200 mA	AQV253	AQV253A	AQV253AX	AQV253AZ		
400 V	150 mA	AQV254	AQV254A	AQV254AX	AQV254AZ		
1,000 V	30 mA	AQV259	AQV259A	AQV259AX	AQV259AZ		
1,500 V	20 mA	AQV258	AQV258A	AQV258AX	AQV258AZ		

2. I/O isolation voltage: Reinforced 5,000 V

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 1/2/3-pin side	Picked from the 4/5/6-pin side		
250 V	200 mA	AQV253H	AQV253HA	AQV253HAX	AQV253HAZ		
400 V	150 mA	AQV254H	AQV254HA	AQV254HAX	AQV254HAZ		

*Indicate the peak AC and DC values.

Note: For space reasons, the SMD terminal shape indicator "A" and the package type indicator "X" and "Z" are omitted from the seal.

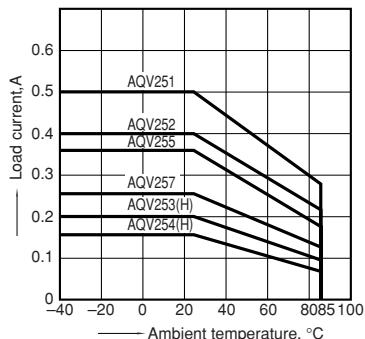
HE PhotoMOS (AQV25○)

REFERENCE DATA

1.-{(1)} Load current vs. ambient temperature characteristics

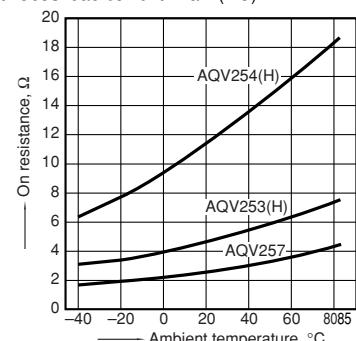
Allowable ambient temperature: -40°C to $+85^{\circ}\text{C}$
 -40°F to $+185^{\circ}\text{F}$;

Type of connection: A



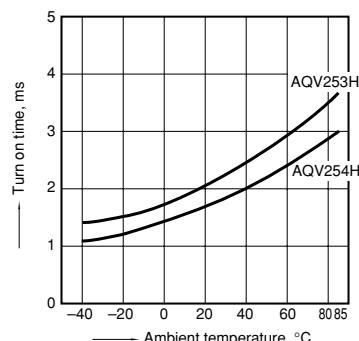
2.-{(2)} On resistance vs. ambient temperature characteristics

Measured portion: between terminals 4 and 6;
LED current: 5 mA;
Continuous load current: Max. (DC)



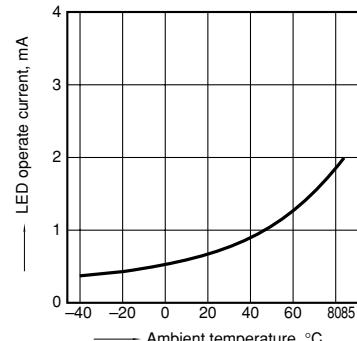
3.-{(2)} Turn on time vs. ambient temperature characteristics

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



5.-{(1)} LED operate current vs. ambient temperature characteristics

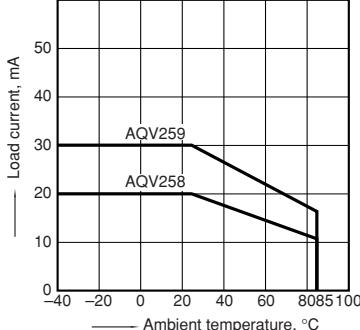
Sample: AQV251, AQV252, AQV253, AQV254,
AQV259; Load voltage: Max. (DC);
Continuous load current: Max. (DC)



1.-{(2)} Load current vs. ambient temperature characteristics

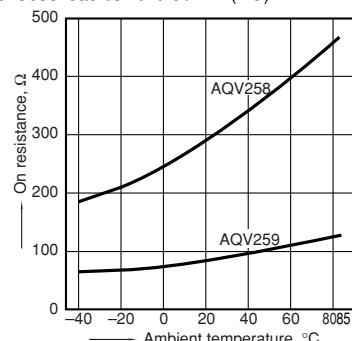
Allowable ambient temperature: -40°C to $+85^{\circ}\text{C}$
 -40°F to $+185^{\circ}\text{F}$;

Type of connection: A



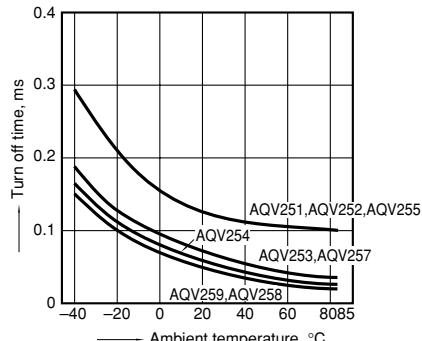
2.-{(3)} On resistance vs. ambient temperature characteristics

Measured portion: between terminals 4 and 6;
LED current: 5 mA;
Continuous load current: 30 mA (DC)



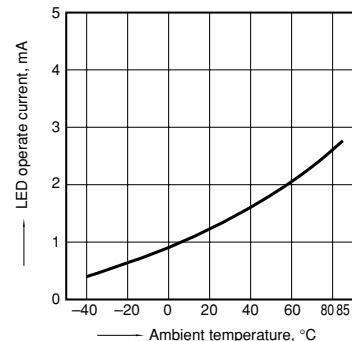
4.-{(1)} Turn off time vs. ambient temperature characteristics

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



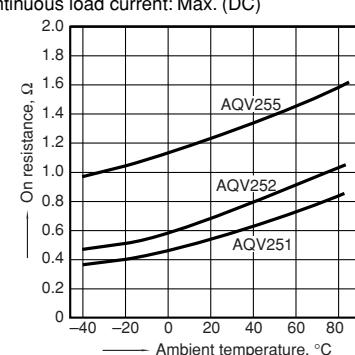
5.-{(2)} LED operate current vs. ambient temperature characteristics

Sample: AQV253H, AQV254H;
Load voltage: Max. (DC);
Continuous load current: Max. (DC)



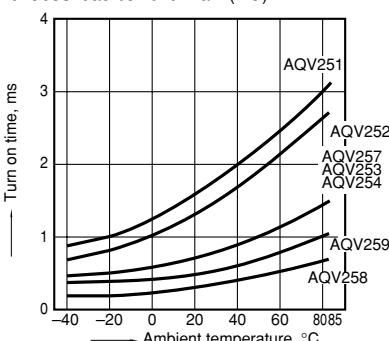
2.-{(1)} On resistance vs. ambient temperature characteristics

Measured portion: between terminals 4 and 6;
LED current: 5 mA;
Continuous load current: Max. (DC)



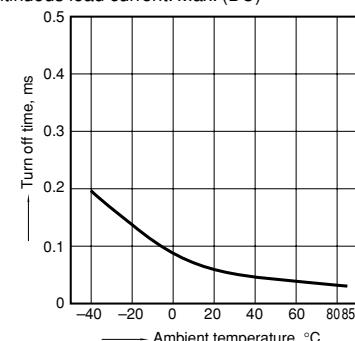
3.-{(1)} Turn on time vs. ambient temperature characteristics

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



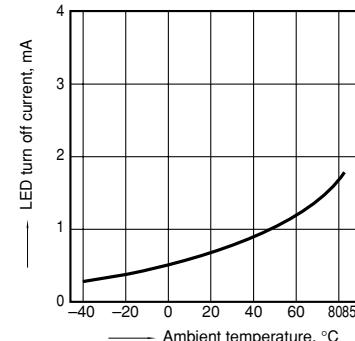
4.-{(2)} Turn off time vs. ambient temperature characteristics

Sample: AQV253H, AQV254H
LED current: 5 mA; Load voltage: Max. (DC);
Continuous load current: Max. (DC)



6.-{(1)} LED turn off current vs. ambient temperature characteristics

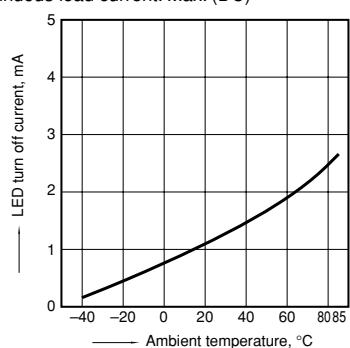
Sample: AQV251, AQV252, AQV253, AQV254,
AQV259; Load voltage: Max. (DC);
Continuous load current: Max. (DC)



HE PhotOMOS (AQV25O)

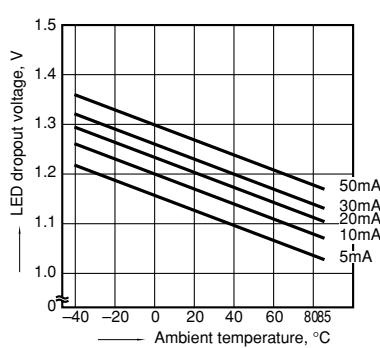
6.-{(2)} LED turn off current vs. ambient temperature characteristics

Sample: AQV251, AQV252, AQV253, AQV254, AQV259; Load voltage: Max. (DC); Continuous load current: Max. (DC)



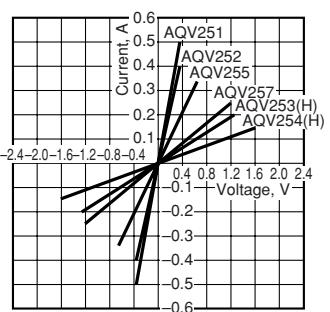
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



8.-{(1)} Current vs. voltage characteristics of output at MOS portion

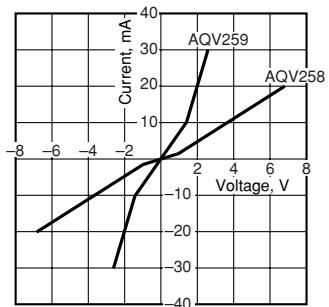
Measured portion: between terminals 4 and 6; Ambient temperature: 25°C 77°F



8.-{(2)} Current vs. voltage characteristics of output at MOS portion

Sample: AQV259

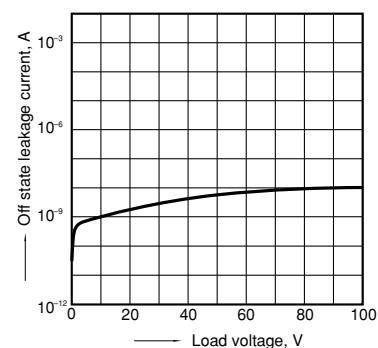
Measured portion: between terminals 4 and 6; Ambient temperature: 25°C 77°F



9.-{(1)} Off state leakage current vs. load voltage characteristics

Sample: AQV259;

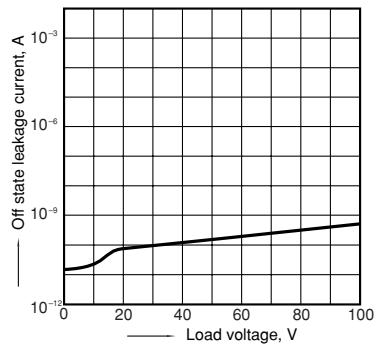
Measured portion: between terminals 4 and 6; Ambient temperature: 25°C 77°F



9.-{(2)} Off state leakage current vs. load voltage characteristics

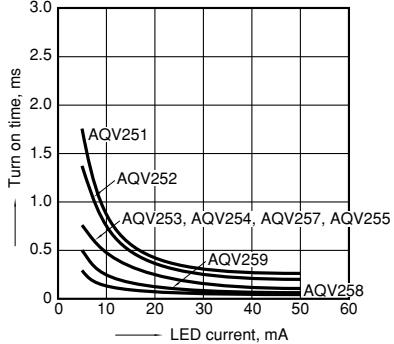
Sample: AQV254H;

Measured portion: between terminals 4 and 6; Ambient temperature: 25°C 77°F



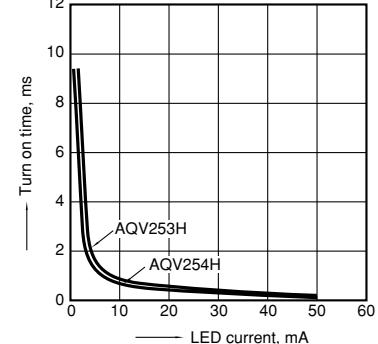
10.-{(1)} Turn on time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6; Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



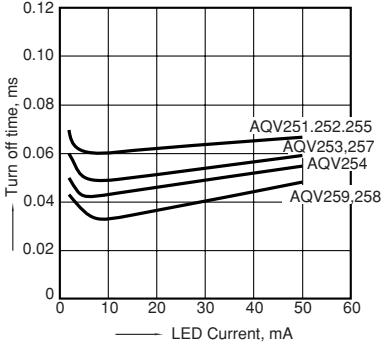
10.-{(2)} Turn on time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6; Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



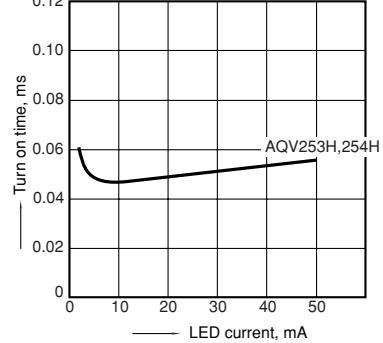
11.-{(1)} Turn off time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6; Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



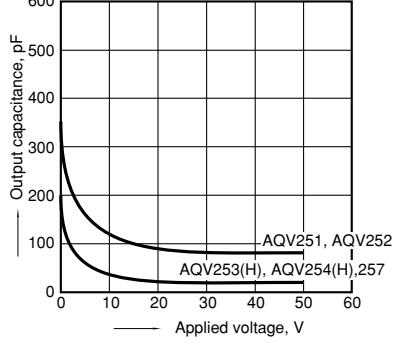
11.-{(2)} Turn off time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6; Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



12.-{(1)} Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 4 and 6; Frequency: 1 MHz; Ambient temperature: 25°C 77°F



12.-{(2)} Output capacitance vs. applied voltage characteristics

Sample: AQV259; Measured portion: between terminals 4 and 6; Frequency: 1 MHz; Ambient temperature: 25°C 77°F

