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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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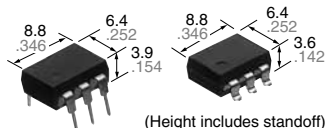
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



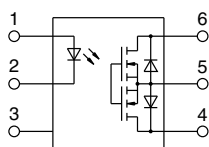
**Capable of 2.4A to 3.5A  
high capacity load  
current control**

**PhotoMOS®  
HE 1 Form A  
High Capacity (AQV250G3)**

**New**



mm inch



**RoHS compliant**

### FEATURES

- Greatly increased load current in a compact DIP package**  
Continuous load current: 3.5A (AQV252G3)
- Greatly improved specifications allow you to use this in place of mercury and mechanical relays.**
- Low on-resistance (Typ. 33mΩ, AQV252G3)**

### TYPICAL APPLICATIONS

- Security equipment
- Fire-preventing system
- Industrial machine
- Thermostat (HVAC temperature controller)

### TYPES

	Output rating*		Package	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			
AC/DC dual use	<b>New</b> 60 V	3.5 A	DIP6-pin	AQV252G3	AQV252G3A	AQV252G3AX	AQV252G3AZ	1 tube contains: 50 pcs. 1 batch contains: 500 pcs.	1,000 pcs.
	<b>New</b> 100 V	2.4 A	DIP6-pin	AQV255G3	AQV255G3A	AQV255G3AX	AQV255G3AZ		

\*Indicate the peak AC and DC values.

Note: The surface mount terminal 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)

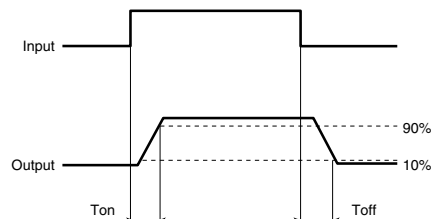
Item	Symbol	Type of connection	AQV252G3(A)	AQV255G3(A)	Remarks	
Input	LED forward current	I <sub>F</sub>	50 mA			
	LED reverse voltage	V <sub>R</sub>	5 V			
	Peak forward current	I <sub>FP</sub>	1 A		f = 100 Hz, Duty factor = 0.1%	
	Power dissipation	P <sub>in</sub>	75 mW			
Output	Load voltage (peak AC)	V <sub>L</sub>	60 V	100 V		
	Continuous load current	I <sub>L</sub>	A	3.5 A	2.4 A	A connection: Peak AC, DC B, C connection: DC
			B	5.0 A	3.2 A	
			C	7.0 A	4.8 A	
	Peak load current	I <sub>peak</sub>	10 A	7.0 A	100ms (1 shot), V <sub>L</sub> = DC at A connection	
Power dissipation	P <sub>out</sub>	600 mW				
Total power dissipation	P <sub>T</sub>	650 mW				
I/O isolation voltage	V <sub>iso</sub>	1,500 Vrms				
Ambient temperature	Operating	T <sub>opr</sub>	-40 to +85°C -40 to +185°F		(Non-icing at low temperatures)	
	Storage	T <sub>stg</sub>	-40 to +100°C -40 to +212°F			

# HE 1 Form A High Capacity (AQV25○G3)

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

Item		Symbol	Type of connection	AQV252G3(A)	AQV255G3(A)	Condition	
Input	LED operate current	Typical	I <sub>Fon</sub>	0.5 mA		I <sub>L</sub> = 100mA	
		Maximum		3 mA			
	LED turn off current	Minimum	I <sub>Foff</sub>	0.2 mA		I <sub>L</sub> = 100mA	
Typical		0.4 mA					
LED dropout voltage	Typical	V <sub>F</sub>	—	1.32 V (1.14 V at I <sub>F</sub> = 5 mA)		I <sub>F</sub> = 50 mA	
	Maximum			1.5 V			
Output	On resistance	Typical	R <sub>on</sub>	A	0.033 Ω	0.07 Ω	I <sub>F</sub> = 5 mA I <sub>L</sub> = Max. Within 1 s
		Maximum			0.06 Ω	0.12 Ω	
		Typical	R <sub>on</sub>	B	0.017 Ω	0.035 Ω	
		Maximum			0.04 Ω	0.07 Ω	
	Typical	R <sub>on</sub>	C	0.0095 Ω	0.02 Ω		
	Maximum			0.02 Ω	0.04 Ω		
Off state leakage current	Maximum	I <sub>Leak</sub>	—	1 μA		I <sub>F</sub> = 0 mA, V <sub>L</sub> = Max.	
Transfer characteristics	Turn on time*	Typical	T <sub>on</sub>	—	1.8 ms		I <sub>F</sub> = 5 mA, I <sub>L</sub> = 100 mA V <sub>L</sub> = 10 V
		Maximum			5 ms		
	Turn off time*	Typical	T <sub>off</sub>	—	0.15 ms		I <sub>F</sub> = 5 mA, I <sub>L</sub> = 100 mA V <sub>L</sub> = 10 V
		Maximum			0.5 ms		
	I/O capacitance	Typical	C <sub>iso</sub>	—	0.8 pF		f = 1 MHz V <sub>B</sub> = 0 V
		Maximum			1.5 pF		
Initial I/O isolation resistance	Minimum	R <sub>iso</sub>	—	1,000 MΩ		500 V DC	
Max. operating frequency	Maximum	—	—	2.5 cps		I <sub>F</sub> = 5 mA, duty = 50% I <sub>L</sub> = Max., V <sub>L</sub> = Max.	

\*Turn on/Turn off time



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

Please use under recommended operating conditions to obtain expected characteristics.

Item	Symbol	Min.	Max.	Unit
LED forward current	I <sub>F</sub>	5	30	mA
AQV252G3(A)	Load voltage (Peak AC)	V <sub>L</sub>	—	48 V
	Continuous load current (A connection)	I <sub>L</sub>	—	3.3 A
AQV255G3(A)	Load voltage (Peak AC)	V <sub>L</sub>	—	80 V
	Continuous load current (A connection)	I <sub>L</sub>	—	2.4 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.

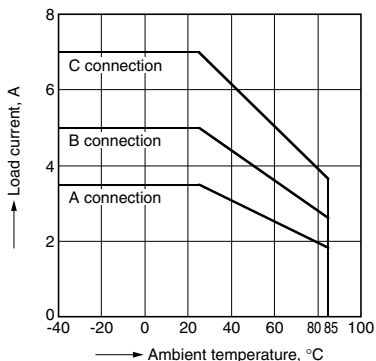


## REFERENCE DATA

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

Sample: AQV252G3

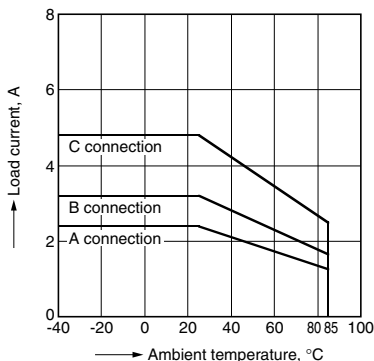
Allowable ambient temperature: -40 to +85°C  
-40 to +185°F



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

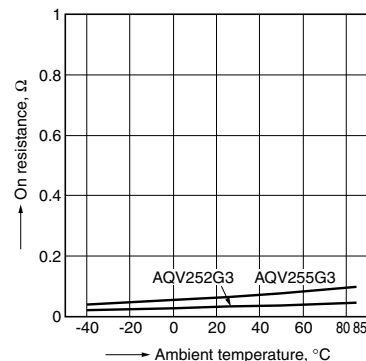
Sample: AQV255G3

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



2. On resistance vs. ambient temperature characteristics

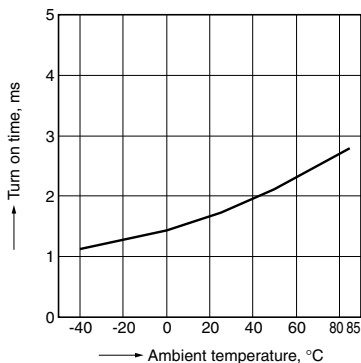
Measured portion: between terminals 4 and 6;  
LED current: 5 mA; Load voltage: Max. (DC)  
Continuous load current: Max. (DC)



3. Turn on time vs. ambient temperature characteristics

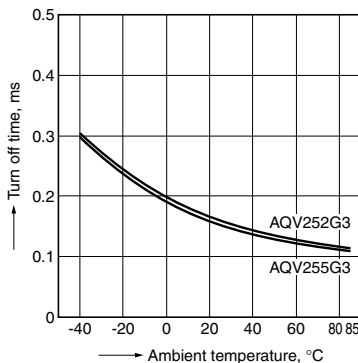
Tested sample: All;

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



4. Turn off time vs. ambient temperature characteristics

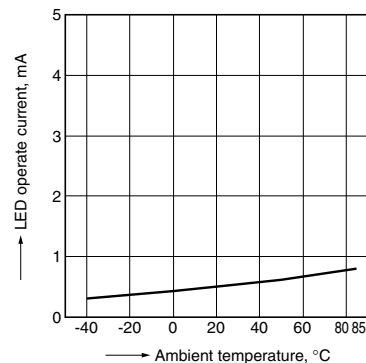
LED current: 5 mA; Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



5. LED operate current vs. ambient temperature characteristics

Tested sample: All;

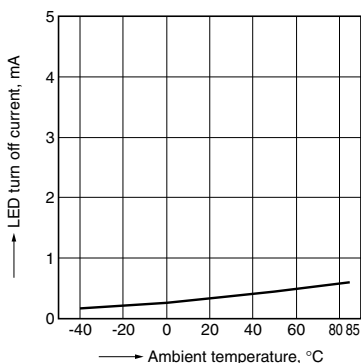
Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



6. LED turn off current vs. ambient temperature characteristics

Tested sample: All;

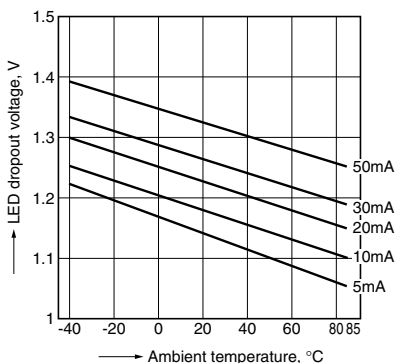
Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



7. LED dropout voltage vs. ambient temperature characteristics

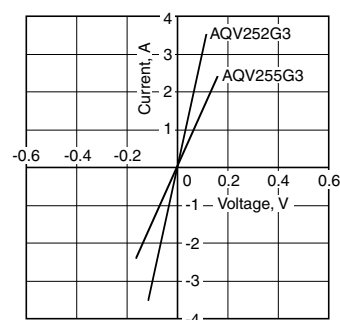
Tested sample: All;

LED current: 5 to 50 mA



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

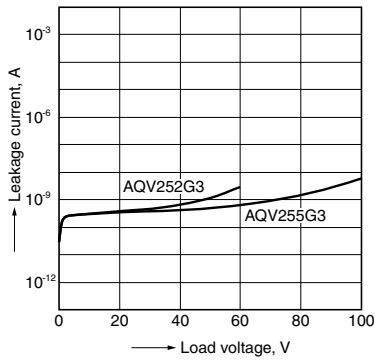
Measured portion: between terminals 4 and 6;  
Ambient temperature: 25°C 77°F



# HE 1 Form A High Capacity (AQV250G3)

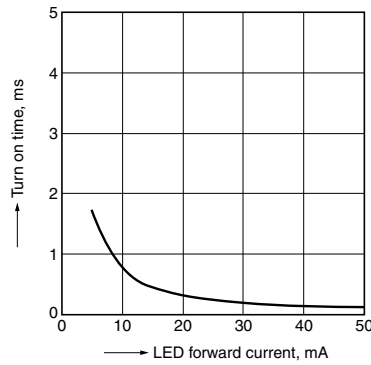
## 9. Off state leakage current vs. load voltage characteristics

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



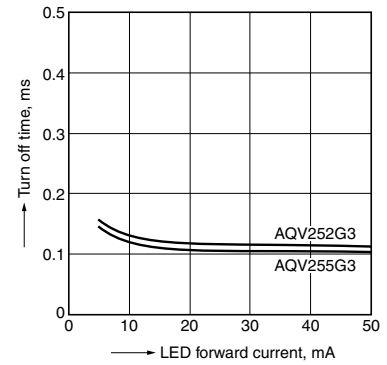
## 10. Turn on time vs. LED forward current characteristics

Tested sample: All;  
Measured portion: between terminals 4 and 6;  
Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC);  
Ambient temperature: 25°C 77°F



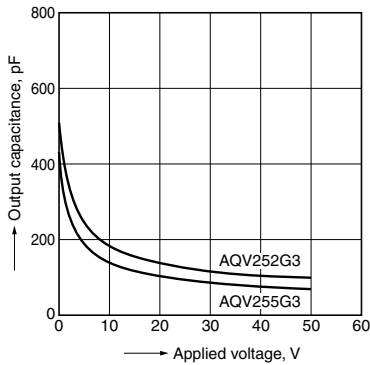
## 11. Turn off time vs. LED forward current characteristics

Measured portion: between terminals 4 and 6;  
Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC);  
Ambient temperature: 25°C 77°F



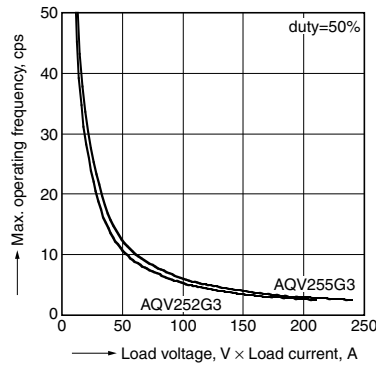
## 12. Output capacitance vs. applied voltage characteristics

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



## 13. Max. operating frequency vs. load voltage and load current characteristics

LED current: 5 mA  
Ambient temperature: 25°C 77°F



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Please contact .....

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