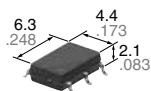
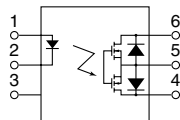


**Miniature SOP6-pin type
with high capacity
of 3A load current**

PhotoMOS[®]
HE SOP 1 Form A
High Capacity (AQV250G0S)



mm inch



RoHS compliant

FEATURES

1. High capacity in a miniature SOP package

Continuous load current: Max. 3A
Load voltage: 50V and 80V

2. Greatly improved specifications allow you to use this in place of mercury and mechanical relays.

TYPICAL APPLICATIONS

- Security equipment
- Fire-preventing system
- Measuring instruments

* For the latest information on compliance with international standards, please visit our website.

TYPES

	Output rating**		Package	Part No.			Packing quantity	
				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					
New AC/DC dual use	50 V	3.0 A	SOP6-pin	AQV252G2S	AQV252G2SX	AQV252G2SZ	1 tube contains: 75 pcs.	1,000 pcs.
	80 V	1.25 A		AQV255GS	AQV255GSX	AQV255GSZ	1 batch contains: 1,500 pcs.	

Note: For space reasons, the two initial letters of the part number "AQ" and the packing style indicator "X" or "Z" are not marked on the device.

** Indicate the peak AC and DC values.

RATING

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

Item		Symbol	Type of connection	AQV252G2S	AQV255GS	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		50 V	80 V	
	Continuous load current	I _L	A	3.0 A	1.25 A	A connection: Peak AC, DC B, C connection: DC
			B	3.5 A	1.75 A	
			C	6.0 A	2.5 A	
	Peak load current	I _{peak}		6 A	3 A	100ms (1 shot), V _L = DC at A connection
	Power dissipation	P _{out}		450 mW		
Total power dissipation		P _T		500 mW		
I/O isolation voltage		V _{iso}		1,500 V AC		
Temperature limits	Operating	T _{opr}		−40°C to +85°C −40°F to +185°F		Non-condensing at low temperatures
	Storage	T _{sta}		−40°C to +100°C −40°F to +212°F		

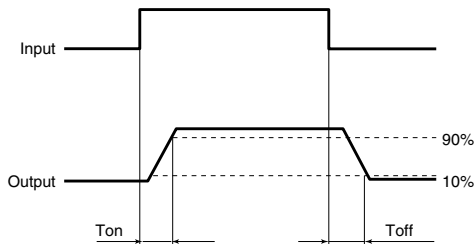
HE SOP 1 Form A High Capacity (AQV25OGOS)

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

Item			Symbol	Type of connection	AQV252G2S	AQV255GS	Condition
Input	LED operate current	Typical	I _{Fon}	—	0.6 mA	0.5 mA	I _L = 100mA
		Maximum			3 mA		
	LED turn off current	Minimum	I _{Foff}	—	0.2 mA		I _L = 100mA
		Typical			0.5 mA	0.4 mA	
	LED dropout voltage	Typical	V _F	—	1.32 V (1.14 V at I _F = 5 mA)		I _F = 50 mA
		Maximum			1.5 V		
Output	On resistance	Typical	R _{on}	A	0.04 Ω	0.09 Ω	A connection I _F = 5 mA, I _L = Max. Within 1 s on time
		Maximum			0.07 Ω	0.15 Ω	
		Typical	R _{on}	B	0.025 Ω	0.05 Ω	B connection I _F = 5 mA, I _L = Max. Within 1 s on time
		Maximum			0.04 Ω	0.12 Ω	
		Typical	R _{on}	C	0.01 Ω	0.03 Ω	C connection I _F = 5 mA, I _L = Max. Within 1 s on time
		Maximum			0.02 Ω	0.1 Ω	
	Off state leakage current	Maximum	I _{Leak}	—	1 μA		I _F = 0 mA, V _L = Max.
	Transfer characteristics	Turn on time*	Typical	T _{on}	—	1.5 ms	1.3 ms
Maximum			5 ms				
Turn off time*		Typical	T _{off}	—	0.08 ms	0.1 ms	I _F = 5 mA, I _L = 100 mA V _L = 10 V
		Maximum			0.5 ms		
I/O capacitance		Typical	C _{iso}	—	0.8 pF		f = 1 MHz V _B = 0 V
		Maximum			1.5 pF		
Initial I/O isolation resistance		Minimum	R _{iso}	—	1,000 MΩ		500 V DC
Max. switching frequency	Maximum	—	—	2.5 times/s	5 times/s	I _F = 5 mA, duty = 50% I _L = Max., V _L = Max.	

Note: Please refer to the “Schematic and Wiring Diagrams” for connection method.

*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.

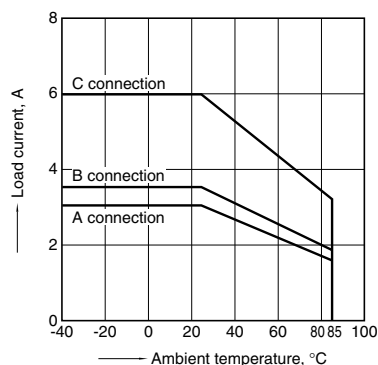
HE SOP 1 Form A High Capacity (AQV25○G○S)

REFERENCE DATA

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

Sample: AQV252G2S

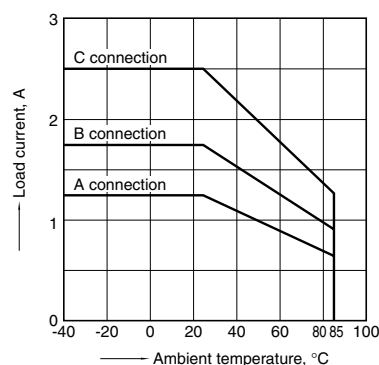
Allowable ambient temperature: -40°C to +85°C
-40°F to +185°F



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

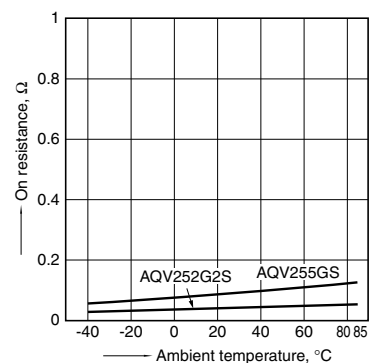
Sample: AQV255GS

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



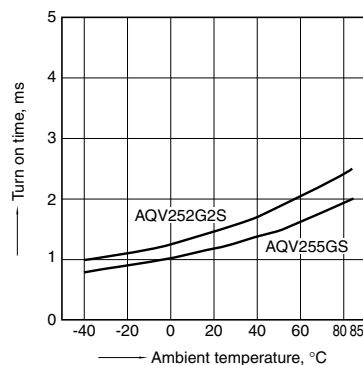
2. On resistance vs. ambient temperature characteristics

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



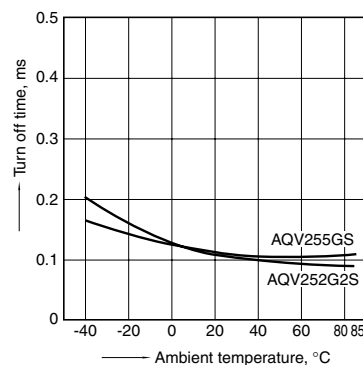
3. Turn on time vs. ambient temperature characteristics

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



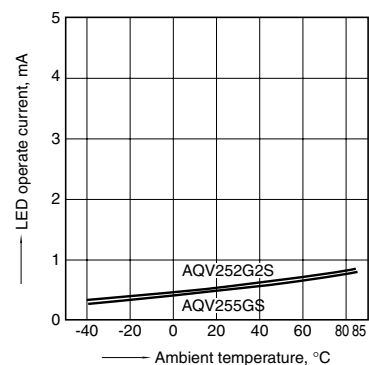
4. Turn off time vs. ambient temperature characteristics

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



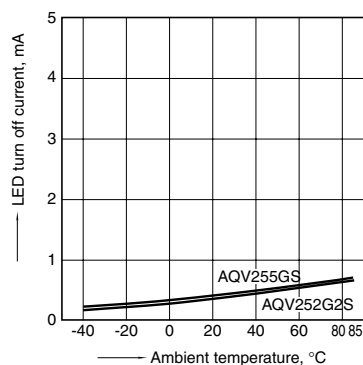
5. LED operate current vs. ambient temperature characteristics

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



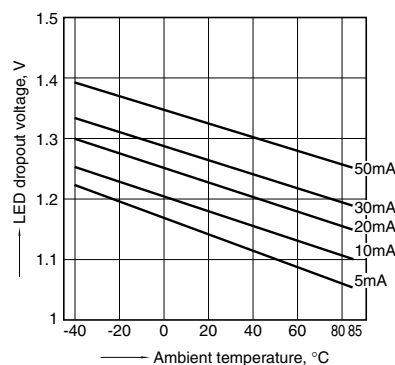
6. LED turn off current vs. ambient temperature characteristics

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



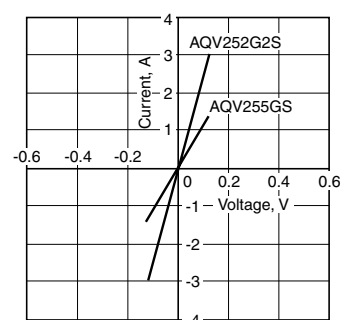
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



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

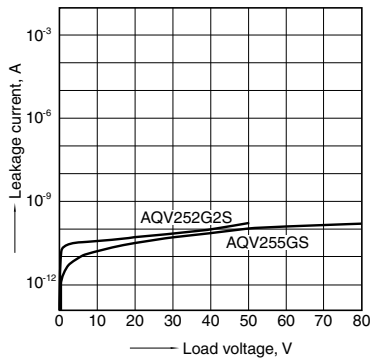
Measured portion: between terminals 4 and 6;
Ambient temperature: 25°C 77°F



HE SOP 1 Form A High Capacity (AQV25○G○S)

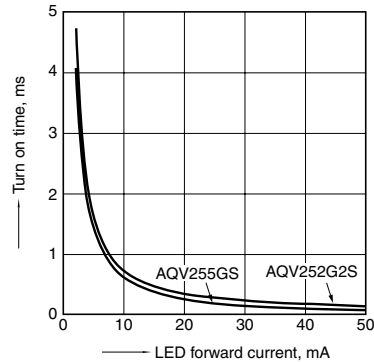
9. Off state leakage current vs. load voltage characteristics

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



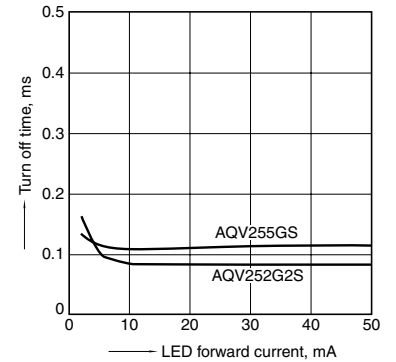
10. Turn on time vs. LED forward current characteristics

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



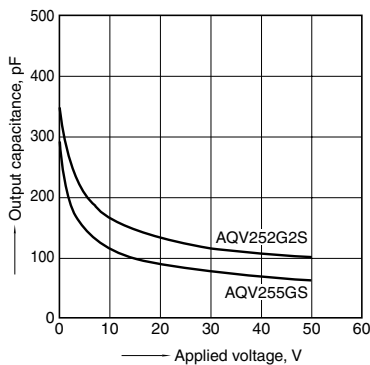
11. Turn off time vs. LED forward current characteristics

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. switching frequency vs. load voltage and load current

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

