



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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.

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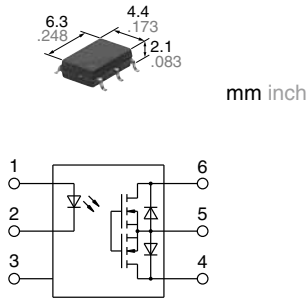
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**Miniature SOP6-pin type
with high capacity
of 3.3A load current**

**PhotoMOS®
HE SOP 1 Form A
High Capacity (AQV250G3S)**



FEATURES

1. High capacity in a miniature SOP package

Continuous load current: Max. 3.3A
Load voltage: 60V and 100V

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

TYPICAL APPLICATIONS

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

RoHS compliant

TYPES

	Output rating*		Package	Part No.			Packing quantity	
	Load voltage	Load current		Surface-mount terminal			Tube	Tape and reel
				Tube packing style	Tape and reel packing style			
				Picked from the 1/2/3-pin side	Picked from the 4/5/6-pin side			
AC/DC dual use	New 60 V	3.3 A	SOP6-pin	AQV252G3S	AQV252G3SX	AQV252G3SZ	1 tube contains: 75 pcs. 1 batch contains: 1,500 pcs.	1,000 pcs.
	New 100 V	2.2 A		AQV255G3S	AQV255G3SX	AQV255G3SZ		

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)

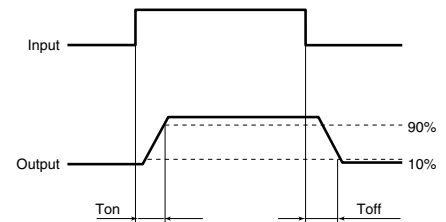
Item	Symbol	Type of connection	AQV252G3S		AQV255G3S		Remarks
			A	B	A	B	
Input	LED forward current	I_F	50 mA				
	LED reverse voltage	V_R	5 V				
	Peak forward current	I_{FP}	1 A				f = 100 Hz, Duty factor = 0.1%
	Power dissipation	P_{in}	75 mW				
Output	Load voltage (peak AC)	V_L	60 V		100 V		
	Continuous load current	I_L	A	3.3 A		2.2 A	A connection: Peak AC, DC B, C connection: DC
			B	3.5 A		2.4 A	
			C	6.6 A		4.4 A	
	Peak load current	I_{peak}	10 A		6.6 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 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				

HE SOP 1 Form A High Capacity (AQV25○G3S)

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

Item			Symbol	Type of connection	AQV252G3S	AQV255G3S	Condition
Input	LED operate current	Typical	I_{Fon}	—	0.5 mA		$I_L = 100\text{mA}$
		Maximum			3 mA		
	LED turn off current	Minimum	I_{Foff}	—	0.2 mA		$I_L = 100\text{mA}$
		Typical			0.4 mA		
LED dropout voltage	Typical	V_F	—	1.32 V (1.14 V at $I_F = 5\text{ mA}$)		$I_F = 50\text{ mA}$	
	Maximum			1.5 V			
Output	On resistance	Typical	R_{on}	A	0.033 Ω	0.07 Ω	A connection $I_F = 5\text{ mA}$, $I_L = \text{Max.}$ Within 1 s
		Maximum			0.06 Ω	0.12 Ω	
		Typical	R_{on}	B	0.017 Ω	0.035 Ω	B connection $I_F = 5\text{ mA}$, $I_L = \text{Max.}$ Within 1 s
		Maximum			0.04 Ω	0.07 Ω	
		Typical	R_{on}	C	0.0095 Ω	0.02 Ω	C connection $I_F = 5\text{ mA}$, $I_L = \text{Max.}$ Within 1 s
		Maximum			0.02 Ω	0.04 Ω	
Off state leakage current	Maximum	I_{Leak}	—	1 μA		$I_F = 0\text{ mA}$, $V_L = \text{Max.}$	
Transfer characteristics	Turn on time*	Typical	T_{on}	—	1.8 ms		$I_F = 5\text{ mA}$, $I_L = 100\text{ mA}$ $V_L = 10\text{ V}$
		Maximum			5 ms		
	Turn off time*	Typical	T_{off}	—	0.15 ms		$I_F = 5\text{ mA}$, $I_L = 100\text{ mA}$ $V_L = 10\text{ V}$
		Maximum			0.5 ms		
	I/O capacitance	Typical	C_{iso}	—	0.8 pF		$f = 1\text{ MHz}$ $V_B = 0\text{ V}$
		Maximum			1.5 pF		
Initial I/O isolation resistance	Minimum	R_{iso}	—	1,000 M Ω		500 V DC	
Max. operating frequency	Maximum	—	—	2.5 cps		$I_F = 5\text{ mA}$, duty = 50% $I_L = \text{Max.}$, $V_L = \text{Max.}$	

*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 current		I_F	5	30	mA
AQV252G3S	Load voltage (Peak AC)	V_L	—	48	V
	Continuous load current (A connection)	I_L	—	3.3	A
AQV255G3S	Load voltage (Peak AC)	V_L	—	80	V
	Continuous load current (A connection)	I_L	—	2.2	A

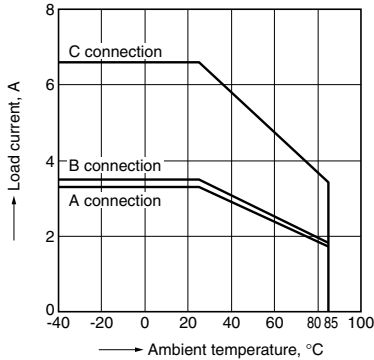
■ These products are not designed for automotive use.

If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

REFERENCE DATA

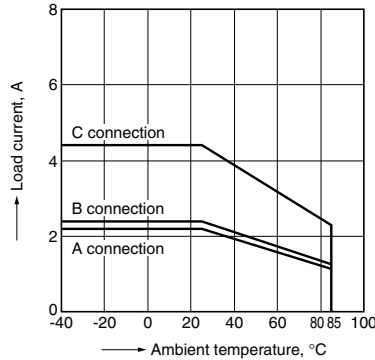
1.-(1) Load current vs. ambient temperature characteristics

Sample: AQV252G3S
 Allowable ambient temperature: -40 to +85°C
 -40 to +185°F



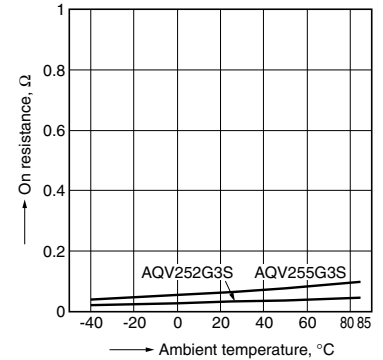
1.-(2) Load current vs. ambient temperature characteristics

Sample: AQV255G3S
 Allowable ambient temperature: -40 to +85°C
 -40 to +185°F



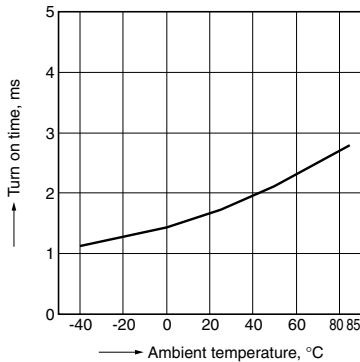
2. On resistance vs. ambient temperature characteristics

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



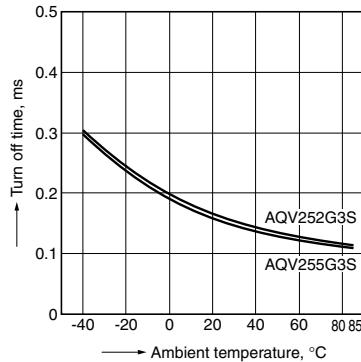
3. Turn on time vs. ambient temperature characteristics

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



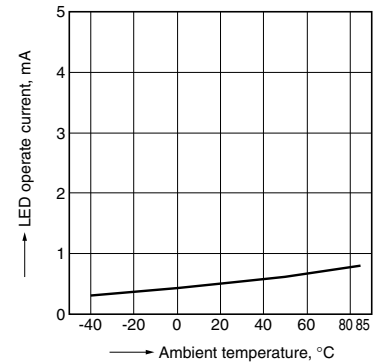
4. Turn off time vs. ambient temperature characteristics

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



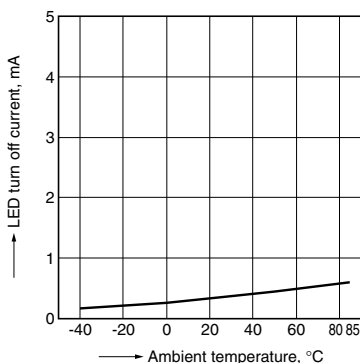
5. LED operate current vs. ambient temperature characteristics

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



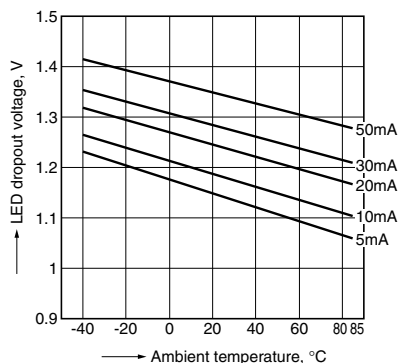
6. LED turn off current vs. ambient temperature characteristics

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



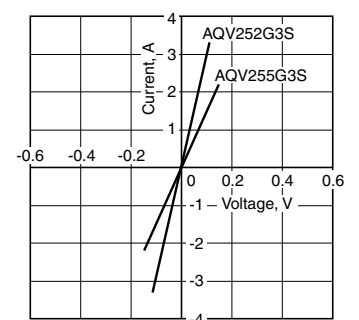
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



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

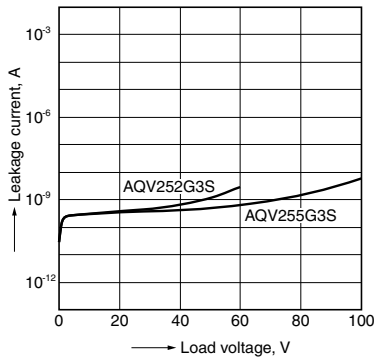
Measured portion: between terminals 4 and 6;
 Ambient temperature: 25°C 77°F



HE SOP 1 Form A High Capacity (AQV25○G3S)

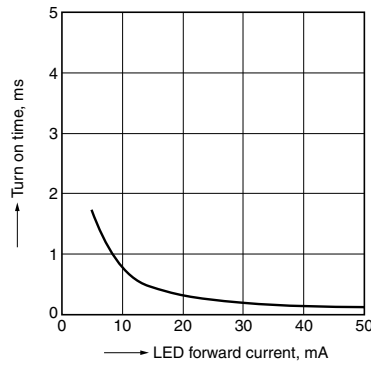
9. Off state leakage current vs. load voltage characteristics

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



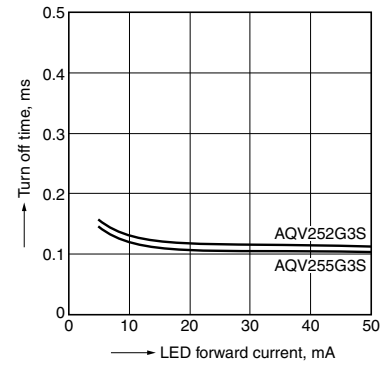
10. Turn on time vs. LED forward current characteristics

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



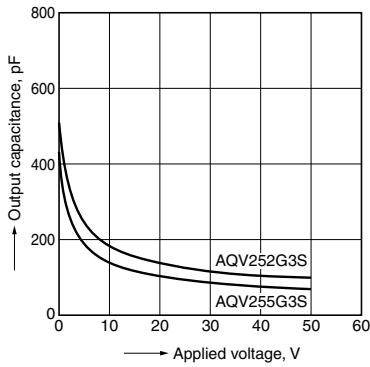
11. Turn off time vs. LED forward current characteristics

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



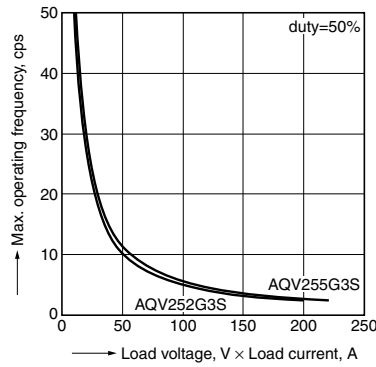
12. Output capacitance vs. applied voltage characteristics

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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