

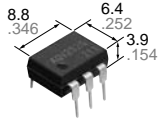
Panasonic

ideas for life

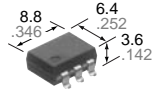
DIP6-pin type
with high capacity
of 2.5A load current

PhotoMOS Relays

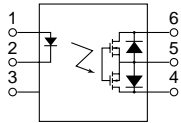
HE 1 Form A
High Capacity (AQV252G)



(Height includes
standoff)



mm inch



FEATURES

1. Greatly increased load current in a compact DIP package
Continuous load current: 2.5A
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

Compliance with RoHS Directive

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			
					Picked from the 1/2/3-pin side	Picked from the 4/5/6-pin side			
AC/DC dual use	60 V	2.5 A	DIP6-pin	AQV252G	AQV252GA	AQV252GAX	AQV252GAZ	1 tube contains: 50 pcs. 1 batch contains: 500 pcs.	1,000 pcs.

*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 relay.

RATING

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

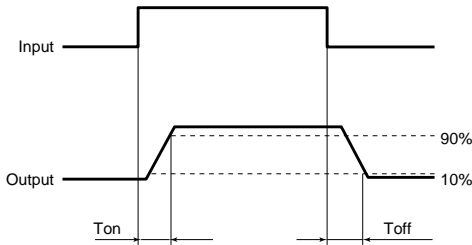
Item		Symbol	Type of connection	AQV252G(A)	Remarks	
Input	LED forward current	I_F		50 mA		
	LED reverse voltage	V_R		5 V		
	Peak forward current	I_{FP}		1 A	$f = 100 \text{ Hz}$, Duty factor = 0.1%	
	Power dissipation	P_{in}		75 mW		
Output	Load voltage (peak AC)	V_L		60 V		
	Continuous load current	I_L		A	2.5 A	A connection: Peak AC, DC B, C connection: DC
				B	3.5 A	
				C	5.0 A	
	Peak load current	I_{peak}			6.0 A	100ms (1 shot), $V_L = \text{DC}$
	Power dissipation	P_{out}			500 mW	
Total power dissipation	P_T		550 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_{stg}		-40°C to +100°C -40°F to +212°F		

HE 1 Form A High Capacity (AQV252G)

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

Item			Symbol	Type of connection	AQV252G(A)	Condition
Input	LED operate current	Typical	I _{Fon}	—	0.5 mA	I _L = 100mA
		Maximum			3 mA	
	LED turn off current	Minimum	I _{Foff}	—	0.2 mA	I _L = 100mA
		Typical			0.45 mA	
LED dropout voltage	Typical	V _F	—	1.14 V (1.32 V at I _F = 50 mA)	I _F = 5 mA	
	Maximum			1.5 V		
Output	On resistance	Typical	R _{on}	A	0.08 Ω	I _F = 5 mA I _L = Max. Within 1 s on time
		Maximum			0.12 Ω	
		Typical	R _{on}	B	0.04 Ω	
		Maximum			0.06 Ω	
		Typical	R _{on}	C	0.02 Ω	
		Maximum			0.03 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}	—	1.1 ms	I _F = 5 mA, I _L = 100 mA V _L = 10 V
		Maximum			5.0 ms	
	Turn off time*	Typical	T _{off}	—	0.25 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
Maximum		1.5 pF			V _B = 0 V	
Initial I/O isolation resistance	Minimum	R _{iso}	—	1,000 MΩ	500 V DC	

*Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

Please obey the following conditions to ensure proper relay 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.

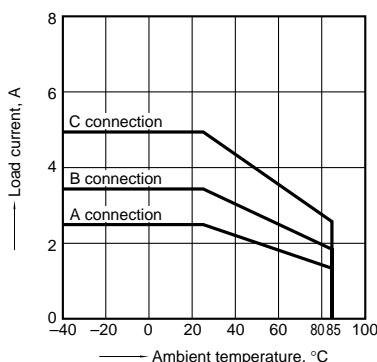
If you are considering to use these products for automotive applications, please contact your local Panasonic Electric Works technical representative.

For more information

REFERENCE DATA

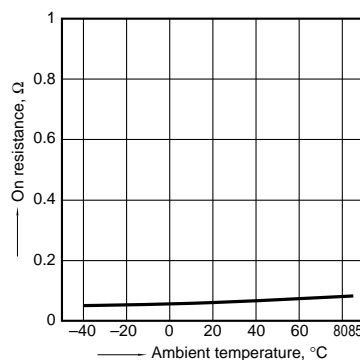
1. Load current vs. ambient temperature characteristics

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



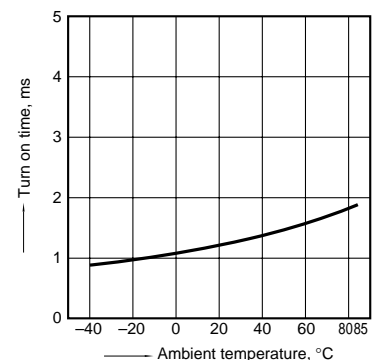
2. On resistance vs. ambient temperature characteristics

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

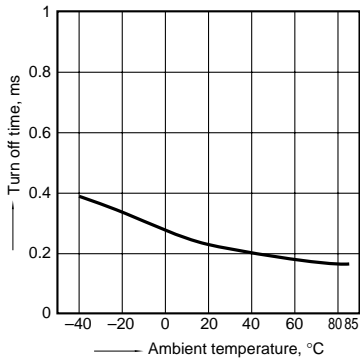
LED current: 5 mA; Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



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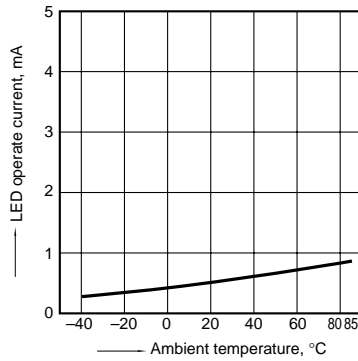
4. Turn off time vs. ambient temperature characteristics

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



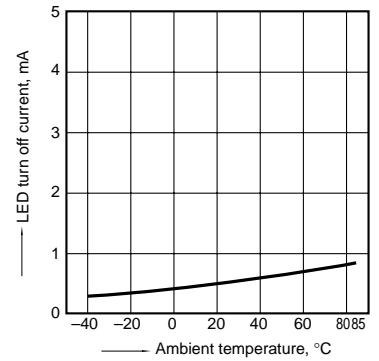
5. LED operate current vs. ambient temperature characteristics

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



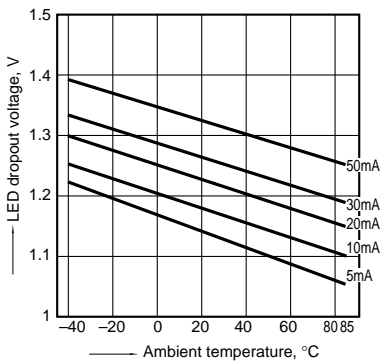
6. LED turn off current vs. ambient temperature characteristics

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



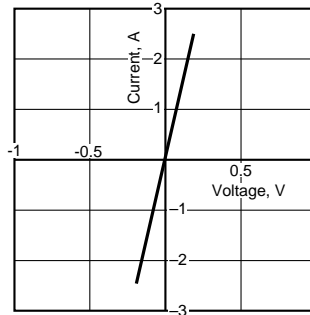
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



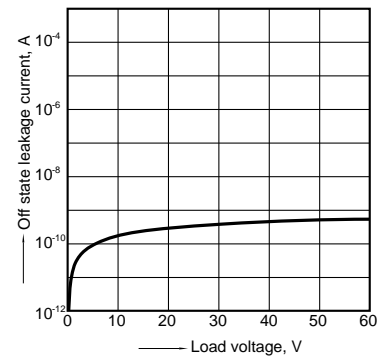
8. Current vs. voltage characteristics of output at MOS portion

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



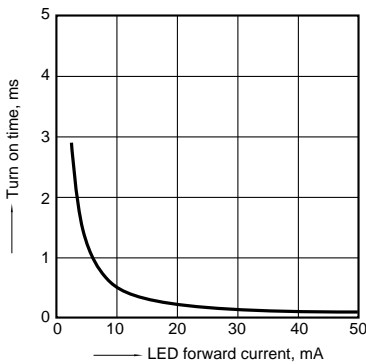
9. Off state leakage current vs. load voltage characteristics

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



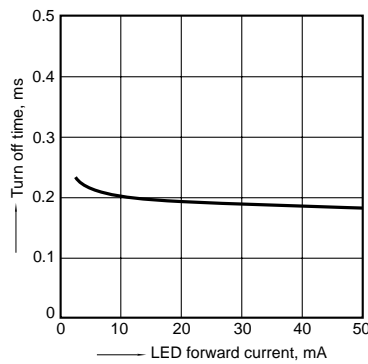
10. Turn on time vs. LED forward current characteristics

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

