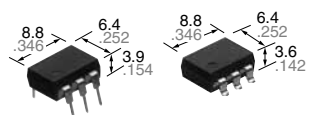


Standard type:  US / Reinforced type:  US 

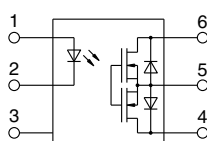
**Normally closed
DIP6-pin type
Low on-resistance with
250V/400V load voltage**

**PhotoMOS®
HE 1 Form B
(AQV45○, AQV454H)**



(Height includes standoff)

mm inch

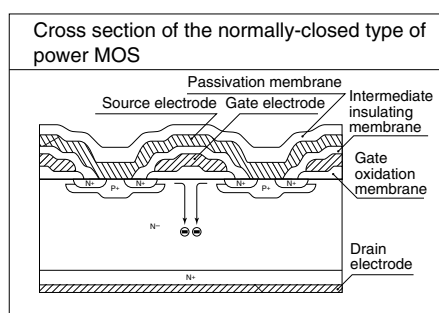


RoHS compliant

FEATURES

1. 1 Form B (Normally-closed) type with low on-resistance

This has been achieved thanks to the built-in MOSFET processed by our proprietary method, DSD (Double-diffused and Selective Doping) method.



2. Controls low-level analog signals

PhotoMOS feature extremely low closed-circuit offset voltage to enable control of low-level analog signals without distortion.

3. High sensitivity and low on-resistance

Can control max. 0.2 A load current with 5 mA input current. Low on-resistance of Typ. 5.5 Ω (AQV453).

4. Reinforced insulation 5,000 Vrms type also available.

More than 0.4 mm .016 inch internal insulation distance between inputs and outputs. Conforms to IEC950 (reinforced insulation).

TYPICAL APPLICATIONS

- Security equipment
- High-speed inspection machines
- Measuring instruments
- Telephone equipment
- Sensing equipment

TYPES

	I/O isolation	Output rating*		Package	Part No.				Packing quantity	
		Load voltage	Load current		Through hole terminal	Surface-mount terminal		Tube		
						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	1,500 Vrms	250 V	200 mA	DIP6-pin	AQV453	AQV453A	AQV453AX	AQV453AZ	1 tube contains: 50 pcs. 1 batch contains: 500 pcs.	1,000 pcs.
		400 V	150 mA		AQV454	AQV454A	AQV454AX	AQV454AZ		
	Reinforced 5,000 Vrms				AQV454H	AQV454HA	AQV454HAX	AQV454HAZ		

* 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

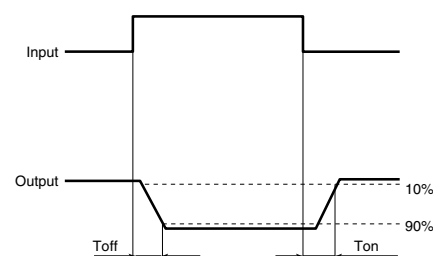
1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

Item		Symbol	Type of connection	AQV453(A)		AQV454(A)	AQV454H(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 Hz, Duty factor = 0.1%
	Power dissipation	P _{in}		75 mW				
Output	Load voltage (peak AC)	V _L		250 V	400 V			
	Continuous load current	I _L		A	0.2 A	0.15 A		A connection: Peak AC, DC B, C connection: DC
				B	0.3 A	0.18 A		
				C	0.4 A	0.25 A		
	Peak load current	I _{PEAK}			0.6 A	0.5 A		A connection: 100 ms (1 shot), V _L = DC
	Power dissipation	P _{OUT}			360 mW			
Total power dissipation		P _T		410 mW				
I/O isolation voltage		V _{ISO}		1,500 Vrms		5,000 Vrms		
Ambient temperature	Operating	T _{opr}		−40 to +85°C −40 to +185°F				(Non-icing at low temperatures)
	Storage	T _{sto}		−40 to +100°C −40 to +212°F				

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

Item			Symbol	Type of connection	AQV453(A)	AQV454(A)	AQV454H(A)	Condition	
Input	LED operate (OFF) current	Typical	I _{Foff}	—	1 mA	0.9 mA	1.4 mA	I _L = Max.	
		Maximum			3 mA				
	LED reverse (ON) current	Minimum	I _{Fon}	—	0.4 mA			I _L = Max.	
		Typical			0.9 mA	0.8 mA	1.3 mA		
	LED dropout voltage	Typical	V _F	—	1.25 V (1.14 V at I _F =5 mA)			I _F = 50 mA	
		Maximum			1.5 V				
Output	On resistance	Typical	R _{on}	A	5.5 Ω	11 Ω		I _F = 0 mA I _L = Max. Within 1 s	
		Maximum			8 Ω	16 Ω			
		Typical	R _{on}	B	2.7 Ω	6.3 Ω		I _F = 0 mA I _L = Max. Within 1 s	
		Maximum			4 Ω	8 Ω			
		Typical	R _{on}	C	1.4 Ω	3.1 Ω		I _F = 0 mA I _L = Max. Within 1 s	
		Maximum			2 Ω	4 Ω			
	Off state leakage current	Maximum	I _{LLeak}	—	1 μA	1 μA	10 μA	I _F = 5 mA V _L = Max.	
	Transfer characteristics	Operate (OFF) time*	Typical	T _{off}	—	1.52 ms	1.2 ms	1.8 ms	I _F = 0 mA → 5 mA I _L = Max.
			Maximum			3 ms	2.0 ms	3.0 ms	
Reverse (ON) time*		Typical	T _{on}	—	0.4 ms	0.36 ms	0.4 ms	I _F = 5 mA → 0 mA I _L = Max.	
		Maximum			1 ms				
I/O capacitance		Typical	C _{iso}	—	1.3 pF			f = 1 MHz V _B = 0 V	
		Maximum			3 pF				
Initial I/O isolation resistance		Minimum	R _{iso}	—	1,000 MΩ			500 V DC	

*Operate/Reverse 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
AQV453(A)	Load voltage (Peak AC)	—	200	V
	Continuous load current (A connection)	—	0.2	A
AQV454(A)	Load voltage (Peak AC)	—	320	V
	Continuous load current (A connection)	—	0.15	A
AQV454H(A)	Load voltage (Peak AC)	—	320	V
	Continuous load current (A connection)	—	0.15	A

■ These products are not designed for automotive use.

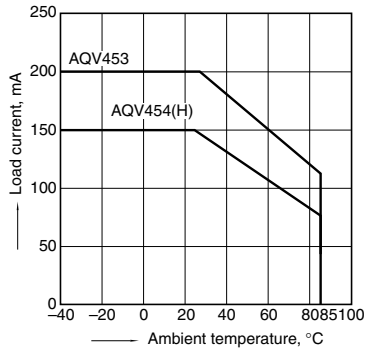
If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

REFERENCE DATA

1. Load current vs. ambient temperature characteristics

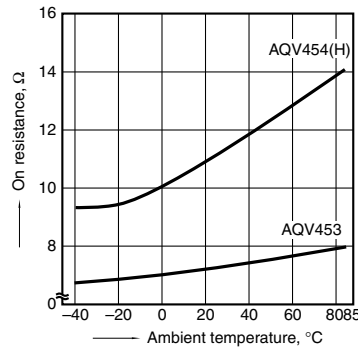
Allowable ambient temperature: -40 to $+85^{\circ}\text{C}$
 -40 to $+185^{\circ}\text{F}$

Type of connection: A



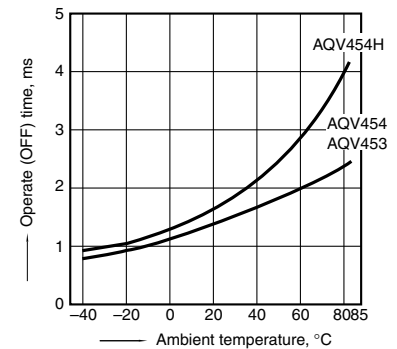
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 4 and 6;
 LED current: 0 mA; Load voltage: Max. (DC);
 Continuous load current: Max. (DC)



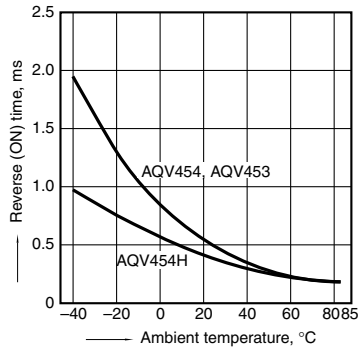
3. Operate (OFF) time vs. ambient temperature characteristics

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



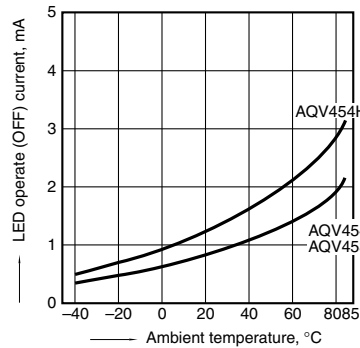
4. Reverse (ON) time vs. ambient temperature characteristics

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



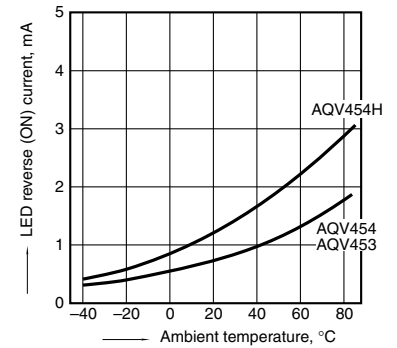
5. LED operate (OFF) current vs. ambient temperature characteristics

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



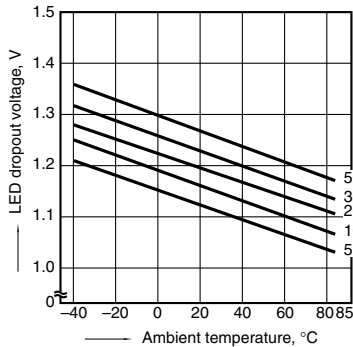
6. LED reverse (ON) current vs. ambient temperature characteristics

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



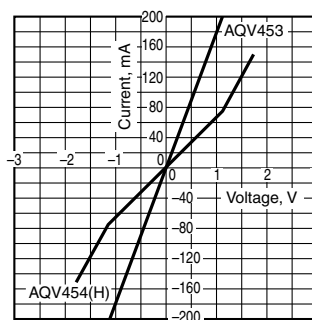
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



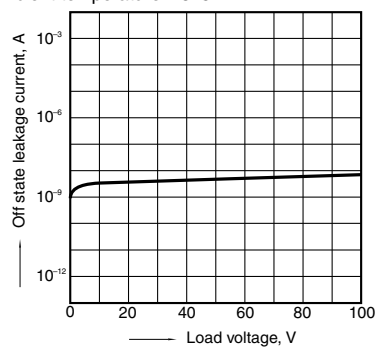
8. Current vs. voltage characteristics of output at MOS portion

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



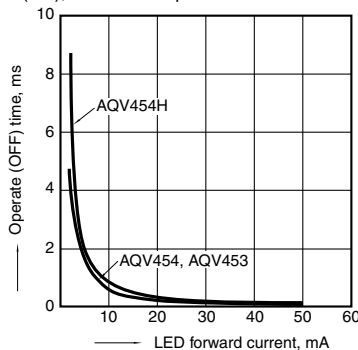
9. Off state leakage current vs. load voltage characteristics

Sample: AQV454;
 Measured portion: between terminals 4 and 6;
 Ambient temperature: 25°C 77°F



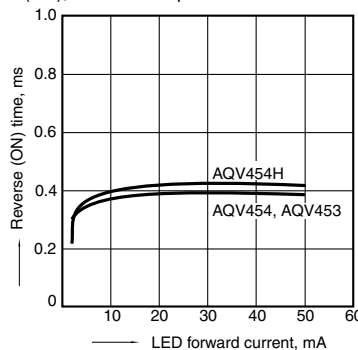
10. Operate (OFF) time vs. LED forward current characteristics

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



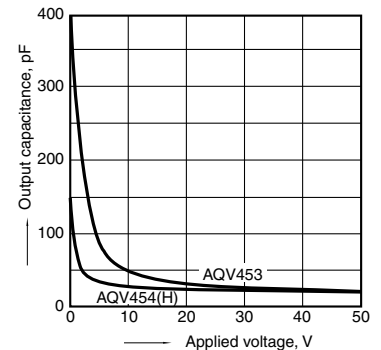
11. Reverse (ON) time vs. LED forward current characteristics

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



12. Output capacitance vs. applied voltage characteristics

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



"PhotoMOS®", "PhotoMOS" and "PHOTOMOS" are registered trademarks of Panasonic Corporation.

*Recognized in Japan, the United States, all member states of European Union and other countries.

Please contact

Panasonic Corporation

Electromechanical Control Business Division

■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

Panasonic®

©Panasonic Corporation 2017

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panasonic:

[AQV453A](#)



**Стандарт
Электрон
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331