

TYPES

Type	Output rating*		Type	Part No.				Packing quantity	
				Through hole terminal	Surface-mount terminal				
	Repetitive peak OFF-state voltage	ON-state RMS current		Tube packing style	Tube packing style	Tape and reel packing style		Tube	Tape and reel
AC type	600 V	0.3 A	Zero-cross	AQH0213	AQH0213A	AQH0213AX	AQH0213AZ		
		0.6 A		AQH1213	AQH1213A	AQH1213AX	AQH1213AZ		
		0.9 A		AQH2213	AQH2213A	AQH2213AX	AQH2213AZ		
		1.2 A		AQH3213	AQH3213A	AQH3213AX	AQH3213AZ		
		0.3 A	Random	AQH0223	AQH0223A	AQH0223AX	AQH0223AZ		
		0.6 A		AQH1223	AQH1223A	AQH1223AX	AQH1223AZ		
		0.9 A		AQH2223	AQH2223A	AQH2223AX	AQH2223AZ		
		1.2 A		AQH3223	AQH3223A	AQH3223AX	AQH3223AZ		

* Indicate the repetitive peak OFF-state voltage and ON-state RMS current; peak AC.

Note: For space reasons, the SMD terminal shape indicator "A" and the package type indicator "X" and "Z" are omitted from the seal.

RATING

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

Item	Symbol	AQH0213, AQH0223	AQH1213, AQH1223	AQH2213, AQH2223	AQH3213, AQH3223	Remarks
Input	LED forward current	I _F	50 mA			
	LED reverse voltage	V _R	6 V			
	Peak forward current	I _{FP}	1 A			
Output	Repetitive peak OFF-state voltage	V _{DRM}	600 V			
	ON-state RMS current	I _{T (RMS)}	0.3 A	0.6 A	0.9 A	1.2 A
	Non-repetitive surge current	I _{TSM}	3 A	6 A	9 A	12 A
I/O isolation voltage	V _{iso}	5,000 Vrms				
Operating temperature	T _{opr}	-30 to +85°C -22 to +185°F				Non-condensing at low temperatures
Storage temperature	T _{stg}	-40 to +125°C -40 to +257°F				

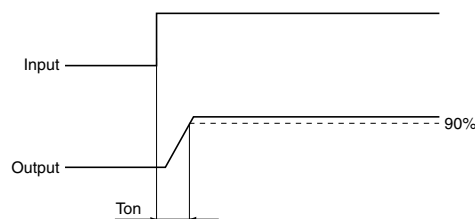
Note: "A", "AX" and "AZ" at the end of the part numbers have been omitted.

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

Item	Symbol	AQH0213, AQH1213, AQH2213, AQH3213	AQH0223, AQH1223, AQH2223, AQH3223	Remarks
Input	LED dropout voltage	Typical	1.21 V	I _F = 20 mA
		Maximum	1.3 V	
	LED reverse current	Typical	—	V _R = 6 V
Maximum		10 μA		
Output	Peak OFF-state current	Typical	—	I _F = 0 mA V _{DRM} = 600 V
		Maximum	100 μA	
	Peak ON-state voltage	Typical	—	I _F = 10 mA I _{TM} = Max.
		Maximum	2.5 V	
Holding current	Typical	—	25 mA	
	Maximum	25 mA		
Critical rate of rise of OFF-state voltage	Minimum	dv/dt	200 V/μs	V _{DRM} = 600 V × 1/√2
Transfer characteristics	Trigger LED current	Maximum	I _{FT}	10 mA V _D = 6 V R _L = 100 Ω
	Zero-cross voltage	Maximum	V _{ZC}	50 V I _F = 10 mA
	Turn on time*1	Maximum	T _{ON}	100 μs I _F = 20 mA V _D = 6 V R _L = 100 Ω
	I/O isolation resistance	Minimum	R _{iso}	50 GΩ 500 V DC

Notes: 1. For type of connection, see "SCHEMATIC AND WIRING DIAGRAMS".
2. "A", "AX" and "AZ" at the end of the part numbers have been omitted.

***1 Turn on time**



RECOMMENDED OPERATING CONDITIONS

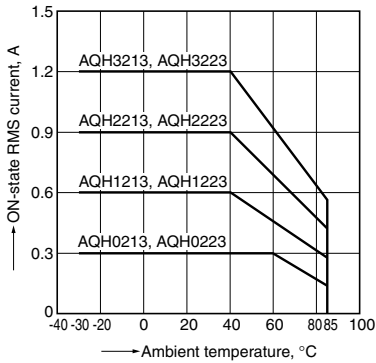
Please use under recommended operating conditions to obtain expected characteristics.

Item	Symbol	Min.	Max.	Unit
Input LED current	I _F	15	25	mA

REFERENCE DATA

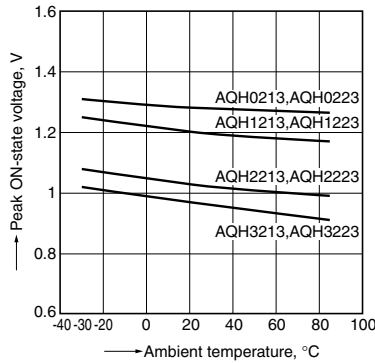
1. ON-state RMS current vs. Ambient temperature characteristics

Allowable ambient temperature:
-30 to +85°C -22 to +185°F



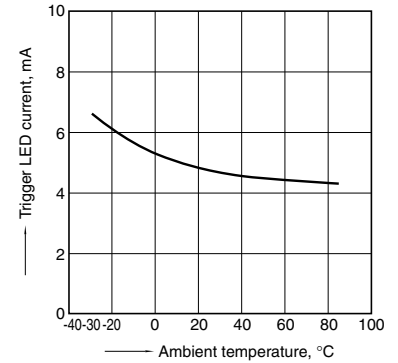
2. Peak ON-state voltage vs. Ambient temperature characteristics

LED current: 10 mA; ON current: Max.
Measured portion: between terminals 6 and 8



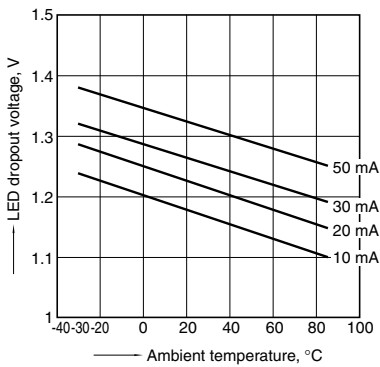
3. Trigger LED current vs. Ambient temperature characteristics

Load voltage: 6 V DC;
Load resistance: 100 Ω



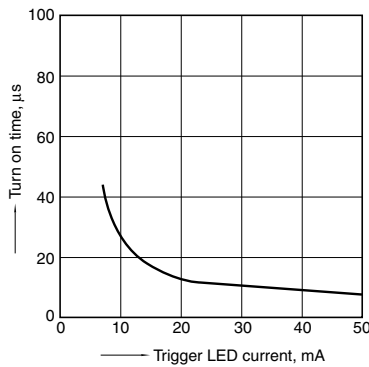
4. LED dropout voltage vs. Ambient temperature characteristics

LED current: 10 to 50 mA



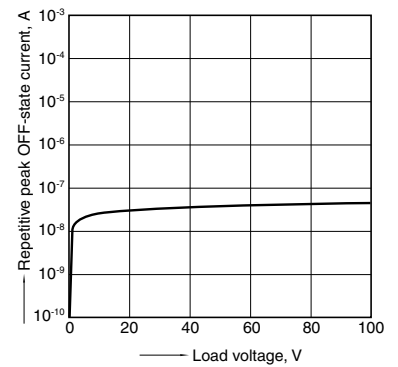
5. Turn on time vs. LED current characteristics

Load voltage: 6 V DC; Load resistance: 100 Ω
Measured portion: between terminals 6 and 8

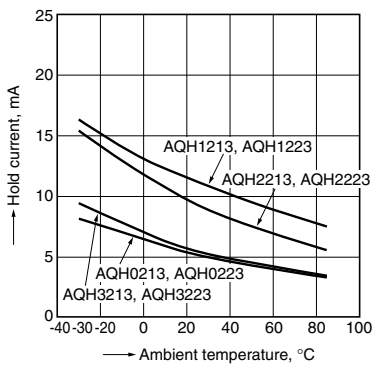


6. Repetitive peak OFF-state current vs. Load voltage characteristics

Ambient temperature: 25°C 77°F; Measured portion: between terminals 6 and 8; LED current: 0 mA

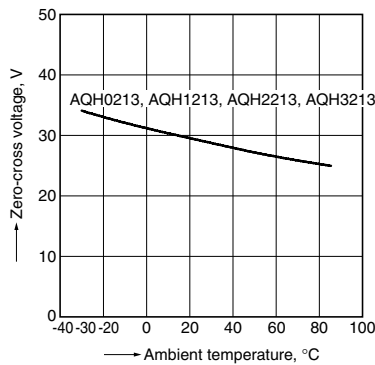


7. Hold current vs. Ambient temperature characteristics



8. Zero-cross voltage vs. Ambient temperature characteristics

LED current: 10 mA



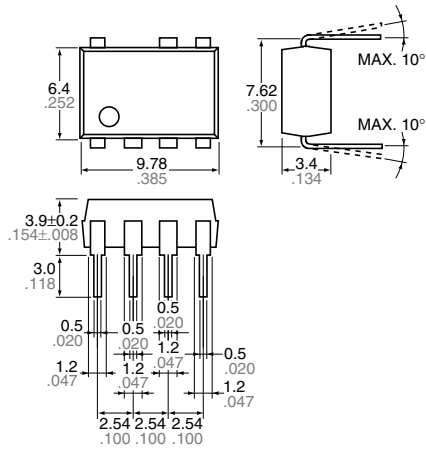
DIMENSIONS (mm inch)

The CAD data of the products with a **CAD** mark can be downloaded from: <https://industrial.panasonic.com/ac/e/>

Through hole terminal type

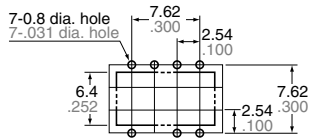
CAD

External dimensions



Terminal thickness: 0.25 .010
General tolerance: ±0.1 ±.004

PC board pattern (BOTTOM VIEW)

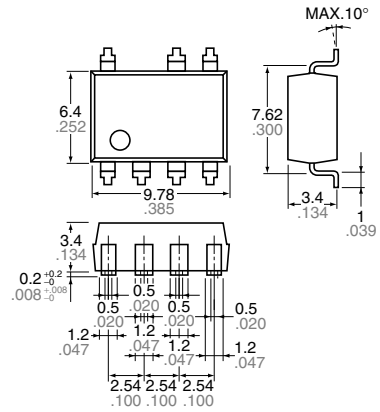


Tolerance: ±0.1 ±.004

Surface mount terminal type

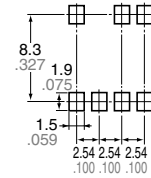
CAD

External dimensions



Terminal thickness: 0.25 .010
General tolerance: ±0.1 ±.004

Recommended mounting pad (TOP VIEW)



Tolerance: ±0.1 ±.004

SCHEMATIC AND WIRING DIAGRAMS

Schematic	Output configuration	Load	Wiring diagram
<p>Zero-cross circuit</p>	1 Form A	AC	
	1 Form A	AC	

Please contact

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Specifications are subject to change without notice.