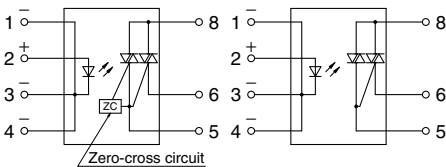




Compact DIP type SSR
Ideal for AC load control

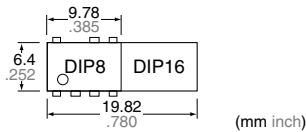
AQ-H RELAYS



RoHS compliant

FEATURES

- 1. Supports 0.3 A, 0.6 A, 0.9 A and 1.2 A ON-state RMS currents.
- 2. The 1.2 A type saves space with a DIP 8-pin package.



3. Handles both 100 and 200 Vrms loads

This relay handles both voltages in a single product. It is not necessary for users that use both types to manage separate part numbers.

- 4. High dielectric strength: 5,000 Vrms (between input and output)
- 5. Two types available: Zero-cross type and Random type

TYPICAL APPLICATIONS

- 1. Home appliances (air conditioner, microwave oven, washing machine, personal hygiene system, refrigerator, fan heater, inductive heating cooker, rice cooker and humidifier, etc.)
- 2. Industrial equipment

ORDERING INFORMATION

AQH		2				
ON-state RMS current						
0: 0.3 A						
1: 0.6 A						
2: 0.9 A						
3: 1.2 A						
Repetitive peak OFF-state voltage						
2: 600 V						
Type						
1: Zero-cross						
2: Random						
Number of pin						
3: 8 pins						
Package						
Nil: DIP						
S: SOP						
A: SMD						
Packing						
Nil: Tube						
X: Tape and reel packing X						
Z: Tape and reel packing Z						

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
				Picked from the 1/2/3/4-pin side	Picked from the 5/6/8-pin side				
AC type	600 V	0.3 A	Zero-cross	AQH0213	AQH0213A	AQH0213AX	AQH0213AZ	1 tube contains 50 pcs. 1 batch contains 500 pcs.	1,000 pcs.
		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				$f = 100 \text{ Hz}$, Duty Ratio = 0.1%
Output	Repetitive peak OFF-state voltage	V_{DRM}	600 V				
	ON-state RMS current	$I_T \text{ (RMS)}$	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	60 Hz, 1 cycle
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.

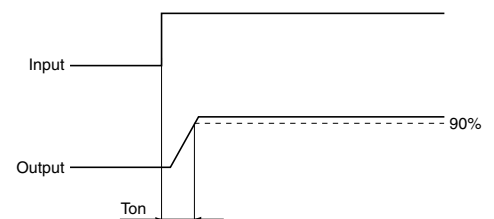
2. Characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	AQH0213, AQH1213, AQH2213, AQH3213	AQH0223, AQH1223, AQH2223, AQH3223	Remarks
Input	LED dropout voltage	Typical	V _F	1.21 V		I _F = 20 mA
		Maximum		1.3 V		
	LED reverse current	Typical	I _R	—		V _R = 6 V
		Maximum		10 μA		
Output	Peak OFF-state current	Typical	I _{DRM}	—		I _F = 0 mA V _{DRM} = 600 V
		Maximum		100 μA		
	Peak ON-state voltage	Typical	V _{TM}	—		I _F = 10 mA I _{TM} = Max.
		Maximum		2.5 V		
	Holding current	Typical	I _H	—		
		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

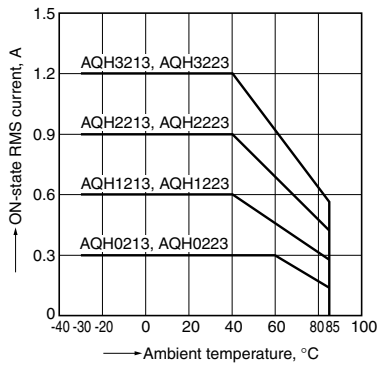
Please use under recommended operating conditions to obtain expected characteristics.

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

REFERENCE DATA

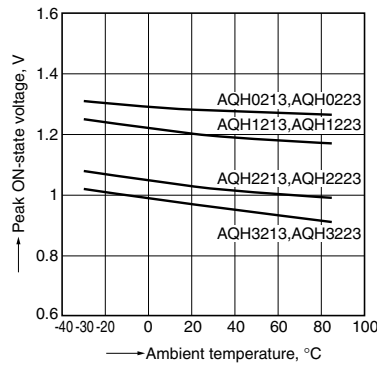
1. ON-state RMS current vs. Ambient temperature characteristics

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



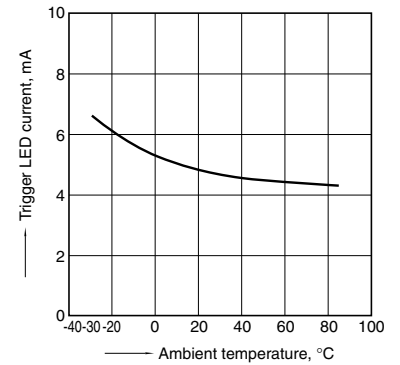
2. Peak ON-state voltage vs. Ambient temperature characteristics

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



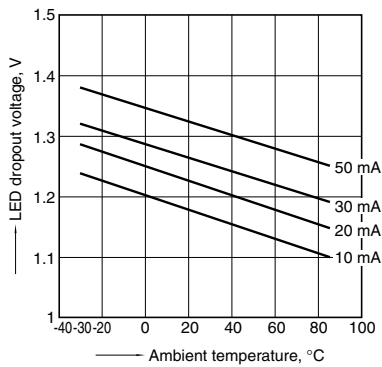
3. Trigger LED current vs. Ambient temperature characteristics

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



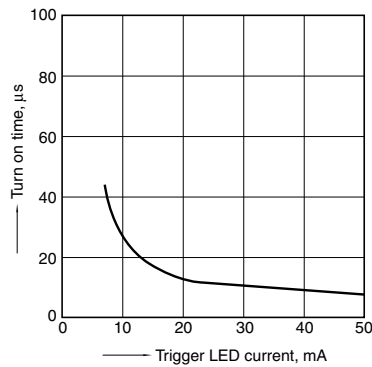
4. LED dropout voltage vs. Ambient temperature characteristics

LED current: 10 to 50 mA



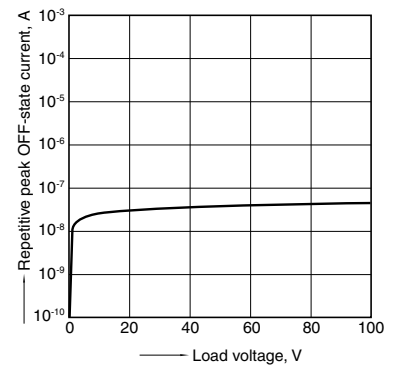
5. Turn on time vs. LED current characteristics

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

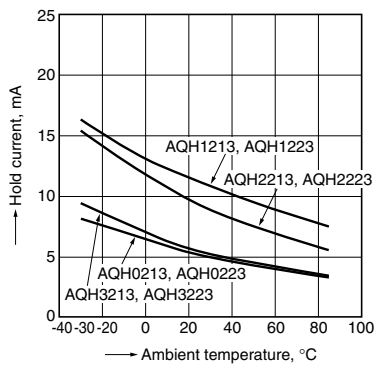


6. Repetitive peak OFF-state current vs. Load voltage characteristics

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

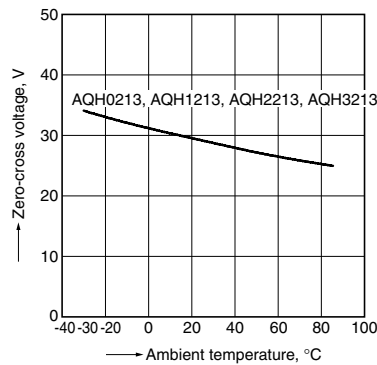


7. Hold current vs. Ambient temperature characteristics



8. Zero-cross voltage vs. Ambient temperature characteristics

LED current: 10 mA



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 2018

Mouser Electronics

Authorized Distributor

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

Panasonic:

[AQH3213A](#) [AQH3213](#) [AQH3223](#) [AQH2213A](#) [AQH1213A](#) [AQH2213](#) [AQH1213](#) [AQH2223](#) [AQH0213](#) [AQH0213A](#)
[AQH0213AX](#) [AQH0213AZ](#) [AQH0223](#) [AQH0223A](#) [AQH0223AX](#) [AQH0223AZ](#) [AQH1213AX](#) [AQH1213AZ](#) [AQH1223](#)
[AQH1223A](#) [AQH1223AX](#) [AQH1223AZ](#) [AQH2213AX](#) [AQH2213AZ](#) [AQH2223A](#) [AQH2223AX](#) [AQH2223AZ](#)
[AQH3213AX](#) [AQH3213AZ](#) [AQH3223A](#) [AQH3223AX](#) [AQH3223AZ](#) [AQH2223W](#) [AQH0223AY](#) [AQH2213W](#)