

AQ○28○S

RATING

1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)
SOP 4pin

Item		Symbol	AQY282S	AQY280S	AQY284S	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	60 V	350 V	400 V	
	Continuous load current (peak AC)	I _L	0.5 A	0.12 A	0.1 A	
	Peak load current	I _{peak}	1.5 A	0.3 A	0.24 A	100 ms (1 shot), V _L = DC
	Power dissipation	P _{out}	300 mW			
Total power dissipation		P _T	350 mW			
I/O isolation voltage		V _{iso}	1,500 V AC			
Operating temperature		T _{opr}	−40°C to +85°C −40°F to +185°F			Non-condensing at low temperature
Storage temperature		T _{stg}	−40°C to +100°C −40°F to +212°F			

SOP 8pin

Item		Symbol	AQW282S	AQW280S	AQW284S	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	60 V	350 V	400 V	
	Continuous load current (peak AC)	I _L	0.35 (0.5) A	0.1 (0.13) A	0.08 (0.1) A	(): in case of using only 1 channel
	Peak load current	I _{peak}	1.05 A	0.3 A	0.24 A	100 ms (1 shot), V _L = DC
	Power dissipation	P _{out}	600 mW			
Total power dissipation		P _T	650 mW			
I/O isolation voltage		V _{iso}	1,500 V AC			
Operating temperature		T _{opr}	−40°C to +85°C −40°F to +185°F			Non-condensing at low temperature
Storage temperature		T _{stg}	−40°C to +100°C −40°F to +212°F			

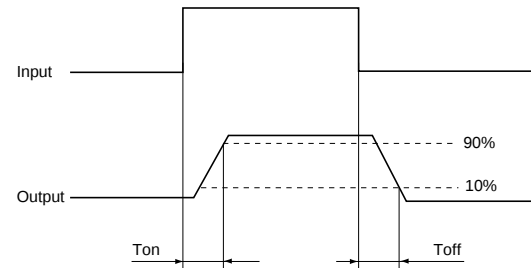
2. Electrical characteristics (Ambient temperature: 25°C 77°F)
SOP 4pin

Item			Symbol	AQY282S	AQY280S	AQY284S	Condition
Input	LED operate current	Typical	I _{Fon}	1.8 mA			I _L = Max.
		Maximum		3.0 mA			
	LED turn off current	Minimum	I _{Foff}	0.2 mA			I _L = Max.
		Typical		1.6 mA			
	LED dropout voltage	Typical	V _F	1.14 V (1.25 V at I _F = 50mA)			I _F = 5 mA
		Maximum		1.5 V			
Output	On resistance	Typical	R _{on}	0.85Ω	20Ω	28Ω	I _F = 5 mA I _L = Max. Within 1 s on time
		Maximum		2.5Ω	25Ω	35Ω	
	Off state leakage current	Maximum	I _{Leak}	1μA			I _F = 0 mA V _L = Max.
Transfer characteristics	Turn on time*	Typical	T _{on}	0.9 ms	0.3 ms		I _F = 5 mA I _L = Max.
		Maximum		3 ms			
	Turn off time*	Typical	T _{off}	0.5 ms		I _F = 5 mA I _L = Max.	
		Maximum		2 ms			
	I/O capacitance	Typical	C _{iso}	0.8 pF		f = 1 MHz V _B = 0V	
		Maximum		1.5 pF			
	Initial I/O isolation resistance	Minimum	R _{iso}	1,000 MΩ			500 V DC

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SOP 8pin			Item	Symbol	AQW282S	AQW280S	AQW284S	Condition
Input	LED operate current	Typical	I _{Fon}	1.8 mA			I _L = Max.	
		Maximum		3.0 mA				
	LED turn off current	Minimum	I _{Foff}	0.2 mA			I _L = Max.	
		Typical		1.6 mA				
	LED dropout voltage	Typical	V _F	1.14 V (1.25 V at I _F = 50mA)			I _F = 5 mA	
Maximum		1.5 V						
Output	On resistance	Typical	R _{on}	0.85Ω	20Ω	28Ω	I _F = 5 mA I _L = Max. Within 1 s on time	
		Maximum		2.5Ω	25Ω	35Ω		
	Off state leakage current	Maximum	I _{Leak}	1μA			I _F = 0 mA V _L = Max.	
Transfer characteristics	Turn on time*	Typical	T _{on}	0.9 ms	0.3 ms		I _F = 5 mA I _L = Max.	
		Maximum		3 ms				
	Turn off time*	Typical	T _{off}	0.5 ms		I _F = 5 mA I _L = Max.		
		Maximum		2 ms				
	I/O capacitance	Typical	C _{iso}	0.8 pF		f = 1 MHz V _B = 0V		
		Maximum		1.5 pF				
Initial I/O isolation resistance	Minimum	R _{iso}	1,000 MΩ			500 V DC		

*Turn on/Turn off time



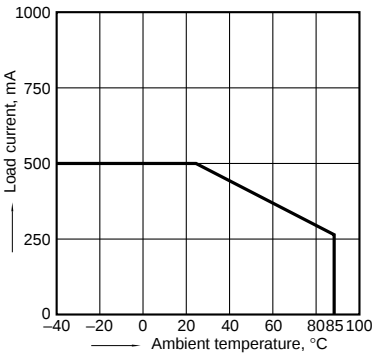
3-4 the terminal leads receive solder plating or solder dip plating.

REFERENCE DATA

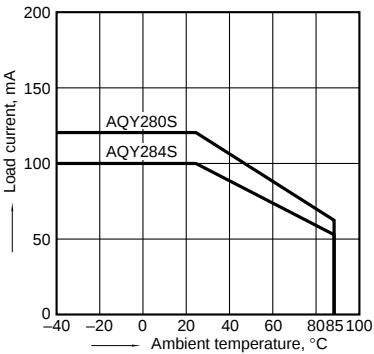
[SOP type]

1. Load current vs. ambient temperature characteristics
Allowable ambient temperature: -40°C to +85°C
-40°F to +185°F

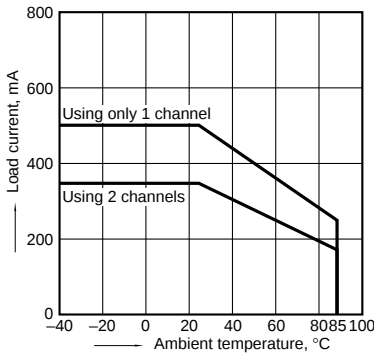
Type of connection: A
(1) AQY282S



(2) AQY280S, AQY284S



(3) AQW282S

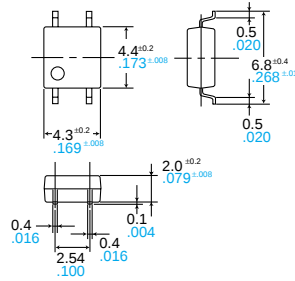


AQ○28○S, AQ○28○EH

DIMENSIONS

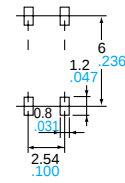
mm inch

AQY28○S



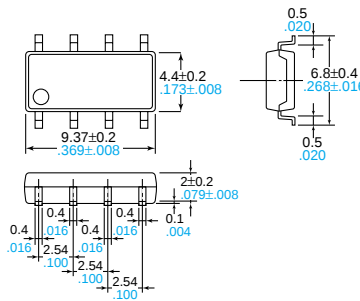
Terminal thickness = 0.15 .006
General tolerance: ±0.1 ±.004

Recommended mounting pad (Top view)



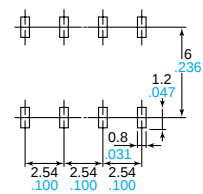
Tolerance: ±0.1 ±.004

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Terminal thickness = 0.15 .006
General tolerance: ±0.1 ±.004

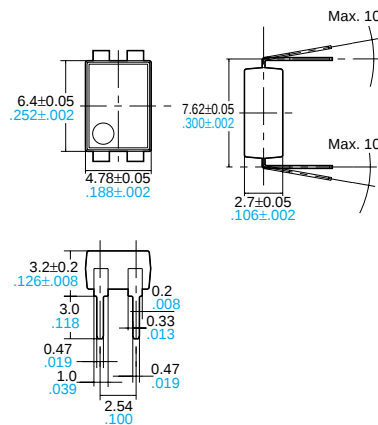
Recommended mounting pad (Top view)



Tolerance: ±0.1 ±.004

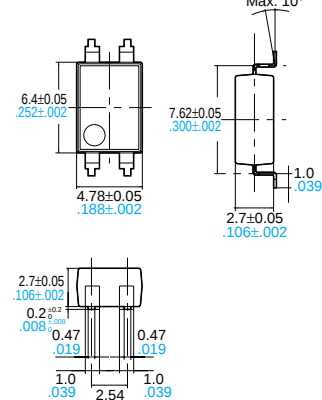
AQY28○EH(A)

Through hole terminal type



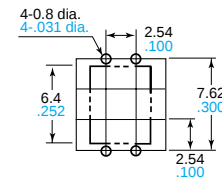
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

Surface mount terminal type



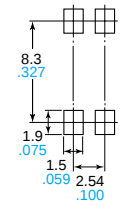
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

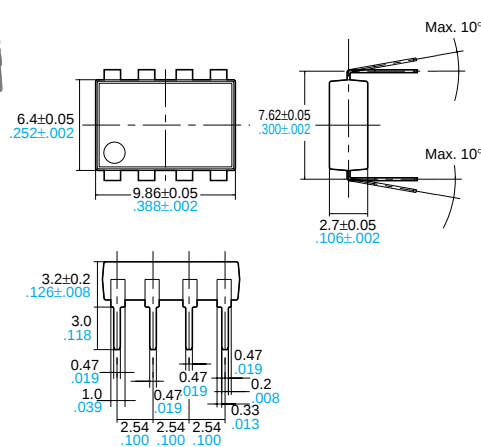
Mounting pad (Top view)



Tolerance: ±0.1 ±.004

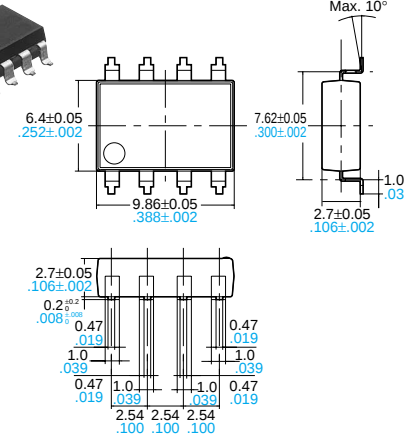
AQW28○EH(A)

Through hole terminal type



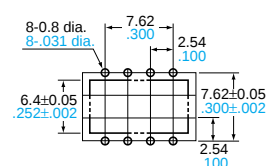
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

Surface mount terminal type



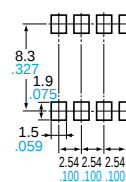
Terminal thickness = 0.2 .008
General tolerance: ±0.1 ±.004

PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

Mounting pad (Top view)



Tolerance: ±0.1 ±.004