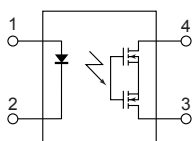


mm inch



### FEATURES

#### 1. Short circuit protection (Latch type)

When the output current exceeds a fixed amount, it is cut and the off state is maintained. The relay can be restored by turning off the input current and then turning it back on.

#### 2. SO package 4-Pin type in super miniature design

#### 3. Tape and reel

The device comes standard in a tape and reel (1,000 pcs./reel) to facilitate automatic insertion machines.

#### 4. Controls low-level analog signals

#### 5. Low-level off state leakage current

### TYPICAL APPLICATIONS

- Modem and Telephone equipment
- Measuring and Testing equipment
- Security equipment
- Industrial equipment
- Traffic signal control

### TYPES

Type	Output rating*		Part No.		Packing quantity in tape and reel
	Load voltage	Load current	Picked from the 1/2-pin side 1 Form A	Picked from the 3/4-pin side 1 Form A	
AC/DC type	350 V	120 mA	AQY210KSX	AQY210KSZ	1,000 pcs.

\* Indicate the peak AC and DC values.

Notes: (1) Tape package is the standard packing style. Also available in tube. (Part No. suffix "X" or "Z" is not needed when ordering; Tube: 100 pcs.; Case: 2,000 pcs.)

(2) For space reasons, the initial letters of the product number "AQY" and "S" are omitted on the product seal.

The package type indicator "X" and "Z" are omitted from the seal. (Ex. the label for product number AQY210KS is 210K).

### RATING

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

Item		Symbol	AQY210KS	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)	$V_L$	350 V	
	Continuous load current (peak AC)	$I_L$	0.12 A	
	Power dissipation	$P_{out}$	300 mW	
Total power dissipation		$P_T$	350 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	

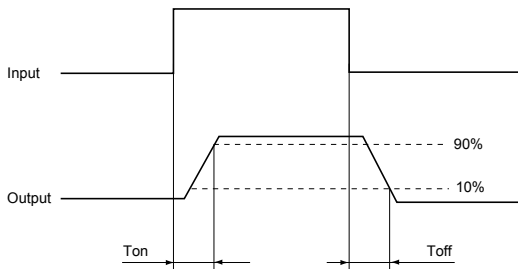
# GU PhotoMOS (AQY210KS)

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

Item			Symbol	AQY210KS	Condition	
Input	LED operate current	Typical	$I_{Fon}$	1.1 mA	$I_L = \text{Max.}$	
		Maximum		3.0 mA		
	LED turn off current	Minimum	$I_{Foff}$	0.3 mA	$I_L = \text{Max.}$	
		Typical		1.0 mA		
LED dropout voltage	Typical	$V_F$	1.32 V (1.13 V at $I_F = 5 \text{ mA}$ )	$I_F = 50 \text{ mA}$		
	Maximum		1.5 V			
Output	On resistance		$R_{on}$	23.5Ω	$I_F = 5 \text{ mA}$ $I_L = 120 \text{ mA}$ Within 1 s on time	
				Maximum		35Ω
	Off state leakage current		Maximum	$I_{Leak}$	1μA	$I_F = 0 \text{ mA}$ $V_L = 350 \text{ V}$
	Over current protection	Cut off current	Minimum	$I_{shut}$	160 mA	$I_F = 5 \text{ mA}$ Within 20ms on time
			Typical		200 mA	
Maximum			240 mA			
	Detection time	Typical	$T_{shut}$	50μs	$I_F = 5 \text{ mA}$ $V_L = 350 \text{ V DC short circuit}$	
Transfer characteristics	Turn on time*		$T_{on}$	Typical	0.7 ms	$I_F = 5 \text{ mA}$ $I_L = \text{Max.}$
				Maximum	2 ms	
	Turn off time*		$T_{off}$	Typical	0.07 ms	$I_F = 5 \text{ mA}$ $I_L = \text{Max.}$
				Maximum	1 ms	
	I/O capacitance		$C_{iso}$	Typical	0.8 pF	$f = 1 \text{ MHz}$ $V_B = 0 \text{ V}$
				Maximum	1.5 pF	
Initial I/O isolation resistance		Minimum	$R_{iso}$	1,000 MΩ	500 V DC	

Note: Recommendable LED forward current  $I_F = 5 \text{ mA}$ .

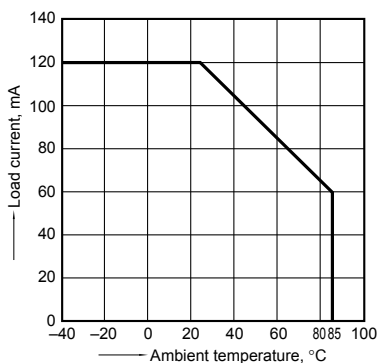
\*Turn on/Turn off time



## REFERENCE DATA

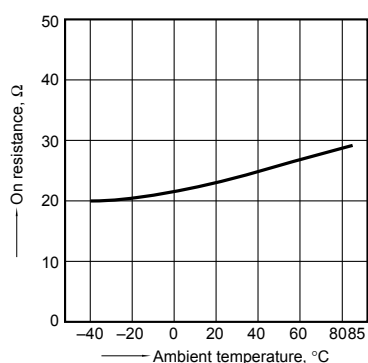
### 1. Load current vs. ambient temperature characteristics

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



### 2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4;  
LED current: 5 mA; Load current: Max.(DC)



### 3. Turn on time vs. ambient temperature characteristics

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

