

### FEATURES

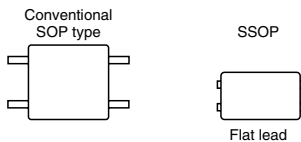
#### 1. Reduced package size

Lower surface has been reduced 60% and mounting space 40% compared to conventional 4-pin SOP type.

#### 2. Two types are available: A type with greatly reduced ON resistance, and a type with even lower output capacitance between terminals.

	AQY221R2V (R Type)	AQY221N2V (C Type)
Output capacitance (C)	12.5pF	1.0pF
ON resistance (R)	0.75Ω	9.5Ω

#### 3. Mounting space has been reduced and output signals have been improved by using new flat lead terminals.



#### 4. High speed switching (Part No.: AQY221N2V)

Turn on time: 0.02ms  
Turn off time: 0.02ms

### TYPICAL APPLICATIONS

#### Measuring and testing equipment

- Test equipment  
IC tester, Liquid crystal driver tester, semiconductor performance tester
- Board tester  
Bare board tester, In-circuit tester, function tester
- Medical equipment  
Ultrasonic wave diagnostic machine
- Multi-point recorder  
Strainmeter, thermo couple

RoHS Directive compatibility information  
<http://www.mew.co.jp/ac/e/environment/>

### TYPES

Type		Output rating*		Part No. (Tape and reel packing style)		Packing quantity
		Load voltage	Load current	Picked from the 1/4-pin side	Picked from the 2/3-pin side	
AC/DC type	Low on resistance (R Type)	40 V	250 mA	AQY221R2VY	AQY221R2VW	Tape and reel: 3,500 pcs.
	Low capacitance (C Type)	40 V	120 mA	AQY221N2VY	AQY221N2VW	

\* Indicate the peak AC and DC values.

Notes: (1) Tape package is the standard packing style.

- (2) For space reasons, the initial letters of the part number "AQY", the package style indicator "Y" or "W" are not marked on the relay.  
(Ex. the label for product number AQY221N2V is 221N2)

### RATING

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

Item		Symbol	AQY221R2V	AQY221N2V	Remarks
Input	LED forward current	I <sub>F</sub>	50mA		
	LED reverse voltage	V <sub>R</sub>	5V		
	Peak forward current	I <sub>FP</sub>	1A		f=100 Hz, Duty factor=0.1%
	Power dissipation	P <sub>in</sub>	75mW		
Output	Load voltage (peak AC)	V <sub>L</sub>	40V		
	Continuous load current (peak AC)	I <sub>L</sub>	0.25A	0.12A	Peak AC, DC
	Peak load current	I <sub>peak</sub>	0.75A	0.3A	100 ms (1 shot), V <sub>L</sub> = DC
	Power dissipation	P <sub>out</sub>	250mW		
Total power dissipation		P <sub>T</sub>	300mW		
I/O isolation voltage		V <sub>iso</sub>	1,500V AC		
Temperature limits	Operating	T <sub>opr</sub>	-40°C to +85°C -40°F to +185°F		Non-condensing at low temperatures
	Storage	T <sub>stg</sub>	-40°C to +100°C -40°F to +212°F		

# RF PhotoMOS (AQY221○2V)

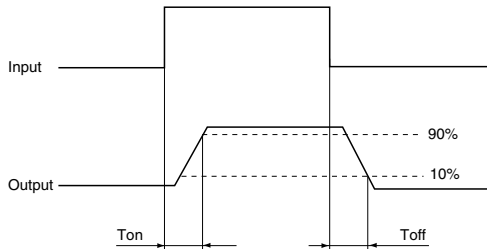
## 2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	AQY221R2V	AQY221N2V	Condition*2	
Input	LED operate current	Typical	I <sub>Fon</sub>	0.9 mA	1.0 mA	C type (I <sub>L</sub> = 80 mA) R type (I <sub>L</sub> = 250 mA)	
		Maximum		3.0 mA			
	LED turn off current	Minimum	I <sub>Foff</sub>	0.1 mA	0.2 mA	C type (I <sub>L</sub> = 80 mA) R type (I <sub>L</sub> = 250 mA)	
		Typical		0.8 mA	0.9 mA		
	LED dropout voltage	Typical	V <sub>F</sub>	1.35 V (1.14 V at I <sub>F</sub> = 5 mA)		C type (I <sub>F</sub> = 50 mA) R type (I <sub>F</sub> = 50 mA)	
		Maximum		1.5 V			
Output	On resistance	Typical	R <sub>ton</sub>	0.75Ω	9.5Ω	C type (I <sub>F</sub> = 5 mA, I <sub>L</sub> = 80 mA Within 1 s on time) R type (I <sub>F</sub> = 5 mA, I <sub>L</sub> = 250 mA Within 1 s on time)	
		Maximum		1.25Ω	12.5Ω		
	Output capacitance	Typical	C <sub>out</sub>	12.5 pF	1.0 pF	I <sub>F</sub> = 0 mA V <sub>B</sub> = 0 V f = 1 MHz	
		Maximum		18 pF	1.5 pF		
	Off state leakage current	Typical	I <sub>Leak</sub>	0.02 nA	0.01 nA	C type (I <sub>F</sub> = 0 mA, V <sub>L</sub> = Max.) R type (I <sub>F</sub> = 0 mA, V <sub>L</sub> = Max.)	
		Maximum		10 nA			
Transfer characteristics	Switching speed	Turn on time*1	T <sub>on</sub>	Typical	0.10 ms	0.02 ms	C type (I <sub>F</sub> = 5 mA, V <sub>L</sub> = 10 V R <sub>L</sub> = 125Ω) R type (I <sub>F</sub> = 5 mA, V <sub>L</sub> = 10 V R <sub>L</sub> = 40Ω)
				Maximum	0.5ms		
		Turn off time*1	T <sub>off</sub>	Typical	0.08 ms	0.02 ms	C type (I <sub>F</sub> = 5 mA, V <sub>L</sub> = 10 V R <sub>L</sub> = 125Ω) R type (I <sub>F</sub> = 5 mA, V <sub>L</sub> = 10 V R <sub>L</sub> = 40Ω)
				Maximum	0.2 ms		
	I/O capacitance	Typical	C <sub>iso</sub>	0.8 pF		C type (f = 1 MHz, V <sub>B</sub> = 0 V) R type (f = 1 MHz, V <sub>B</sub> = 0 V)	
		Maximum		1.5 pF			
	Initial I/O isolation resistance	Minimum	R <sub>iso</sub>	1,000MΩ		500V DC	

Notes: 1. Variation possible through combinations of output capacitance and ON resistance.  
2. Recommendable LED forward current I<sub>F</sub> = 5 mA.

For type of connection.

\*1 Turn on/Turn off time



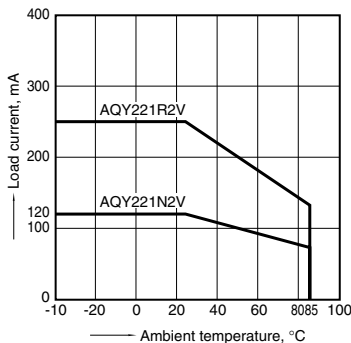
\*2 Low on resistance (R type)  
Low capacitance (C type)

- For Dimensions.
- For Schematic and Wiring Diagrams.
- For Cautions for Use.

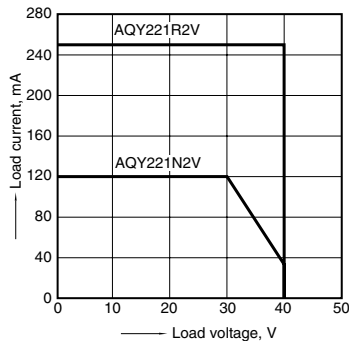
## REFERENCE DATA

1. Load current vs. ambient temperature characteristics

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



2. Load current vs. Load voltage characteristics  
Ambient temperature: 25°C 77°F



3. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4  
LED current: 5 mA; Load voltage: Max. (DC);  
Load current: 250mA (DC) R type, 80mA (DC) C type

