

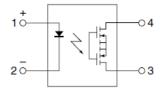
New Product Introduction

June 27, 2011

AQY221R2T:

New VSSOP PhotoMOS® Relays with Smallest Footprint Available

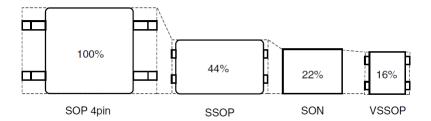




mm inch

1. Features:

4.6 mm² mounting area. Smallest in our line-up.
 29% mounting area reduction from SON type, which contributes to device miniaturization and higher density mounting.



- Low on resistance and low on output capacitance available at CxR10.
 - Output capacitance (Cout): 14 pF (typical)
 - On resistance (Ron): 0.8Ω (typical)

2. Applications:

- **Measuring and testing equipment** IC tester, Probe card, Board tester and other testing equipment
- Telecommunication equipment
- 3. Release Schedule: June 2011

4. Ordering Information:

TYPES

	Туре		Output rating*1		Part No. (Tape and reel packing style)*2		Packing quantity in
			Load voltage	Load current	Picked from the 1 and 4-pin side	Picked from the 2 and 3-pin side	the tape and reel
	AC/DC type	Low on resistance (R type)	40 V	250 mA	AQY221R2TY	AQY221R2TW	1,000 pcs.

5. Technical Information: Please refer to attached datasheet for details.

RATING

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

Item		Symbol	AQY221R2T	Remarks
	LED forward current	l _F	50 mA	
Innut side	LED reverse voltage	V R	5 V	
Input side	Peak forward current	FP	1 A	f = 100 Hz, Duty factor = 0.1%
	Power dissipation	Pin	75 mW	
	Load voltage (peak AC)	VL	40 V	
Output side	Continuous load current	l.	0.25 A	Peak AC, DC
Output side	Peak load current	Ipeak	0.75 A	100 ms (1shot), VL = DC
	Power dissipation	Pout	250 mW	
Total power dissipation		Pt	300 mW	
I/O isolation voltage		Viso	200 V AC	
Operating temperature		Topr	-40°C to +85°C -40°F to +185°F	Non-condensing at low temperatures
Storage temperature		Tstg	-40°C to +100°C -40°F to +212°F	

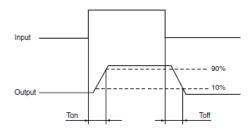
2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			AQY221R2T	Condition
LED operate current	Typical	Fon	0.5 mA	IL = Max.
	Maximum		3 mA	IL = IVIAX.
LED turn off current	Minimum	Foff	0.1 mA	IL = Max.
	Typical		0.4 mA	IL = IVIAX.
LED dropout voltage	Typical	VF	1.14 V	I _F = 5 mA
	Maximum		1.5 V	IF = 5 IIIA
On resistance	Typical	Ron	0.8 Ω	IF = 5 mA, IL = Max.
	Maximum		1.25 Ω	IF = 5 IIIA, IL = Max.
Output capacitance	Typical	Cout	14 pF	IF = 0 mA, f = 1 MHz, V _B = 0 V
	Maximum		18 pF	IF = 0 IIIA, I = 1 IVIAZ, VB = 0 V
Off state leakage current	Typical	Leak	0.02 nA	IF = 0 mA, VL = Max.
	Maximum		10 nA	
Turn on time*	Typical	Ton	0.1 ms	I _F = 5 mA, V _L = 10 V, R _L = 40 Ω
	Maximum		0.5 ms	IF = 5 IIIA, VL = 10 V, AL = 40 12
Turn off time*	Typical	Toff	0.06 ms	I _F = 5 mA, V _L = 10 V, R _L = 40 Ω
	Maximum		0.2 ms	IF = 5 IIIA, VL = 10 V, RL = 40 12
I/O capacitance	Typical	Ciso	0.4 pF	f = 1 MHz, V _B = 0 V
	Maximum		1.5 pF	1 = 1 MHz, VB = 0 V
	LED operate current LED turn off current LED dropout voltage On resistance Output capacitance Off state leakage current Turn on time* Turn off time*	LED operate current Typical Maximum LED turn off current Minimum Typical Minimum Typical Maximum LED dropout voltage Maximum Typical Maximum On resistance Maximum Typical Maximum Output capacitance Maximum Typical Maximum Turn on time* Typical Maximum Turn off time* Typical Maximum I/O capacitance Typical Maximum Typical Typical Maximum Typical Typical Maximum Typical Typical Typical Maximum Typical Typical Maximum Typical Maximum	LED operate current Typical Maximum IFon LED turn off current Minimum Typical IFoff LED dropout voltage Typical Maximum VF On resistance Typical Maximum Ron Output capacitance Typical Maximum Cout Off state leakage current Typical Maximum ILeak Turn on time* Typical Maximum Ton Turn off time* Typical Maximum Toff I/O capacitance Typical Cites Cites	Typical Maximum IFon 0.5 mA 3 mA LED turn off current Minimum Typical 1.5 v 0.4 mA LED dropout voltage Typical Maximum 1.5 v 1.14 v On resistance Typical Maximum 1.25 Ω 1.4 pF Output capacitance Typical Maximum 1.25 Ω 1.4 pF Off state leakage current Typical Maximum 1.2 pF Off state leakage current Typical Maximum 1.2 m 1.0 nA Turn on time* Typical Maximum Ton 0.5 ms Turn off time* Typical Maximum Ton 0.2 ms Output capacitance Typical Maximum Ton 0.5 ms Output capacitance Typical Maximum Ton 0.2 ms Output capacitance Typical

Note: Please refer to the "Schematic and Wiring Diagrams" for connection method.

Notes: *1 Indicate the peak AC and DC values.
*2 Only tape and reel package is available.
For space reasons, only "1R2" is marked on the product as the part number.

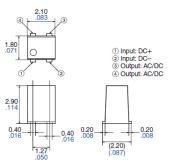
*Turn on/Turn off time



DIMENSIONS (mm inch)

External dimensions





General tolerance: ±0.1 ±.004

Recommended mounting pad (Top view)



Tolerance: ±0.1 ±.004

SCHEMATIC AND WIRING DIAGRAMS

E1: Power source at input side, IF: LED forward current, VL: Load voltage, IL: Load current

Schematic	Output configuration	Load	Connection	Wiring diagram	
10 4	1 Form A	AC/DC	_	E ₁ V _L (AC,DC)	

Any questions, please contact your local Panasonic Electric Works Sales representatives.

Ref#: M-402