

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

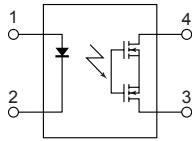
Panasonic
ideas for life

**Lower output capacitance and on resistance. (C × R20)
High speed switching.
(Turn on time: 0.04ms,
Turn off time: 0.06ms).**

**RF PhotoMOS
(AQY221N1S)**



mm inch



FEATURES

1. Low output capacitance between output terminals and low ON-resistance

Output capacitance(C): 2.0pF (typ.)
ON resistance(R): 9.8Ω (typ.)

2. High speed switching

Turn on time: 40ms
Turn off time: 60ms

3. SO package 4-pin type in super miniature design

Size: (W)4.3 × (L)4.4 × (H)2.1 mm
(W).169 × (L).173 × (H).083 inch

4. Low-level off state leakage current

The SSR has an off state leakage current of several milliamperes, where as this PhotoMOS relay has typ. 10pA (typical) even with the rated load voltage

5. Controls low-level analog signals

6. Low thermal electromotive force (Approx. 1 mV)

TYPICAL APPLICATIONS

Measuring and testing equipment

1. Testing equipment for semiconductor performance
IC tester, Liquid crystal driver tester, semiconductor performance tester
2. Board tester
Bear board tester, In-circuit tester, function tester
3. Medical equipment
Ultrasonic wave diagnostic machine
4. Multi-point recorder (warping, thermo couple)

TYPES

Type	Output rating*		Tape and reel packing style		Packing quantity	
	Load voltage	Load current	Picked from the 1/2-pin side	Picked from the 3/4-pin side	Tube	Tape and reel
AC/DC type	40V	120mA	AQY221N1SX	AQY221N1SZ	1,000 pcs	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. suf x "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", 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	AQY221N1S	Remarks
Input	LED forward current	I _F	50mA	
	LED reverse voltage	V _R	5V	
	Peak forward current	I _{FP}	1A	f=100 Hz, Duty factor=0.1%
	Power dissipation	P _{in}	75mW	
Output	Load voltage (peak AC)	V _L	40V	
	Continuous load current	I _L	0.12A	Peak AC,DC
	Peak load current	I _{peak}	0.30A	100 ms (1 shot), V _L = DC
	Power dissipation	P _{out}	300mW	
Total power dissipation		P _T	350mW	
I/O isolation voltage		V _{iso}	1,500V 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	

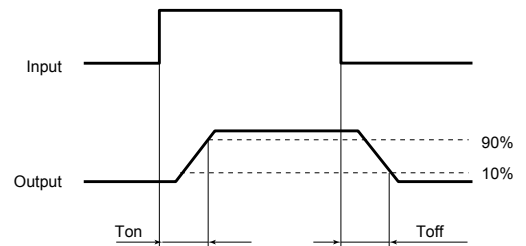
RF PhotoMOS (AQY221N1S)

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

Item		Symbol	AQY221N1S	Condition		
Input	LED operate current	Typical	0.9mA	$I_L=100\text{ mA}$		
		Maximum	3.0mA			
	LED turn off current	Minimum	0.4mA	$I_L=100\text{ mA}$		
		Typical	0.85mA			
LED dropout voltage	Typical	1.25V (1.14V at $I_F=5\text{mA}$)		$I_F=50\text{mA}$		
	Maximum	1.5V				
Output	On resistance #	Typical	9.8Ω	$I_F=5\text{mA}$ $I_L=100\text{ mA}$ Within 1 s on time		
		Maximum	12.5Ω			
	Output capacitance #	Typical	2.2pF	$I_F=0\text{mA}$ $V_B=0\text{V}$ $f=1\text{ MHz}$		
		Maximum	2.5pF			
Off state leakage current	Typical	0.01nA	$I_F=0\text{mA}$ $V_L=\text{Max.}$			
	Maximum	10nA				
Transfer characteristics	Switching speed	Turn on time*	Typical	0.04ms	$I_F=5\text{mA}$ $V_L=10\text{V}$ $R_L=100\Omega$	
			Maximum	0.5ms		
		Turn off time*	Typical	0.06ms		$I_F=5\text{mA}$ $V_L=10\text{V}$ $R_L=100\Omega$
			Maximum	0.2ms		
	I/O capacitance	Typical	0.8pF	$f=1\text{MHz}$ $V_B=0\text{V}$		
		Maximum	1.5pF			
Initial I/O isolation resistance	Minimum	R_{iso}	1,000MΩ	500V DC		

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

*Turn on/Turn off time

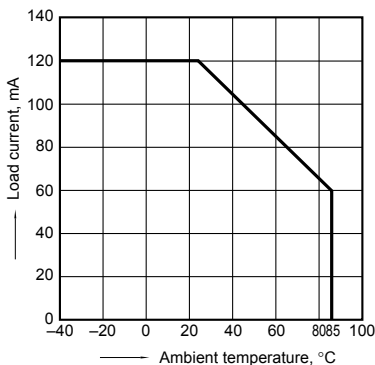


Other types of products than the C_{out} (typ. 2.0pF) and R_{on} (A connection typ. 9.8 ohm) combinations carried in this catalog are also available. (There is a trade-off between R_{on} and C_{out} both cannot be reduced at the same time.) For more information, please contact our sales of ce in y our area.

REFERENCE DATA

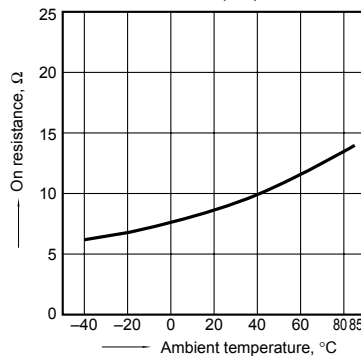
1. Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40°C to $+85^\circ\text{C}$
 -40°F to $+185^\circ\text{F}$



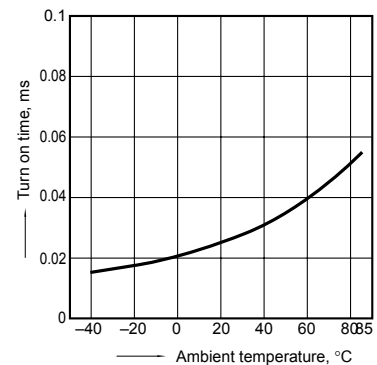
2. On resistance vs. ambient temperature characteristics

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



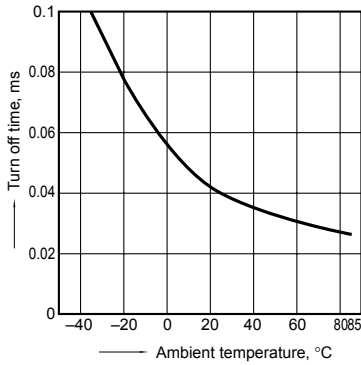
3. Turn on time vs. ambient temperature characteristics

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



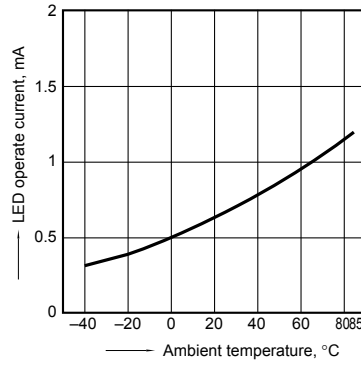
4. Turn off time vs. ambient temperature characteristics

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



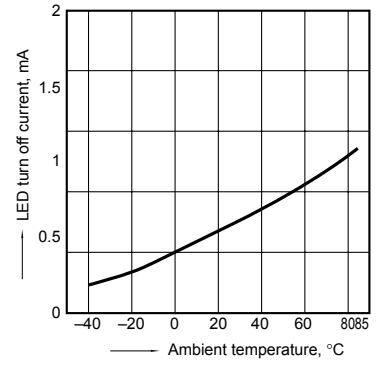
5. LED operate current vs. ambient temperature characteristics

Load voltage: Max. (DC); Continuous load current: Max. (DC)



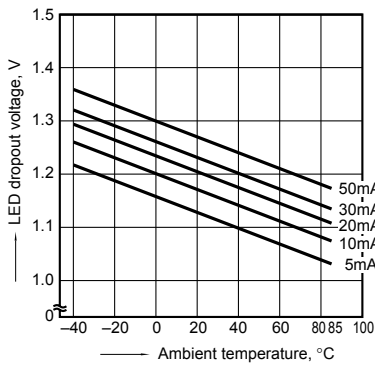
6. LED turn off current vs. ambient temperature characteristics

Load voltage: Max. (DC); Continuous load current: Max. (DC)



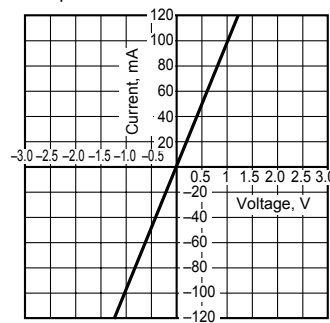
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



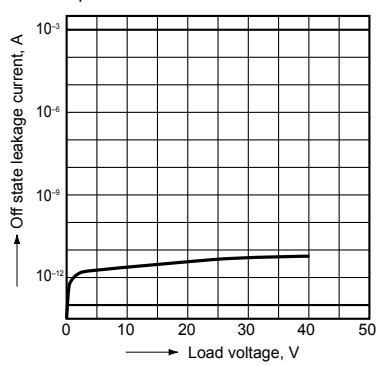
8. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



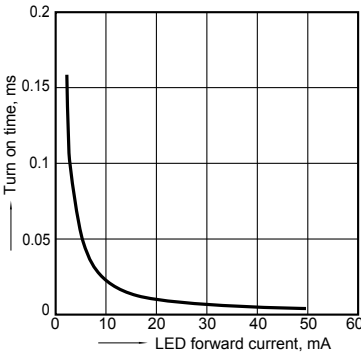
9. Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



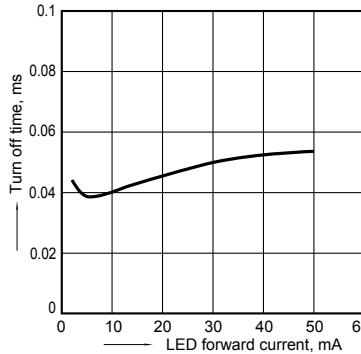
10. Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



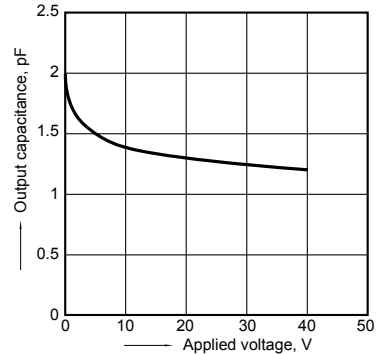
11. Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



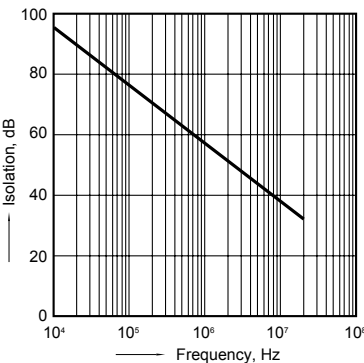
12. Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4
Frequency: 1 MHz, 30m Vrms;
Ambient temperature: 25°C 77°F



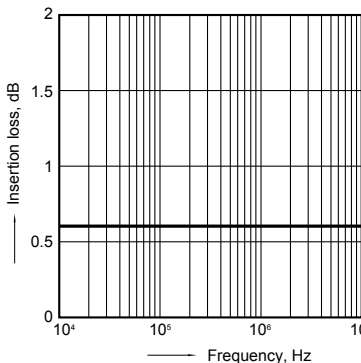
13. Isolation vs. frequency characteristics (50Ω impedance)

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



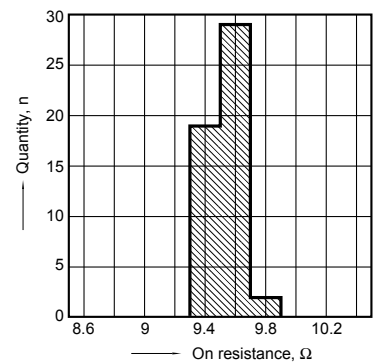
14. Insertion loss vs. frequency characteristics (50Ω impedance)

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



15. On resistance distribution

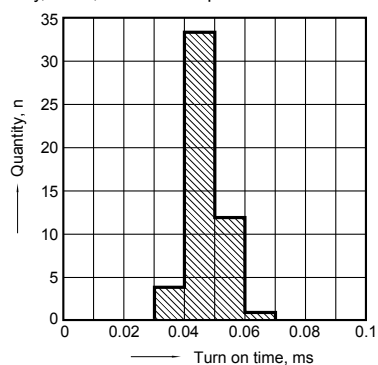
Measured portion: between terminals 3 and 4
Continuous load current: 120mA(DC)
Quantity, n=50; Ambient temperature: 25°C 77°F



RF PhotoMOS (AQY221N1S)

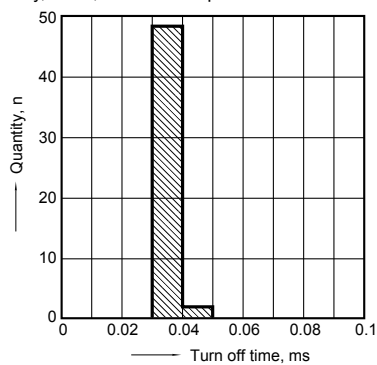
16. Turn on time distribution

Load voltage: 40V(DC)
Continuous load current: 120mA(DC)
Quantity, n=50; Ambient temperature: 25°C 77°F



17. Turn off time distribution

Load voltage: 40V(DC)
Continuous load current: 120mA(DC)
Quantity, n=50; Ambient temperature: 25°C 77°F



18. LED operate current distribution

Load voltage: 40V(DC)
Continuous load current: 120mA(DC)
Quantity, n=50; Ambient temperature: 25°C 77°F

