

Compliance with RoHS Directive

Super miniature SSOP Lower output capacitance and on resistance (C×R5) Load voltage 25V

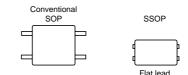
FEATURES

1. Reduced package size Lower surface has been reduced 60% and mounting space 40% compared to conventional SOP4-pin type.

2. Lower output capacitance and onresistance

Output capacitance (Cout): 1.0pF (typ.) ON resistance (Ron): 5.5Ω (typ.)

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



4. High speed switching Turn on time: 0.02ms (typ.) Turn off time: 0.02ms (typ.)

(AQY221N3V)

RF SSOP 1 Form A C×R5

TYPICAL APPLICATIONS

1. Measuring and testing equipment IC tester, Liquid crystal driver tester, Semiconductor performance tester, Board tester, etc.

2. Medical equipment

PhotoMOS Relays

- Ultrasonic wave diagnostic machine
- 3. Multi-point recorder
- Warping, Thermo couple, etc.
- 4. Telecommunication and
- broadcasting equipment

TYPES

	Output	rating*1 Deckage		Tape and reel packing style		Packing quantity	
	Load voltage	Load current	Package	Picked from the 1/4-pin side	Picked from the 2/3-pin side	in tape and reel*2	
AC/DC dual use	25 V	150 mA	SSOP	AQY221N3VY	AQY221N3VW	3,500 pcs.	

Notes: *1 Indicate the peak AC and DC values.

*2 Tape and reel is the standard packing style for SSOP. For space reasons, only "N3V" is marked on the product as the part number. The three initial letters of the part number "AQY", and the package (SSOP) indicator "V" and the packing style indicator "Y" or "W" are not marked on the relay.

RATING

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

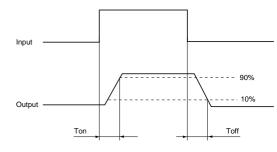
	Item	Symbol	AQY221N3V	Remarks
Input	LED forward current	lF	50mA	
	LED reverse voltage	Vr	5V	
	Peak forward current	IFP	1A	f=100 Hz, Duty factor=0.1%
	Power dissipation	Pin	75mW	
Output	Load voltage (peak AC)	VL	25V	
	Continuous load current	l.	0.15A	Peak AC, DC
	Peak load current	Ipeak	0.4A	100 ms (1 shot), V∟= DC
	Power dissipation	Pout	250mW	
Total power dissipation		PT	300mW	
I/O isolation vo	Itage	Viso	1,500V AC	
Temperature limits	Operating	Topr	-40°C to +85°C -40°F to +185°F	Non-condensing at low temperatures
	Storage	Tstg	-40°C to +100°C -40°F to +212°F	

RF SSOP 1 Form A C×R5 (AQY221N3V)

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

	ltem		Symbol	AQY221N3V	Condition
Input	LED operate current	Typical	Fon	1.0 mA	IL = 80 mA
		Maximum		3.0 mA	
	LED turn off current	Minimum	Foff	0.2 mA	I∟ = 80 mA
		Typical		0.9 mA	
		Typical	VF	1.35 V (1.14 V at I⊧ = 5 mA)	I⊧ = 50 mA
	LED dropout voltage	Maximum		1.5 V	
Output Output capacitance	On resistance	Typical	Ron	5.5Ω	I⊧ = 5 mA, I∟ = 80 mA Within 1 s on time
		Maximum		7.5Ω	
	Output capacitance	Typical	Cout	1.0 pF	IF = 0 mA, VB = 0 V
		Maximum		1.5 pF	f = 1 MHz
	Off state looks as surrant	Typical		0.01 nA	IF = 0 mA
	Maximum	Leak	10 nA	V∟ = Max.	
Transfer characteristics	Turn on time*	Typical	Ton	0.02 ms	I⊧ = 5 mA, V∟ = 10 V
		Maximum		0.2 ms	R∟ = 125Ω
	Turn off time*	Typical	- T _{off}	0.02 ms	I⊧ = 5 mA, V∟ = 10 V
		Maximum		0.2 ms	R∟ = 125Ω
	1/O senseitenes	Typical	Ciso	0.8 pF	f = 1 MHz
	I/O capacitance	Maximum		1.5 pF	V _B = 0 V
	Initial I/O isolation resistance	Minimum	Riso	1,000ΜΩ	500V DC

Note: Variation possible through combinations of output capacitance and on resistance. For more information, please contact our sales office in your area. *Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

Please obey the following conditions to ensure proper relay operation and resetting.

Item	Symbol	Recommended value	Unit
Input LED current	lF	5	mA

For Dimensions For Schematic and Wiring Diagrams

■ For Cautions for Use

■ These products are not designed for automotive use.

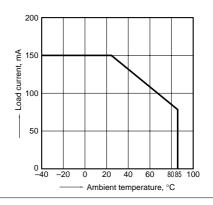
-40°F to +185°F

If you are considering to use these products for automotive applications, please contact your local Panasonic Electric Works technical representative.

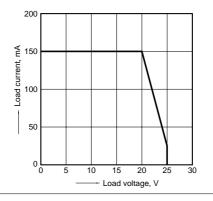
For more information

REFERENCE DATA

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

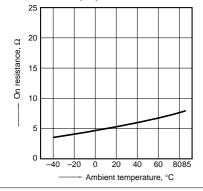


2. Load current vs. Load voltage characteristics Ambient temperature: 25°C $77^\circ {\rm F}$



3. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4 LED current: 5 mA; Load voltage: 10V (DC); Load current: 80mA (DC)

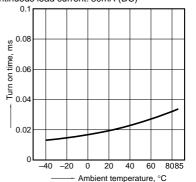


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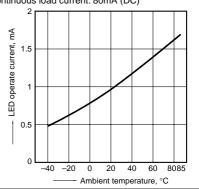
4. Turn on time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4 LED current: 5 mA; Load voltage: 10V (DC); Continuous load current: 80mA (DC)



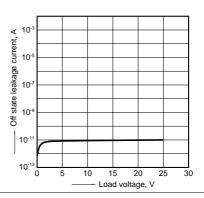
7. LED turn off current vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4 Load voltage: 10V (DC); Continuous load current: 80mA (DC)



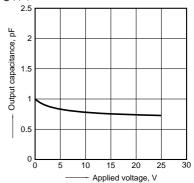
10. Off state leakage current vs. load voltage characteristics

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



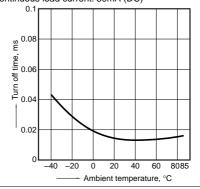
13. Output capacitance vs. applied voltage characteristics

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

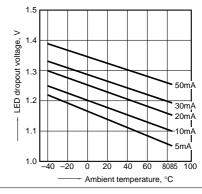


5. Turn off time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4 LED current: 5 mA; Load voltage: 10V (DC); Continuous load current: 80mA (DC)

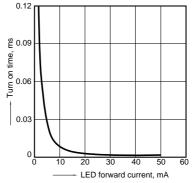


8. LED dropout voltage vs. ambient temperature characteristics LED current: 5 to 50 mA



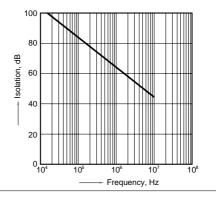
11. Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4 Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F

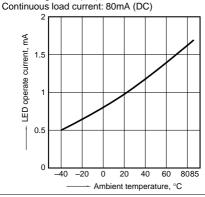


14. Isolation vs. frequency characteristics $(50\Omega \text{ impedance})$

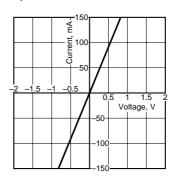
Measured portion: between terminals 3 and 4 Ambient temperature: 25°C 77°F



6. LED operate current vs. ambient temperature characteristics Measured portion: between terminals 3 and 4 Load voltage: 10V (DC);

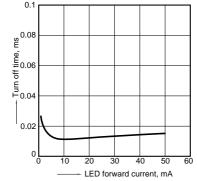


9. Current vs. voltage characteristics of output at MOS portion Measured portion: between terminals 3 and 4 Ambient temperature: 25°C 77°F



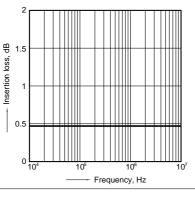
12. Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4 Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



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

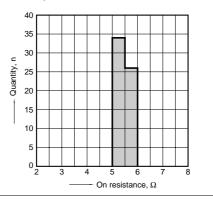
Measured portion: between terminals 3 and 4 Ambient temperature: 25°C 77°F



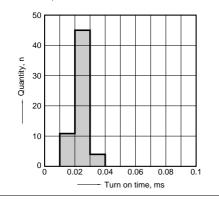
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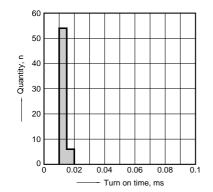
16. On resistance distribution Measured portion: between terminals 3 and 4 Continuous load current: 80mA (DC) Ambient temperature: 25°C 77°F



17. Turn on time distribution Load voltage: 10V (DC) Continuous load current: 80mA (DC) Ambient temperature: 25°C 77°F



18. Turn off time distribution Load voltage: 10V (DC) Continuous load current: 80mA (DC) Ambient temperature: 25°C 77°F



19. LED operate current distribution Load voltage: 10V (DC) Continuous load current: 80mA (DC) Ambient temperature: 25°C 77°F

