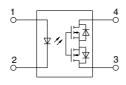
Panasonic

CXR3 type, VSSOP package, 20 V load voltage PhotoMOS® RFVSSOP 1 Form A C×R3 (AQY22000T)



mm inch



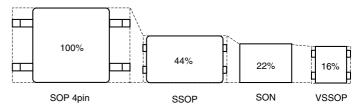
RoHS compliant

FEATURES

1. Miniature VSSOP package

4.6 mm² mounting area achieved. Approx. 29% less than previous product (SON type).

Contributes to the miniaturization of instruments and higher density mounting.



2. Load voltage: 20 V 3. Low C×R (C×R3)

Output capacitance: Typ. 1.1 pF, On resistance: Typ. 2.8Ω

TYPICAL APPLICATIONS

1. Measuring and testing equipment

IC tester, Probe card, Board tester and other testing equipment

2. Telecommunication equipment

*Does not support automotive applications.

TYPES

Туре	*1 Output rating		*2 Part No. (Tape an	Packing quantity in the	
	Load voltage	Load current	Picked from the 1 and 4-pin side	Picked from the 2 and 3-pin side	tape and reel
AC/DC dual use	20 V	180 mA	AQY221N5TY	AQY221N5TW	1,000 pcs.

-1-

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

For space reasons, only "1N5" is marked on the product as the part number.

^{*2.} Only tape and reel package is available.

RATING

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

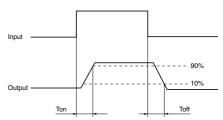
Item		Symbol	AQY221N5T	Remarks	
Input side	LED forward current	l _F	50 mA		
	LED reverse voltage	VR	5 V		
	Peak forward current	IFP	1 A	f = 100 Hz, Duty factor = 0.1%	
	Power dissipation	Pin	75 mW		
Output side	Load voltage (peak AC)	VL	20 V		
	Continuous load current	IL IL	0.18 A	Peak AC, DC	
	Power dissipation	Pout	250 mW		
Total power dissipation		PT	300 mW		
I/O isolation voltage		Viso	200 Vrms		
Ambient temperature	Operating	Topr	-40 to +85°C −40 to +185°F	(Non-icing at low temperatures)	
	Storage	T _{stg}	-40 to +100°C -40 to +212°F		

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

Item		Symbol	AQY221N5T	Condition		
Input	LED operate current	Typical	Fon	0.7 mA		
		Maximum		3 mA	 L = 80 mA	
	LED turn off current	Minimum	1	0.2 mA	IL = 00 IIIA	
		Typical	Foff	0.6 mA		
	LED dropout voltage	Typical	VF	1.14 V (1.35 V at I _F = 50 mA)	I _F = 5 mA	
		Maximum	VF	1.5 V		
Output	On resistance	Typical	1	2.8 Ω	I _F = 5 mA, I _L = 80 mA	
		Maximum	Ron	4.5 Ω	Within 1 s	
	Output capacitance	Typical		1.1 pF	- 0 m A f 1 MH = V = 0 V	
		Maximum	Cout	1.5 pF	$I_F = 0 \text{ mA}, f = 1 \text{ MHz}, V_B = 0 \text{ V}$	
	Off state leakage current	Typical		0.01 nA	IF = 0 mA, VL = Max.	
		Maximum	Leak	*10 nA		
Transfer characteristics	Turn on time**	Typical	Ton	0.02 ms	I _F = 5 mA, V _L = 10 V, R _L = 125 Ω	
		Maximum	Ion	0.2 ms		
	Turn off time**	Typical	Toff	0.01 ms		
		Maximum	I off	0.2 ms		
	I/O capacitance	Typical	Ciso	0.4 pF	f = 1 MHz, V _B = 0 V	
		Maximum	Ciso	1.5 pF		

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



3. Recommended operating conditions (Ambient temperature: 25°C 77°F)

Please use under recommended operating conditions to obtain expected characteristics.

lt	Symbol	Min.	Max.	Unit	
LED	current	lF	5	30	mA
AQY221N5T	Load voltage (Peak AC)	VL	_	10	V
AQ1221N31	Continuous load current	l _L		0.18	A

■ These products are not designed for automotive use.

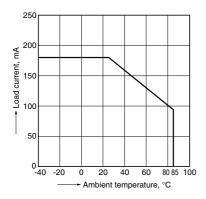
If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

^{*}Available as custom orders (1 nA or less)

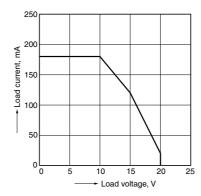
REFERENCE DATA

1. Load current vs. ambient temperature characteristics

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

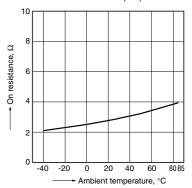


2. Load current vs. load voltage characteristics Ambient temperature: 25°C 77°F



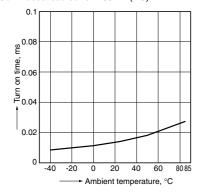
3. On resistance vs. ambient temperature characteristics

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



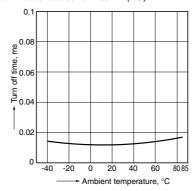
4. Turn on time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC); Continuous load current: 80mA (DC)



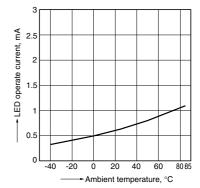
5. Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC); Continuous load current: 80mA (DC)



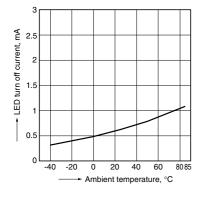
6. LED operate current vs. ambient temperature characteristics

Load voltage: 10V (DC); Continuous load current: 80mA (DC)

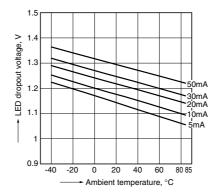


7. LED turn off current vs. ambient temperature characteristics

Load voltage: 10V (DC); Continuous load current: 80mA (DC)

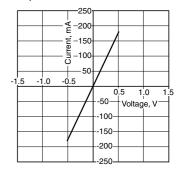


8. LED dropout voltage vs. ambient temperature characteristics LED current: 5 to 50 mA



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

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

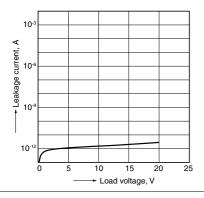


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RF VSSOP 1 Form A C×R3 (AQY22OOOT)

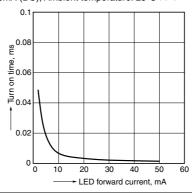
10. Off state leakage current vs. load voltage characteristics

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



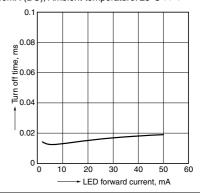
11. Turn on time vs. LED forward current characteristics

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



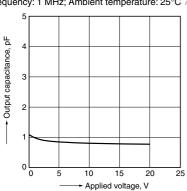
12. Turn off time vs. LED forward current characteristics

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



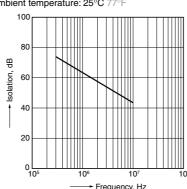
13. Output capacitance vs. applied voltage characteristics

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



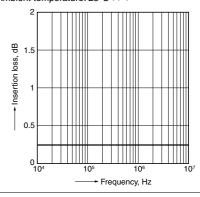
14. Isolation vs. frequency characteristics (50 Ω impedance)

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



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

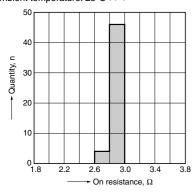
Measured portion: between terminals 3 and 4; Ambient temperature: 25°C 77°F



16. On resistance distribution

Measured portion: between terminals 3 and 4 LED current: 5 mA

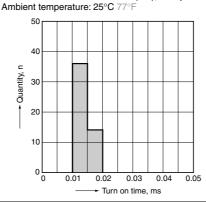
Continuous load current: 80 mA (DC), n: 50pcs. Ambient temperature: 25°C 77



17. Turn on time distribution

Load voltage: 10V (DC) LED current: 5 mA

Continuous load current: 80 mA (DC), n: 50pcs.



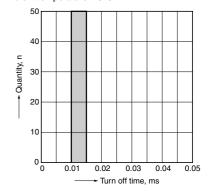
18. Turn off time distribution

Load voltage: 10V (DC)

LED current: 5 mA

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Continuous load current: 80 mA (DC), n: 50pcs. Ambient temperature: 25°C 77°F

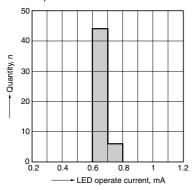


19. LED operate current distribution

Load voltage: 10V (DC)

Continuous load current: 80 mA (DC), n: 50pcs.

Ambient temperature: 25°C 77°I



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