

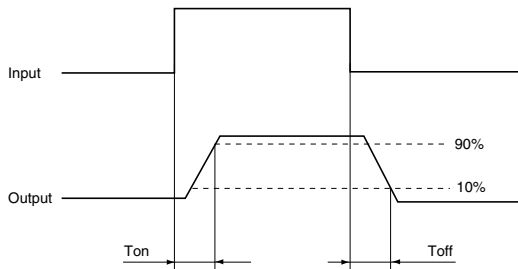
RF SOP 1 Form A C×R10 (AQY221○2S)

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

Item		Symbol	AQY221R2S (R type)	AQY221N2S (C type)	Condition
Input	LED operate current	Typical	0.5 mA	0.9 mA	$I_L = 250 \text{ mA}$ (R type) $I_L = 80 \text{ mA}$ (C type)
		Maximum	3.0 mA		
	LED turn off current	Minimum	0.1 mA	0.2 mA	$I_L = 250 \text{ mA}$ (R type) $I_L = 80 \text{ mA}$ (C type)
		Typical	0.4 mA	0.85 mA	
LED dropout voltage	Typical	1.25 V (1.14 V at $I_F = 5 \text{ mA}$)			$I_F = 50 \text{ mA}$
	Maximum	1.5 V			
Output	On resistance	Typical	0.8Ω	9.5Ω	$I_F = 5 \text{ mA}$ $I_L = 250 \text{ mA}$ (R type), $I_L = 80 \text{ mA}$ (C type) Within 1 s on time
		Maximum	1.25Ω	12.5Ω	
	Output capacitance	Typical	13 pF	1.0 pF	$I_F = 0 \text{ mA}$ $V_B = 0 \text{ V}$ $f = 1 \text{ MHz}$
		Maximum	18 pF	1.5 pF	
	Off state leakage current	Typical	0.03 nA	0.01 nA	$I_F = 0 \text{ mA}$ $V_L = \text{Max.}$
Maximum		10 nA (1 nA or less)*			
Transfer characteristics	Turn on time**	Typical	0.1 ms	0.03 ms	$I_F = 5 \text{ mA}$ $V_L = 10 \text{ V}$ $R_L = 40\Omega$ (R type), 125Ω (C type)
		Maximum	0.5ms		
	Turn off time**	Typical	0.06 ms	0.03 ms	$I_F = 5 \text{ mA}$ $V_L = 10 \text{ V}$ $R_L = 40\Omega$ (R type), 125Ω (C type)
		Maximum	0.2 ms		
	I/O capacitance	Typical	0.8 pF		$f = 1 \text{ MHz}$ $V_B = 0 \text{ V}$
Maximum		1.5 pF			
Initial I/O isolation resistance	Minimum	R_{iso}	1,000MΩ	500 V DC	

*Available as custom orders (1 nA or less)

**Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

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

Item	Symbol	Recommended value	Unit
Input LED current	I_F	5	mA

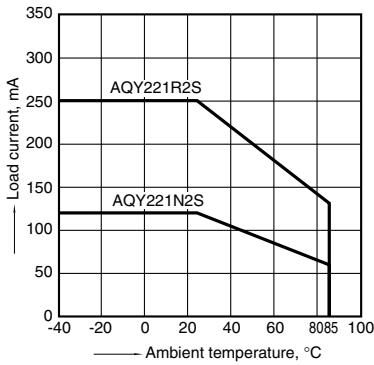
■ These products are not designed for automotive use.

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

REFERENCE DATA

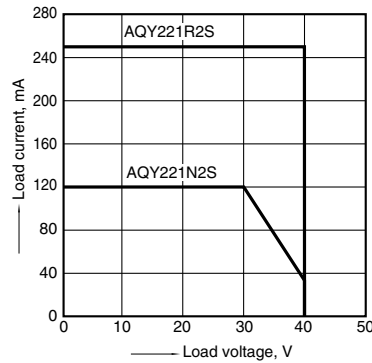
1. Load current vs. ambient temperature characteristics

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



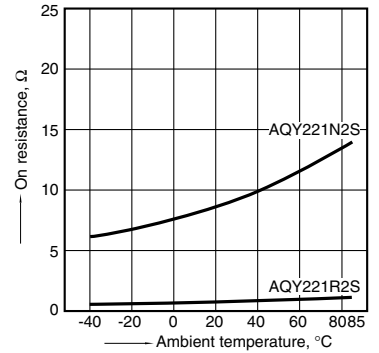
2. Load current vs. Load voltage characteristics

Ambient temperature: 25°C 77°F



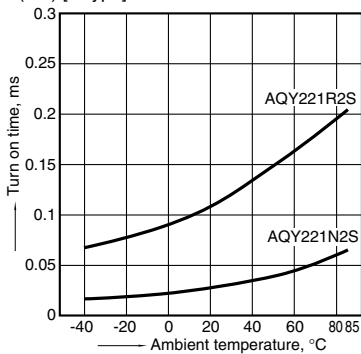
3. On resistance vs. ambient temperature characteristics

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]



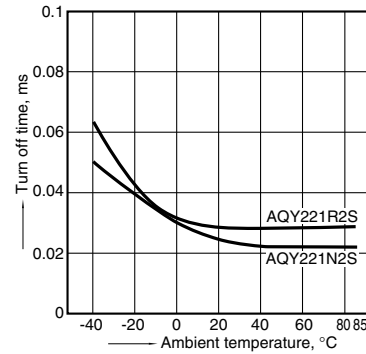
4. Turn on time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 250mA (DC) [R type],
80mA (DC) [C type]



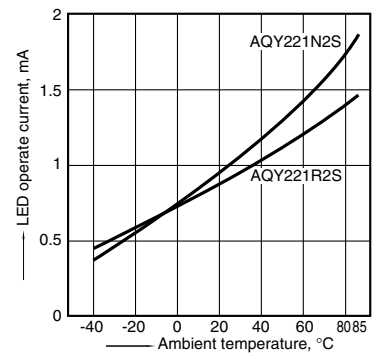
5. Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 250mA (DC) [R type],
80mA (DC) [C type]



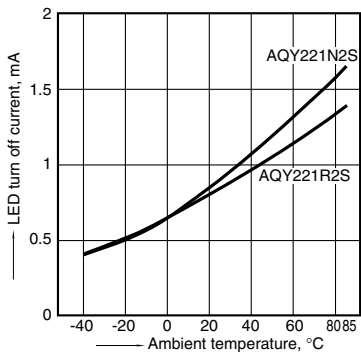
6. LED operate current vs. ambient temperature characteristics

Load voltage: Max. (DC);
Continuous load current: 250mA (DC) [R type],
80mA (DC) [C type]



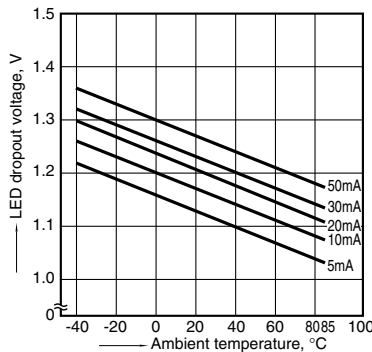
7. LED turn off current vs. ambient temperature characteristics

Load voltage: Max. (DC); Continuous load current:
250mA (DC) [R type], 80mA (DC) [C type];



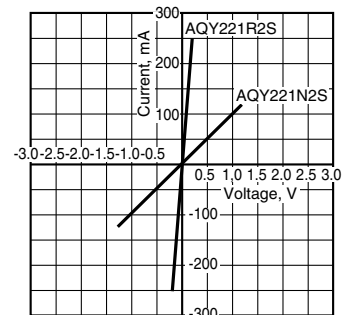
8. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



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

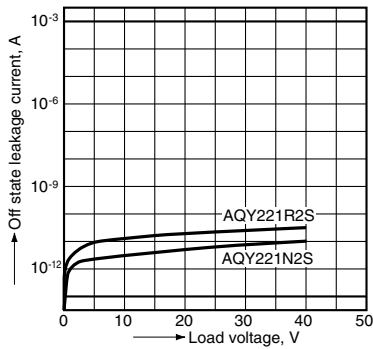
Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



RF SOP 1 Form A CxR10 (AQY221O2S)

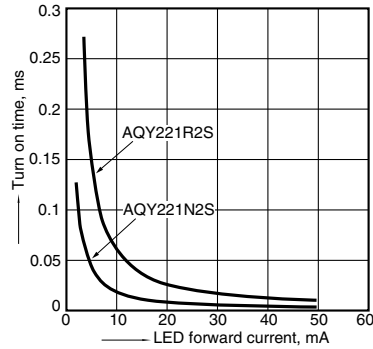
10. Off state leakage current vs. load voltage characteristics

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



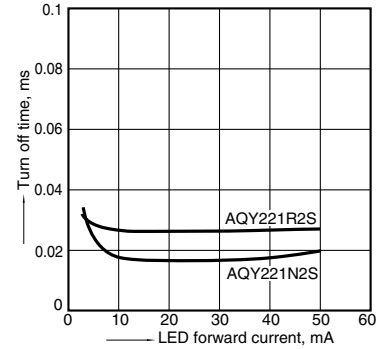
11. Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4
Load voltage: 10V (DC); Continuous load current: 250mA (DC) [R type], 80mA (DC) [C type];
Ambient temperature: 25°C 77°F



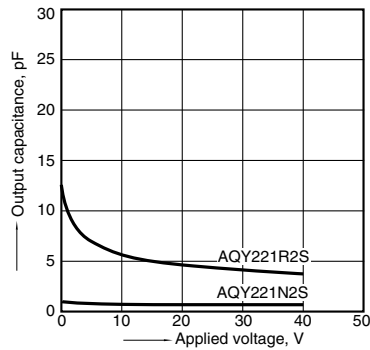
12. Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4
Load voltage: 10V (DC); Continuous load current: 250mA (DC) [R type], 80mA (DC) [C type];
Ambient temperature: 25°C 77°F



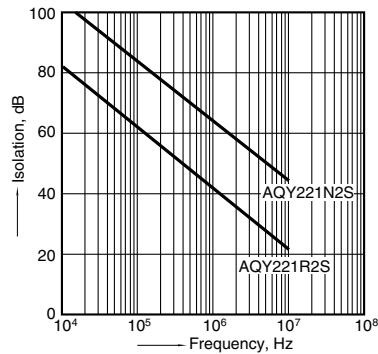
13. Output capacitance vs. applied voltage characteristics

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



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

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



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

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

