

RF SSOP 1 Form A C×R10/C×R5 (AQY221○○V)

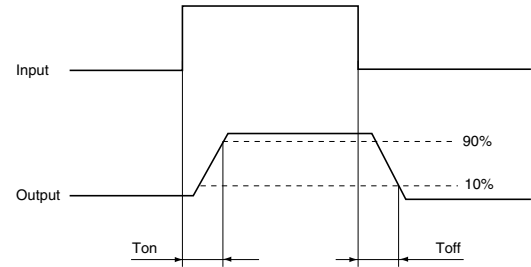
2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	C×R10 R type			C×R10 C type	C×R5	Condition	
				AQY221R6V	AQY221R4V	AQY221R2V	AQY221N2V	AQY221N3V		
Input	LED operate current	Typical	I _{Fon}	0.7 mA	0.9 mA		1.0 mA		AQY221R6V: I _L = 100 mA AQY221R4V: I _L = 500 mA AQY221R2V: I _L = 250 mA AQY221N2V: I _L = 80 mA AQY221N3V: I _L = 80 mA	
		Maximum		3.0 mA						
	LED turn off current	Minimum	I _{Foff}	0.1 mA			0.2 mA			
		Typical		0.6 mA	0.8 mA		0.9 mA			
	LED dropout voltage	Typical	V _F	1.35 V (1.14 V at I _F = 5 mA)						I _F = 50 mA
Maximum		1.5 V								
Output	On resistance	Typical	R _{On}	0.18Ω	0.55Ω	0.75Ω	9.5Ω	5.5Ω	AQY221R6V: I _F = 5 mA, I _L = 1000 mA AQY221R4V: I _F = 5 mA, I _L = 500 mA AQY221R2V: I _F = 5 mA, I _L = 250 mA AQY221N2V: I _F = 5 mA, I _L = 80 mA AQY221N3V: I _F = 5 mA, I _L = 80 mA Within 1 s on time	
		Maximum		0.35Ω	1Ω	1.25Ω	12.5Ω	7.5Ω		
	Output capacitance	Typical	C _{Out}	37.5 pF	24 pF	12.5 pF	1.0 pF		I _F = 0 mA, V _B = 0 V, f = 1 MHz	
		Maximum		100 pF	30 pF	18 pF	1.5 pF			
	Off state leakage current	Typical	I _{Leak}	—	0.02 nA		0.01 nA		I _F = 0 mA, V _L = Max.	
		Maximum		10 nA (1 nA or less)*						
Transfer character- istics	Turn on time**	Typical	T _{On}	0.2 ms	0.25 ms	0.10 ms	0.02 ms		AQY221R6V: I _F = 5 mA, V _L = 10 V, R _L = 100Ω AQY221R4V: I _F = 5 mA, V _L = 10 V, R _L = 20Ω AQY221R2V: I _F = 5 mA, V _L = 10 V, R _L = 40Ω AQY221N2V: I _F = 5 mA, V _L = 10 V, R _L = 125Ω AQY221N3V: I _F = 5 mA, V _L = 10 V, R _L = 125Ω	
		Maximum		0.5 ms	0.75 ms	0.5 ms		0.2 ms		
	Turn off time**	Typical	T _{Off}	0.07 ms	0.08 ms		0.02 ms			
		Maximum		0.2 ms	0.2 ms					
	I/O capacitance	Typical	C _{Iso}	0.8 pF						f = 1 MHz, V _B = 0 V
		Maximum		1.5 pF						
	Initial I/O isolation resistance	Minimum	R _{Iso}	1,000 MΩ						500 V DC

Notes: 1. Please refer to the “Schematic and Wiring Diagrams” for connection method.
2. Variation possible through combinations of output capacitance and on resistance. For more information, please contact our sales office in your area.

*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.

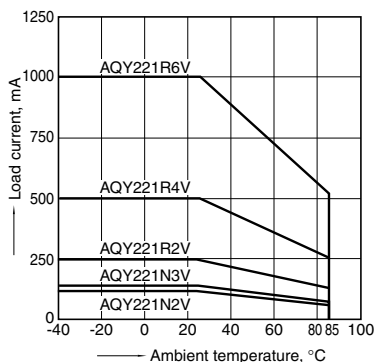
Item	Symbol	Recommended value	Unit
Input LED current	I _F	5	mA

■ 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

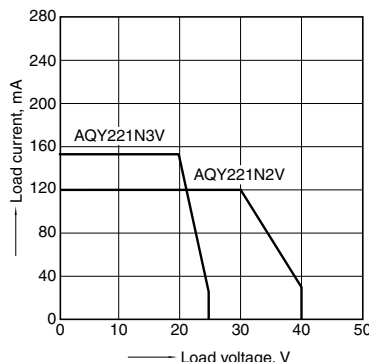
1. Load current vs. ambient temperature characteristics

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



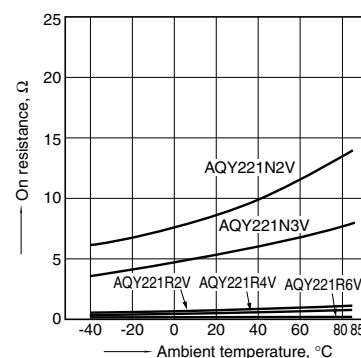
2. Load current vs. Load voltage characteristics

Ambient temperature: 25°C 77°F



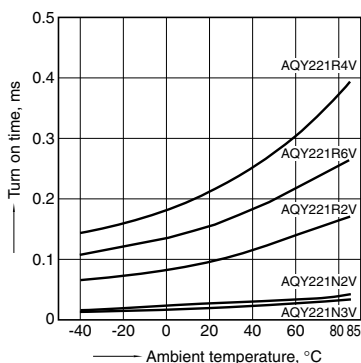
3. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
 LED current: 5 mA; Load voltage: 10V (DC)
 Continuous load current: 1000mA (DC) AQY221R6V,
 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V,
 80mA (DC) AQY221N2V, AQY221N3V



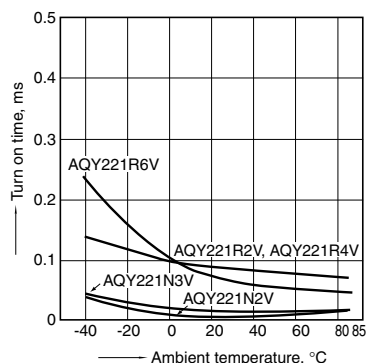
4. Turn on time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
 LED current: 5 mA; Load voltage: 10V (DC)
 Continuous load current: 100mA (DC) AQY221R6V,
 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V,
 80mA (DC) AQY221N2V, AQY221N3V



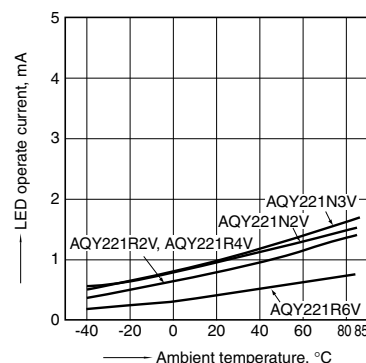
5. Turn off time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
 LED current: 5 mA; Load voltage: 10V (DC)
 Continuous load current: 100mA (DC) AQY221R6V,
 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V,
 80mA (DC) AQY221N2V, AQY221N3V



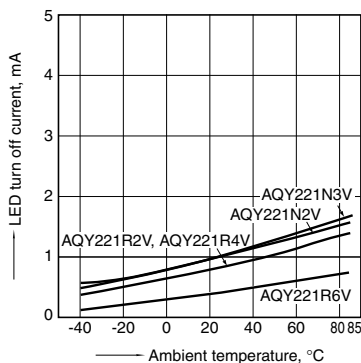
6. LED operate current vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
 Load voltage: 10V (DC)
 Continuous load current: 100mA (DC) AQY221R6V,
 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V,
 80mA (DC) AQY221N2V, AQY221N3V



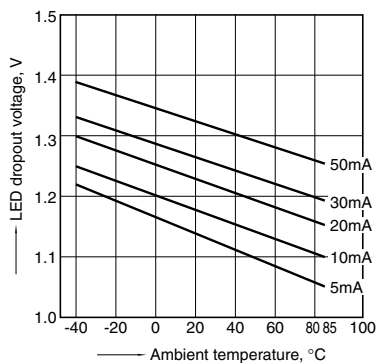
7. LED turn off current vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
 Load voltage: 10V (DC)
 Continuous load current: 100mA (DC) AQY221R6V,
 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V,
 80mA (DC) AQY221N2V, AQY221N3V



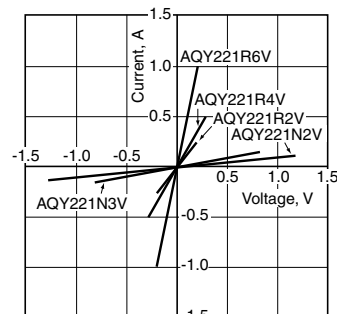
8. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA

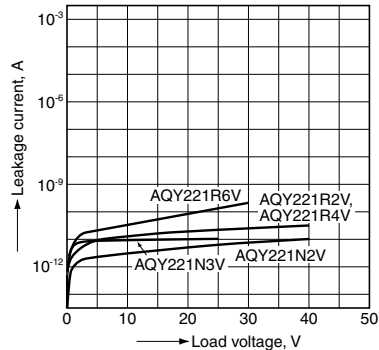


9. Current vs. voltage characteristics of output at MOS portion

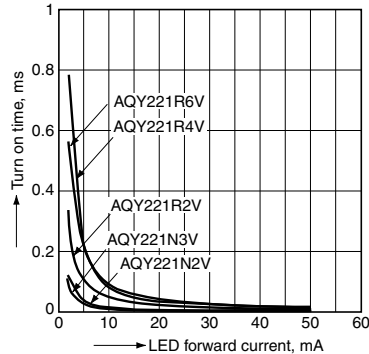
Measured portion: between terminals 3 and 4
 Ambient temperature: 25°C 77°F



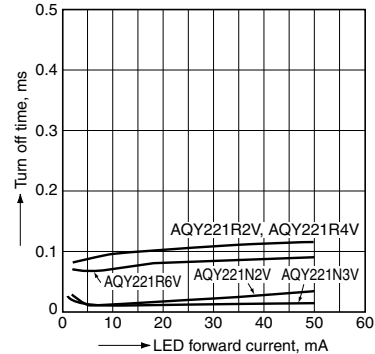
10. Off state leakage current vs. load voltage characteristics
Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



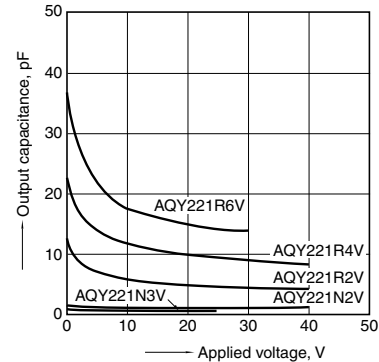
11. Turn on time vs. LED forward current characteristics
Measured portion: between terminals 3 and 4
Load voltage: 10V (DC)
Continuous load current: 100mA (DC) AQY221R6V, 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V, 80mA (DC) AQY221N2V, AQY221N3V
Ambient temperature: 25°C 77°F



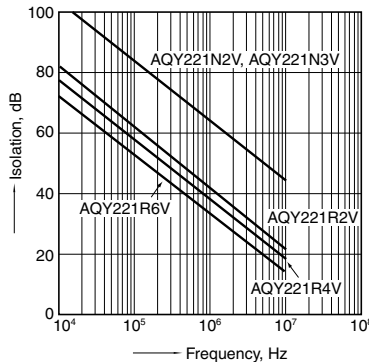
12. Turn off time vs. LED forward current characteristics
Measured portion: between terminals 3 and 4
Load voltage: 10V (DC)
Continuous load current: 100mA (DC) AQY221R6V, 500mA (DC) AQY221R4V, 250mA (DC) AQY221R2V, 80mA (DC) AQY221N2V, AQY221N3V
Ambient temperature: 25°C 77°F



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

