

RF SSOP C×R10 Voltage-sensitive (AQY221F○2V)

RATING

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

Item		Symbol	AQY221FR2V	AQY221FN2V	Remarks
Input	Input voltage	V _{IN}	6V		
	Input reverse voltage	V _{RIIN}	5V		
	Power dissipation	P _{in}	65mW		
Output	Load voltage (peak AC)	V _L	40V		
	Load current	I _L	0.25A	0.12A	Peak AC, DC
	Peak load current	I _{peak}	0.75A	0.2A	100ms (1shot), V _L =DC
	Power dissipation	P _{out}	250mW		
Total power dissipation		P _T	300mW		
I/O isolation voltage		V _{iso}	500Vrms		
Ambient temperature	Operating	T _{opr}	-40 to +85°C -40 to +185°F		(Non-icing at low temperatures)
	Storage	T _{stg}	-40 to +100°C -40 to +212°F		

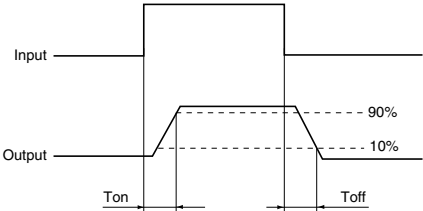
2. Electrical characteristics (Condition: ambient temperature 25°C 77°F)

Item			Symbol	AQY221FR2V	AQY221FN2V	Condition
Input	Operate voltage	Typ.	V _{Fon}	1.3V		AQY221FR2V: I _L = Max. AQY221FN2V: I _L = 80mA
		Max.		4V		
	Turn off voltage	Min.	V _{Foff}	0.8V		
		Typ.		1.3V		
	Input current	Typ.	I _{IN}	8.5mA		V _{IN} = 5V
Output	On resistance	Typ.	R _{on}	0.75Ω	9.5Ω	AQY221FR2V: V _{IN} = 5V, I _L = Max. AQY221FN2V: V _{IN} = 5V, I _L = 80mA Within 1 s
		Max.		1.25Ω	12.5Ω	
	Output capacitance	Typ.	C _{out}	12.5pF	1pF	V _{IN} = 0V, V _B = 0V, f = 1MHz
		Max.		18pF	1.5pF	
	Off state leakage current	Typ.	I _{Leak}	0.02nA	0.01nA	V _{IN} = 0V, V _L = Max.
		Max.		*10nA		
Transfer characteristics	Turn on time**	Typ.	T _{on}	0.05ms	0.01ms	AQY221FR2V: V _{IN} = 5V, V _L = 10V, R _L = 40Ω AQY221FN2V: V _{IN} = 5V, V _L = 10V, R _L = 125Ω
		Max.		0.5ms		
	Turn off time**	Typ.	T _{off}	0.06ms	0.03ms	
		Max.		0.2ms		
	I/O capacitance	Typ.	C _{iso}	0.8pF		f = 1MHz, V _B = 0V
		Max.		1.5pF		f = 1MHz, V _B = 0V
	Initial I/O isolation resistance	Min.	R _{iso}	1,000MΩ		500V DC

Note: If you wish to change the input voltage, rating or performance, please inquire with our sales.

*Available as custom orders (1 nA or less)

**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.

Item		Symbol	Min.	Max.	Unit
Input voltage		V _{IN}	4.5	5.5	V
AQY221FR2V	Load voltage (Peak AC)	V _L	—	15	V
	Continuous load current	I _L	—	0.25	A
AQY221FN2V	Load voltage (Peak AC)	V _L	—	15	V
	Continuous load current	I _L	—	0.12	A

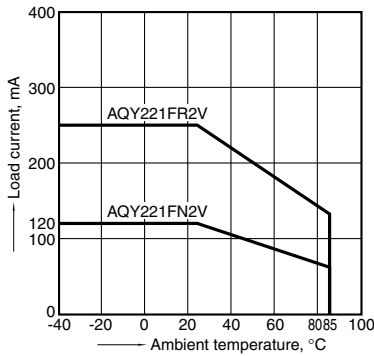
■ These products are not designed for automotive use.

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

REFERENCE DATA

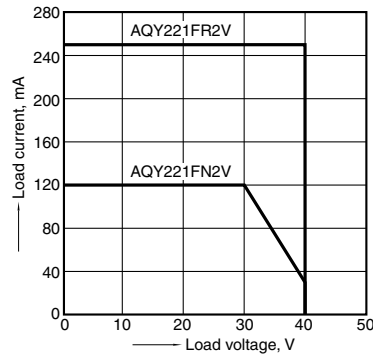
1. Load current vs. ambient temperature characteristics

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



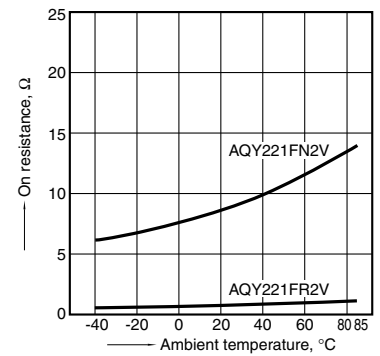
2. Load current vs. Load voltage characteristics

Ambient temperature: 25°C 77°F



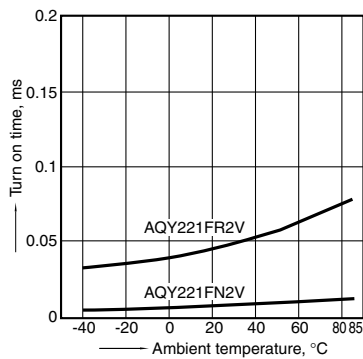
3. On resistance vs. ambient temperature characteristics

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



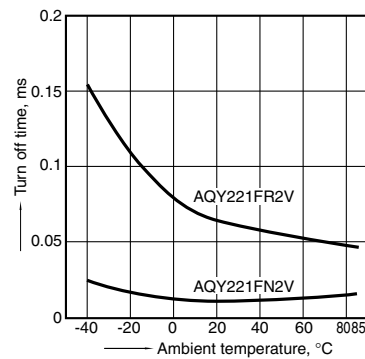
4. Turn on time vs. ambient temperature characteristics

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



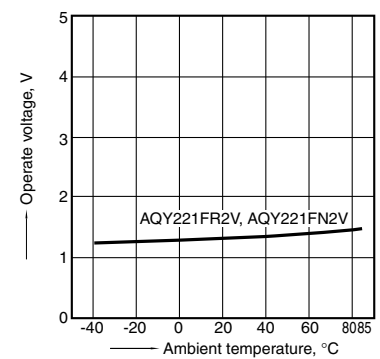
5. Turn off time vs. ambient temperature characteristics

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



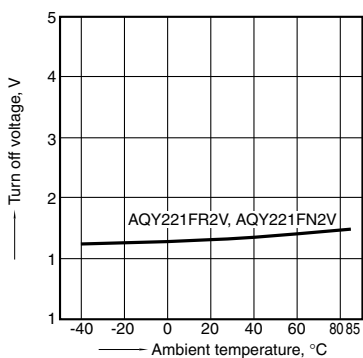
6. Operate voltage vs. ambient temperature characteristics

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



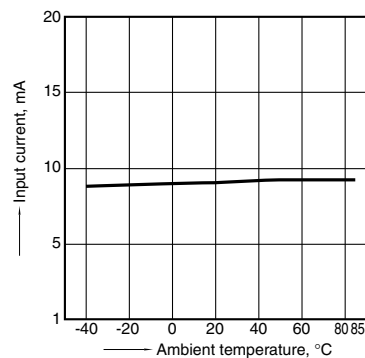
7. Turn off voltage vs. ambient temperature characteristics

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



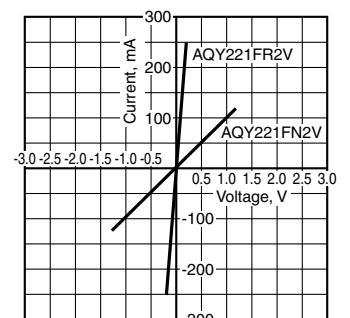
8. Input current vs. ambient temperature characteristics

Sample: All types
Input voltage: 5V



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

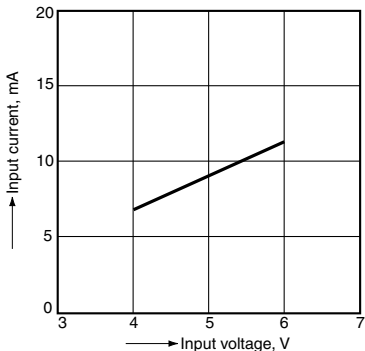
Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



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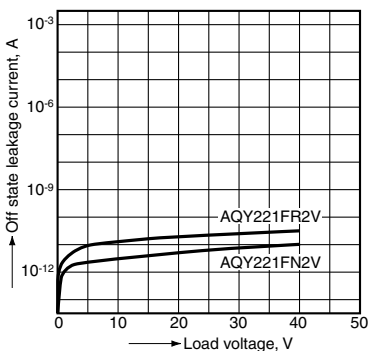
10. Input current vs. input voltage characteristics

Sample: All types
Ambient temperature: 25°C 77°F
(Recommended input voltage: 5±0.5V)



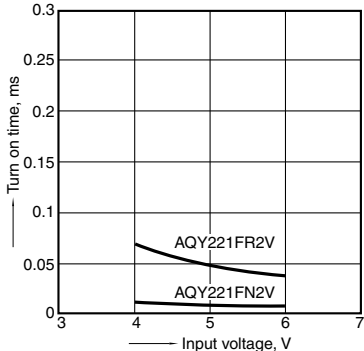
11. Off state leakage current vs. load voltage characteristics

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



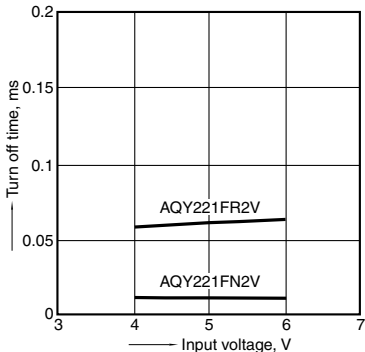
12. Turn on time vs. input voltage characteristics

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



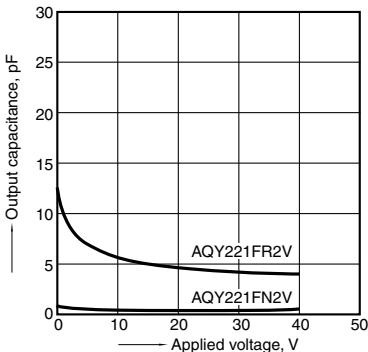
13. Turn off time vs. input voltage characteristics

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



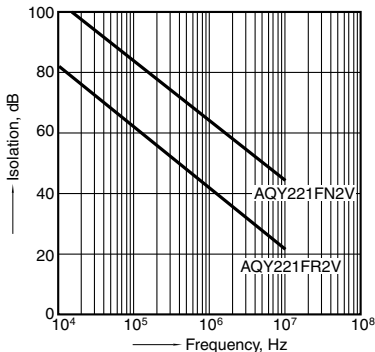
14. Output capacitance vs. applied voltage characteristics

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



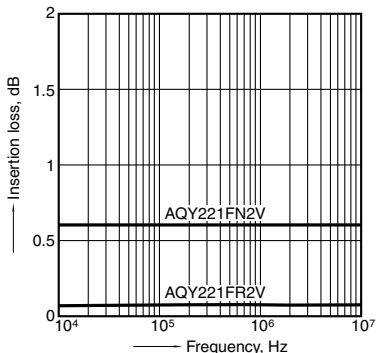
15. Isolation vs. frequency characteristics (50Ω impedance)

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



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

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



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Please contact

Panasonic Corporation

Electromechanical Control Business Division

■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

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ASCTB109E 201703-T

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