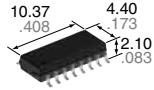
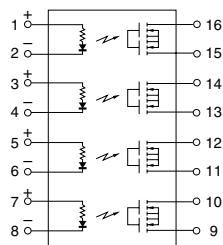


**Space-saving
4-channel type
with built-in input resistor**

**PhotoMOS®
RF SOP 4 Form A CxR10
Voltage-sensitive (AQS221FO2S)**



mm inch



RoHS compliant

FEATURES

1. Built-in input resistor means less man-hours when mounting

The voltage-sensitive type, which eliminates the need to mount an external input resistor, is now available in a small package. Man-hours spent mounting external input resistors are cut and board designing is simplified.

2. Saves space on PC board

Since the small package size remains the same while including a built-in input resistor, space on the PC board is saved. This makes it easier to incorporate space savings when designing miniature devices.

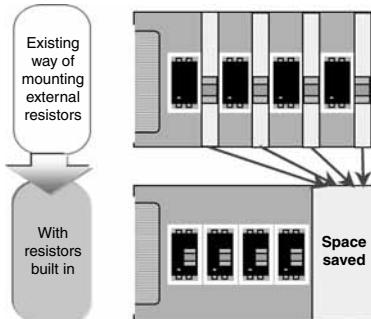
3. Both low on-resistance (R type) and low capacitance (C type) available at excellent electrical characteristics of CxR10

- R type: On resistance 0.8Ω (typ.) Output capacitance 14pF (typ.)
- C type: On resistance 9.5Ω (typ.) Output capacitance 1.1pF (typ.)

TYPICAL APPLICATIONS

For multi-circuit switching;

- Measuring and testing equipment Semiconductor testing equipment, Probe cards, Datalogger, Board tester and other testing equipment
- Telecommunication and broadcasting equipment
- Medical equipment



<Artistic impression of PC board space savings due to built-in resistor>
In case of SSOP.

TYPES

Type	Output rating*1		Package	Part No.*2			Packing quantity		
	Load voltage	Load current		Tube packing style	Tape and reel packing style		Tube	Tape and reel	
					Picked from the 1/2/3/4/5/6/7/8-pin side	Picked from the 9/10/11/12/13/14/15/16-pin side			
AC/DC dual use	Low on resistance (R type)	40 V	0.16A	SOP16-pin	AQS221FR2S	AQS221FR2SX	AQS221FR2SZ	1 tube contains: 50 pcs. 1 batch contains: 1,000 pcs.	
	Low capacitance (C type)	40 V	0.06A		AQS221FN2S	AQS221FN2SX	AQS221FN2SZ		

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

*2 The packing style indicator "X" or "Z" is not marked on the device.

RATING

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

Item	Symbol	AQS221FR2S	AQS221FN2S	Remarks
Input	Input voltage	V _{IN}	6V	
	Input reverse voltage	V _{RIN}	5V	
	Power dissipation	P _{in}	260mW	65mW for 1a
Output	Load voltage (peak AC)	V _L	40V	40V
	Load current	I _L	0.16A	0.06A
	Peak load current	I _{peak}	0.2A	0.12A
	Power dissipation	P _{out}	600mW	100ms (1shot), V _L =DC
Total power dissipation	P _T		650mW	
I/O isolation voltage	V _{iso}		500V AC	
Operating temperature	T _{opr}	-40°C to +85°C -40°F to +185°F		Non-condensing at low temperatures
Storage temperature	T _{stg}	-40°C to +100°C -40°F to +212°F		

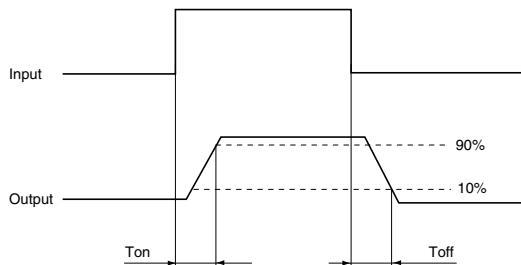
RF SOP 4 Form A CxR10 Voltage-sensitive (AQS221FO2S)

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

	Item	Symbol	AQS221FR2S	AQS221FN2S	Condition	
Input	Operate voltage	V _{Fon}	1.3V	4V	I _L = Max.	
			4V			
	Turn off voltage	V _{Foff}	0.8V	1.3V		
			1.3V			
Output	Input current	I _{IN}	8.5mA		V _{IN} = 5V	
	On resistance	R _{on}	0.75Ω	9.5Ω	V _{IN} = 5V I _L = Max. Within 1 s on time	
			1.25Ω	12.5Ω		
	Output capacitance	C _{out}	12.5pF	1pF	V _{IN} = 0V V _B = 0V f = 1MHz	
			18pF	1.5pF		
	Off state leakage current	I _{Leak}	0.02nA	0.01nA	V _{IN} = 0V V _L = Max.	
			10nA			
Transfer characteristics	Turn on time*	T _{on}	0.07ms	0.02ms	AQS221FR2S: V _{IN} = 5V, V _L = 10V, R _L = 80Ω	
			0.5ms			
	Turn off time*	T _{off}	0.07ms	0.02ms	AQS221FN2S: V _{IN} = 5V, V _L = 10V, R _L = 500Ω	
			0.2ms			
	I/O capacitance	C _{iso}	0.8pF		f = 1MHz, V _B = 0V	
			1.5pF		f = 1MHz, V _B = 0V	
	Initial I/O isolation resistance	R _{iso}	1,000MΩ		500V DC	

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

*Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

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

Item	Symbol	Minimum	Typical	Maximum	Unit
Input voltage	V _{IN}	4.5	5	5.5	V

■ For Dimensions.

■ For Schematic and Wiring Diagrams.

■ For Cautions for Use.

■ 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.

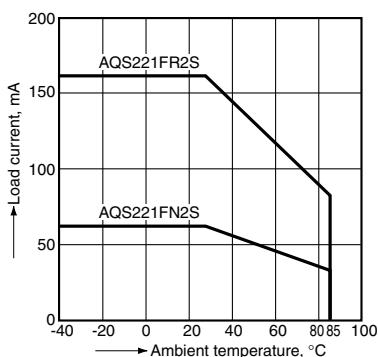
For more information.

RF SOP 4 Form A CxR10 Voltage-sensitive (AQS221FO2S)

REFERENCE DATA

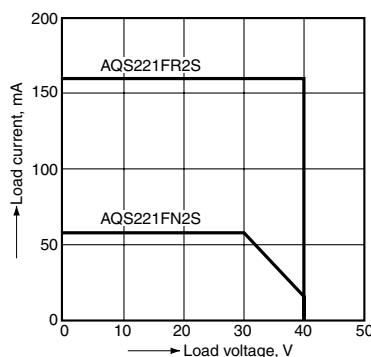
1. Load current vs. ambient temperature characteristics

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



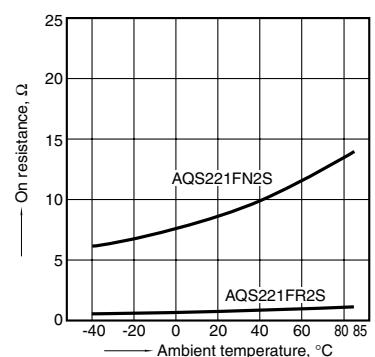
2. Load current vs. Load voltage characteristics

Ambient temperature: 25°C 77°F



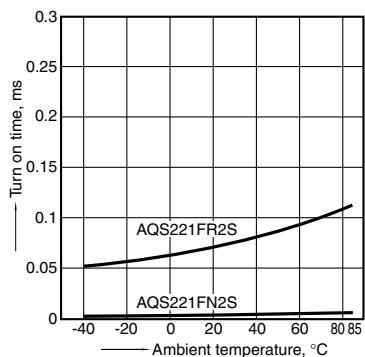
3. On resistance vs. ambient temperature characteristics

Input voltage: 5V; Load voltage: 10V (DC);
Continuous load current: 160mA (DC) R type,
60mA (DC) C type



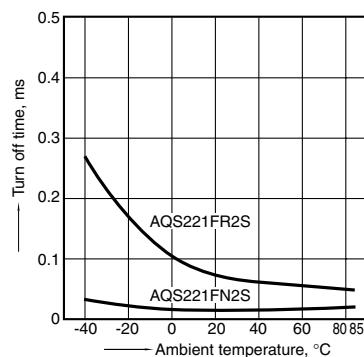
4. Turn on time vs. ambient temperature characteristics

Input voltage: 5V; Load voltage: 10V (DC);
Continuous load current: 125mA (DC) R type,
20mA (DC) C type



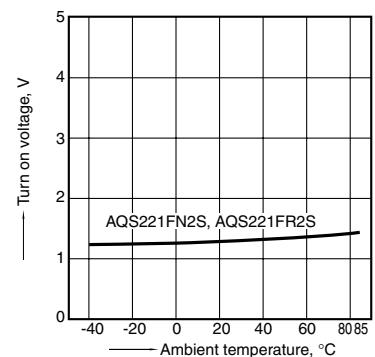
5. Turn off time vs. ambient temperature characteristics

Input voltage: 5V; Load voltage: 10V (DC);
Continuous load current: 125mA (DC) R type,
20mA (DC) C type



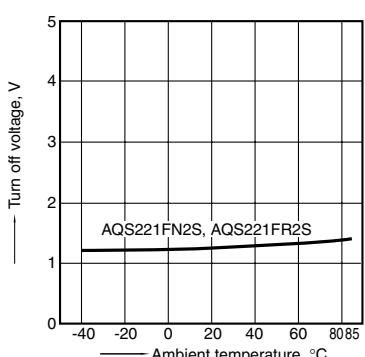
6. Turn on voltage vs. ambient temperature characteristics

Load voltage: 10V (DC);
Continuous load current: 160mA (DC) R type,
60mA (DC) C type



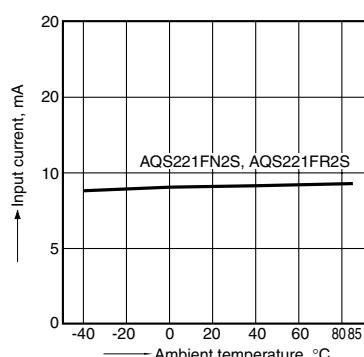
7. Turn off voltage vs. ambient temperature characteristics

Load voltage: 10V (DC);
Continuous load current: 160mA (DC) R type,
60mA (DC) C type



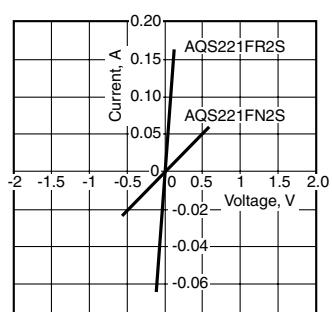
8. Input current vs. ambient temperature characteristics

Input voltage: 5V



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

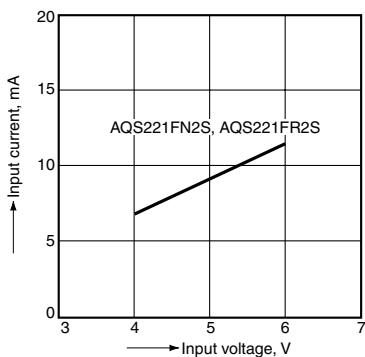
Ambient temperature: 25°C 77°F



RF SOP 4 Form A CxR10 Voltage-sensitive (AQS221FO2S)

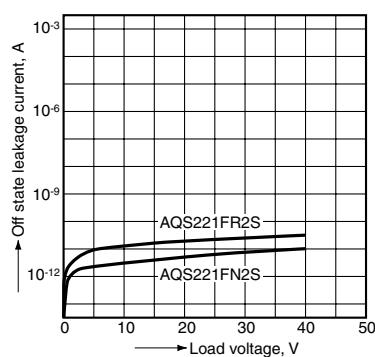
10. Input current vs. input voltage characteristics

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



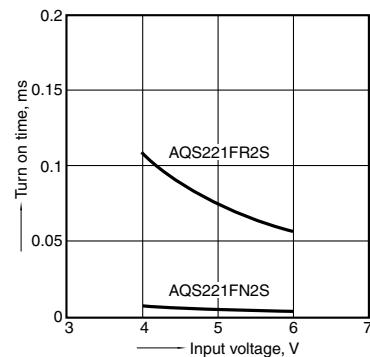
11. Off state leakage current vs. load voltage characteristics

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



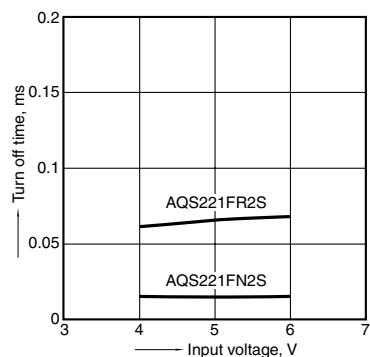
12. Turn on time vs. input voltage characteristics

Load voltage: 10V (DC);
Continuous load current: 125mA (DC) R type,
20mA (DC) C type; Ambient temperature: 25°C 77°F



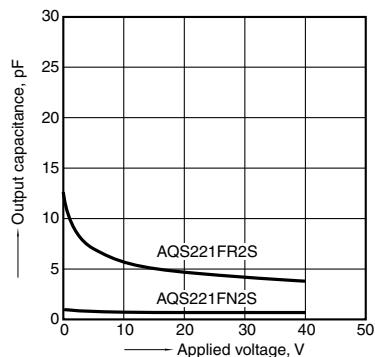
13. Turn off time vs. input voltage characteristics

Load voltage: 10V (DC);
Continuous load current: 125mA (DC) R type,
20mA (DC) C type; Ambient temperature: 25°C 77°F



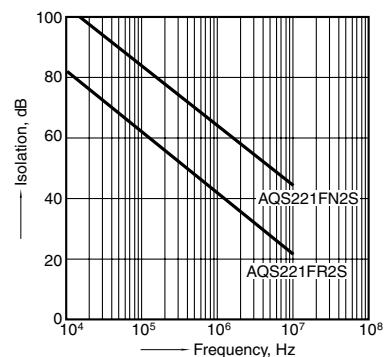
14. Output capacitance vs. applied voltage characteristics

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



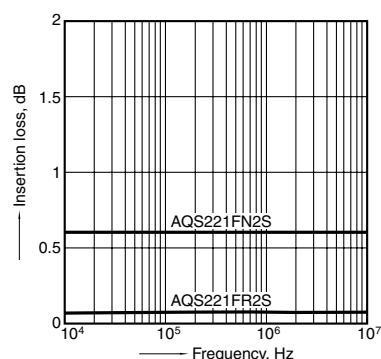
15. Isolation vs. frequency characteristics (50Ω impedance)

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



Mouser Electronics

Authorized Distributor

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Panasonic:

[AQS210TS](#) [AQS221FN2S](#) [AQS221FR2S](#) [AQS221FR2SZ](#) [AQS221FN2SZ](#) [AQS221FN2SX](#) [AQS221FR2SX](#)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Экспресс доставка в любую точку России;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помошь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.