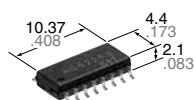
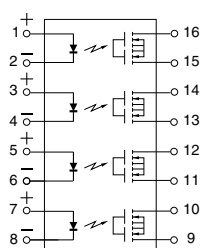


**Space-saving
SOP16-pin type
featuring low on-resistance
80V load voltage**

**PhotoMOS®
RF SOP 4 Form A C×R
(AQS225R2S)**



mm inch

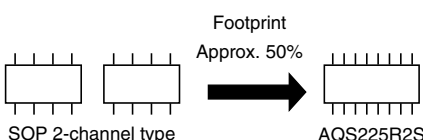


RoHS compliant

FEATURES

1. 4-channel (4 Form A) in a small SOP16-pin package

The device comes in a miniature SOP measuring (W) 10.37 × (L) 4.4 × (H) 2.1mm (W) .408 × (L) .173 × (H) .083inch— approx. 50% of the footprint size of 8-pin (2-channel) type.



2. Low C×R and high response speed

- Output capacitance: 4.5pF (typ.)
- On resistance: 10.5Ω (typ.)
- Turn on time: 0.04ms (typ.)

3. Applicable for 4 Form A use, as well as 4 independent 1 Form A

4. Low-level off state leakage current of typ. 0.01nA

5. Controls low-level analog signals

TYPICAL APPLICATIONS

For multi-circuit switching;

- 1. Measuring and testing equipment**
IC tester, Liquid crystal driver tester, Probe card, Bear board tester, In-circuit tester, Function tester, etc.
- 2. Communication and broadcasting equipment**
- 3. Medical equipment**
Ultrasonic wave diagnostic machine
- 4. Multi-point recorder**
Warping, Thermo couple

TYPES

	Output rating*		Package	Part No.			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	80V	70mA	SOP16-pin	AQS225R2S	AQS225R2SX	AQS225R2SZ	1 tube contains: 50 pcs. 1 batch contains: 1,000 pcs.	1,000 pcs.

* Indicate the peak AC and DC values.

Note: The packing style indicator "X" or "Z" is not marked on the device.

RATING

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

Item		Symbol	AQS225R2S	Remarks
Input	LED forward current	I _F	50 mA	
	LED reverse voltage	V _R	5 V	
	Peak forward current	I _{FP}	1 A	f = 100 Hz, Duty factor = 0.1%
	Power dissipation	P _{in}	75 mW	
Output	Load voltage (peak AC)	V _L	80 V	
	Continuous load current	I _L	0.07 A	Peak AC, DC
	Peak load current	I _{peak}	0.2 A	100 ms (1 shot), V _L = DC
	Power dissipation	P _{out}	600 mW	
Total power dissipation		P _T	650 mW	
I/O isolation voltage		V _{iso}	1,500 V AC	
Temperature limits	Operating	T _{opr}	-40°C to +85°C -40°F to +185°F	Non-condensing at low temperatures
	Storage	T _{stg}	-40°C to +100°C -40°F to +212°F	

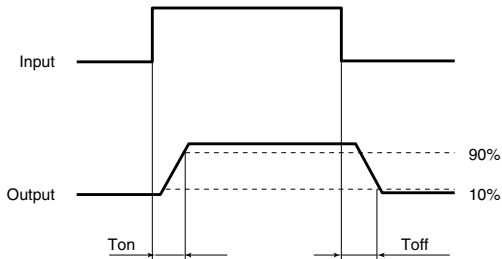
RF SOP 4 Form A C×R (AQS225R2S)

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

Item		Symbol	AQS225R2S	Condition
Input	LED operate current	Typical	0.9 mA	$I_L = \text{Max.}$
		Maximum	3 mA	
	LED turn off current	Minimum	0.3 mA	$I_L = \text{Max.}$
		Typical	0.85 mA	
LED dropout voltage	Typical	V_F	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	10.5Ω	$I_F = 5 \text{ mA}$ $I_L = \text{Max.}$ Within 1 s on time
		Maximum	15Ω	
	Output capacitance	Typical	4.5 pF	$I_F = 0$ $V_B = 0 \text{ V}$ $f = 1 \text{ MHz}$
		Maximum	6 pF	
Off state leakage current	Typical	I_{Leak}	0.01 nA	$I_F = 0$ $V_L = \text{Max.}$
	Maximum		10 nA (1 nA or less)*	
Transfer characteristics	Turn on time**	Typical	0.04 ms	$I_F = 5 \text{ mA}$ $I_L = \text{Max.}$
		Maximum	0.3 ms	
	Turn off time**	Typical	0.07 ms	$I_F = 5 \text{ mA}$ $I_L = \text{Max.}$
		Maximum	0.2 ms	
	I/O capacitance	Typical	0.8 pF	$f = 1 \text{ MHz}$ $V_B = 0$
		Maximum	1.5 pF	
Initial I/O isolation resistance	Minimum	R_{iso}	1,000 MΩ	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

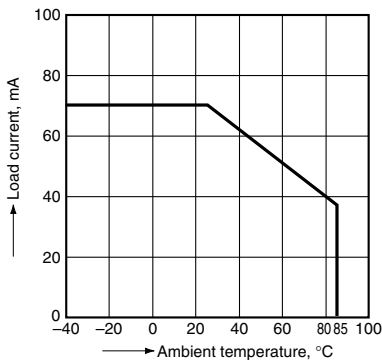
■ These products are not designed for automotive use.

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

REFERENCE DATA

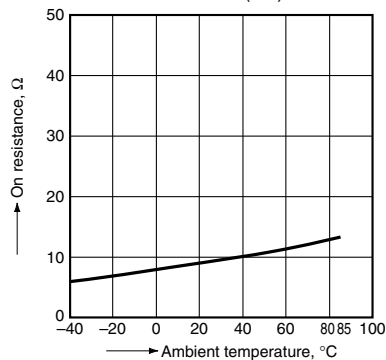
1. Load current vs. ambient temperature characteristics

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



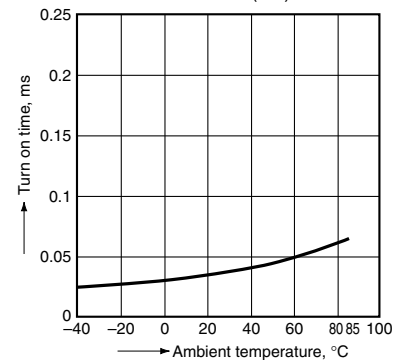
2. On resistance vs. ambient temperature characteristics

LED current: 5 mA;
Continuous load current: 70 mA (DC)

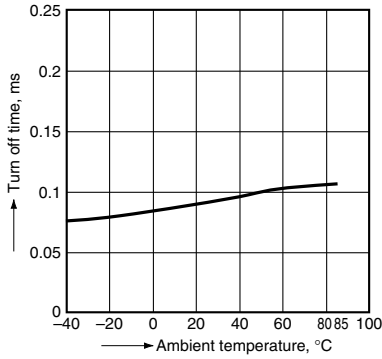


3. Turn on time vs. ambient temperature characteristics

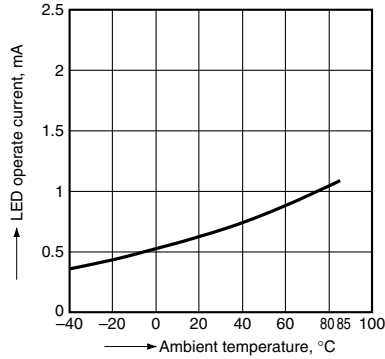
LED current: 5 mA; Load voltage: 80 V (DC);
Continuous load current: 70 mA (DC)



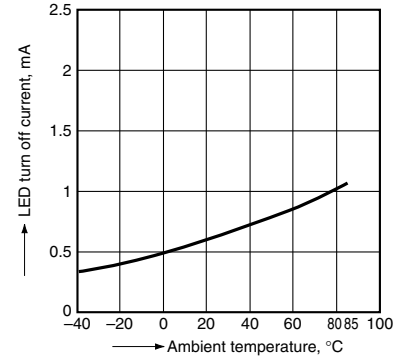
4. Turn off time vs. ambient temperature characteristics
LED current: 5 mA; Load voltage: 80 V (DC);
Continuous load current: 70 mA (DC)



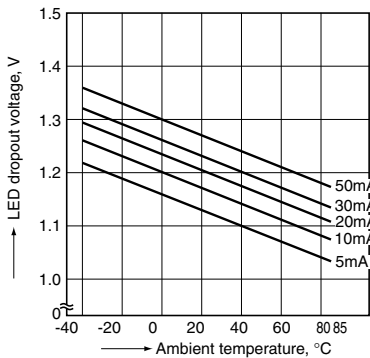
5. LED operate current vs. ambient temperature characteristics
Continuous load current: 70 mA (DC)



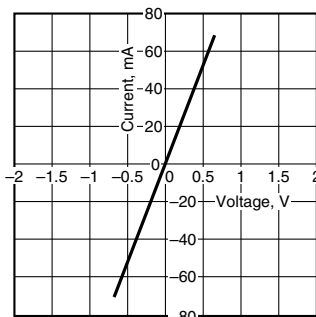
6. LED turn off current vs. ambient temperature characteristics
Continuous load current: 70 mA (DC)



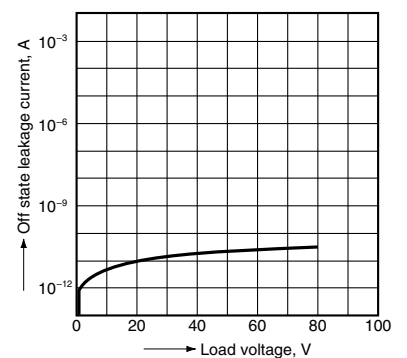
7. LED dropout voltage vs. ambient temperature characteristics
LED current: 5 to 50 mA



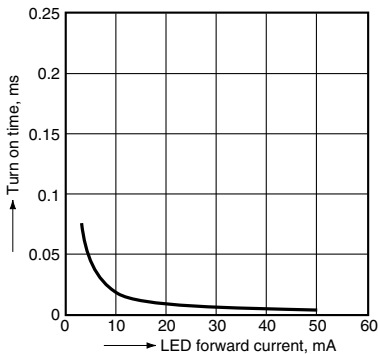
8. Current vs. voltage characteristics of output at MOS portion
Ambient temperature: 25°C 77°F



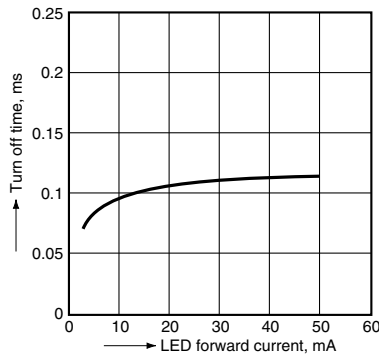
9. Off state leakage current vs. load voltage characteristics
Ambient temperature: 25°C 77°F



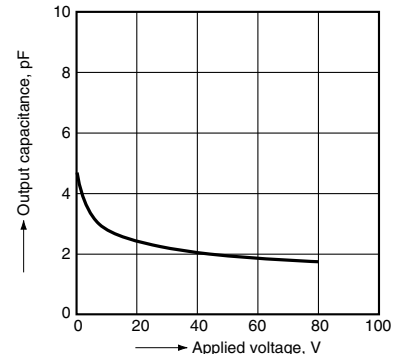
10. Turn on time vs. LED forward current characteristics
Load voltage: 80 V (DC); Continuous load current:
70 mA (DC); Ambient temperature: 25°C 77°F



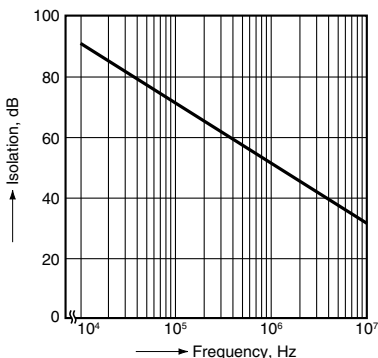
11. Turn off time vs. LED forward current characteristics
Load voltage: 80 V (DC); Continuous load current:
70 mA (DC); Ambient temperature: 25°C 77°F



12. Output capacitance vs. applied voltage characteristics
Frequency: 1 MHz, 30 m Vrms;
Ambient temperature: 25°C 77°F



13. Isolation vs. frequency characteristics (50Ω impedance)
Ambient temperature: 25°C 77°F



14. Insertion loss vs. frequency characteristics (50Ω impedance)
Ambient temperature: 25°C 77°F

