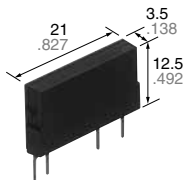




High capacity up to 6A
in a slim SIL package

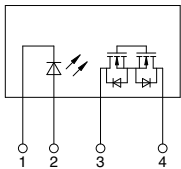
PhotoMOS®
Power 1 Form A
High Capacity (AQZ200G)

New



(Height includes
standoff)

mm inch



RoHS compliant

Please check our website for the latest information regarding compliance to safety standards.

FEATURES

1. High capacity type power PhotoMOS.
Can switch a wide range of currents and voltages. Can control various types of loads, from very small loads to a max. 6A AC/DC current for sequencers, motors, and lamps.
2. Low on-resistance and high sensitivity.
Low on-resistance of less than Typ. 0.015Ω (AQZ202G). High sensitivity LED operate current of Typ. 1 mA.
3. AC/DC dual use
Bi-directional control is possible. There is no need to differentiate depending on the load as was necessary with the conventional SSR.
4. Slim SIL 4-pin package
(L) 21.0 mm × (W) 3.5 mm × (H) 12.5 mm
(L) .827 inch × (W) .138 inch × (H) .492 inch
The compact size of the 4-pin SIL package allows high density mounting
5. Low-level off state leakage current of max. 10 μA
6. Controls low-level analog signals
The triac, photocoupler, or SSR cannot be used to control signals of less than several hundred mV. The high capacity type power PhotoMOS feature extremely low closed-circuit offset voltage to enable control of low-level analog signals without distortion.

TYPICAL APPLICATIONS

- Traffic signals
- Measuring instruments
- Industrial machines
- Mercury relay replacement

TYPES

	Output rating*		Package	Part No.	Packing quantity	
	Load voltage	Load current			Inner carton	Outer carton
AC/DC dual use	60 V	6.0 A	SIL4-pin	AQZ202G	25 pcs.	500 pcs.
	100 V	4.0 A		AQZ205G		
	200 V	2.0 A		AQZ207G		
	600 V	1.0 A		AQZ206G2		

Note: Please refer to the “Cautions for use” regarding the recommended operation load voltage.
* Load voltage and current: Indicate the peak AC and DC values.

RATING

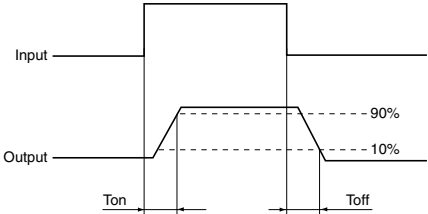
1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

Item		Symbol	AQZ202G	AQZ205G	AQZ207G	AQZ206G2	Remarks
Input	LED forward current	I _F	50 mA				
	LED reverse voltage	V _R	5 V				
	Peak forward current	I _{FP}	1 A				f = 100Hz, Duty factor = 0.1%
	Power dissipation	P _{in}	75 mW				
Output	Load voltage	V _L	60 V	100 V	200 V	600 V	
	Continuous load current	I _L	6.0 A	4.0 A	2.0 A	1.0 A	Peak AC, DC
	Peak load current	I _{peak}	12.0 A	8.0 A	6.0 A	3.0 A	100 ms (1shot), V _L = DC
	Power dissipation	P _{out}	1.6 W				
Total power dissipation		P _T	1.6 W				
I/O isolation voltage		V _{iso}	2,500 Vrms				
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 (Ambient temperature: 25°C 77°F)

Item			Symbol	AQZ202G	AQZ205G	AQZ207G	AQZ206G2	Condition
Input	LED operate current	Typical	I _{Fon}	1.0 mA				I _L = 100 mA V _L = 10 V
		Maximum		3.0 mA				
	LED turn off current	Minimum	I _{Foff}	0.2 mA				I _L = 100 mA V _L = 10 V
		Typical		0.9 mA				
	LED dropout voltage	Typical	V _F	1.25 V (1.16 V at I _F = 10 mA)				I _F = 50 mA
		Maximum		1.5 V				
Output	On resistance	Typical	R _{on}	0.015 Ω	0.035 Ω	0.18 Ω	0.52 Ω	I _F = 10 mA I _L = Max. Within 1 s
		Maximum		0.03 Ω	0.06 Ω	0.35 Ω	0.8 Ω	
	Off state leakage current	Maximum	I _{Leak}	10 μA				I _F = 0 mA V _L = Max.
Transfer characteristics	Turn on time*	Typical	T _{on}	3.8 ms	5.0 ms	2.5 ms	3.0 ms	I _F = 10 mA I _L = 100 mA V _L = 10 V
		Maximum		10 ms				
	Turn off time*	Typical	T _{off}	0.2 ms	0.3 ms	0.2 ms		I _F = 10 mA I _L = 100 mA V _L = 10 V
		Maximum		3.0 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
	Max. operating frequency	Maximum	—	0.5 cps				I _F = 10 mA Duty factor = 50% I _L = Max., V _L = Max.

*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 LED current		I _F	10	30	mA
AQZ202G	Load voltage (Peak AC)	V _L	—	48	V
	Continuous load current	I _L	—	6.0	A
AQZ205G	Load voltage (Peak AC)	V _L	—	80	V
	Continuous load current	I _L	—	4.0	A
AQZ207G	Load voltage (Peak AC)	V _L	—	160	V
	Continuous load current	I _L	—	2.0	A
AQZ206G2	Load voltage (Peak AC)	V _L	—	480	V
	Continuous load current	I _L	—	1.0	A

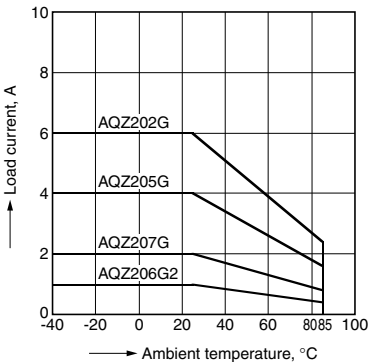
■ These products are not designed for automotive use.

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

REFERENCE DATA

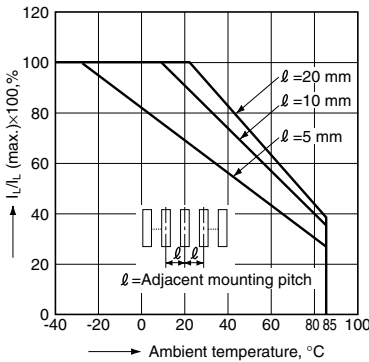
1. Load current vs. ambient temperature characteristics

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



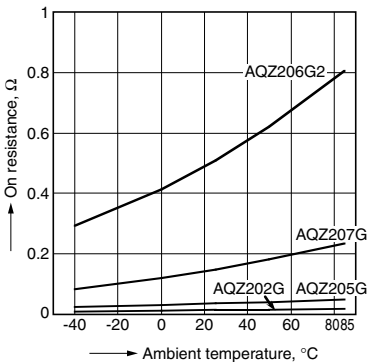
2. Load current vs. ambient temperature characteristics in adjacent mounting

I_L: Load current;
I_L (max.): Maximum continuous load current



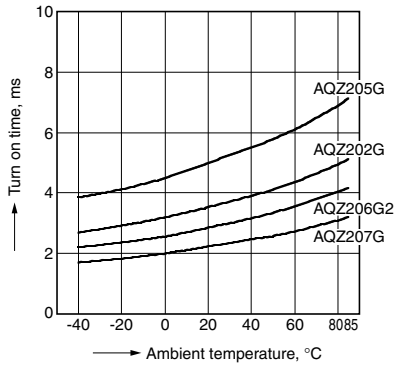
3. On resistance vs. ambient temperature characteristics

LED current: 10 mA;
Continuous load current:
6 A (DC) (AQZ202G), 4 A (DC) (AQZ205G),
2 A (DC) (AQZ207G), 1 A (DC) (AQZ206G2)



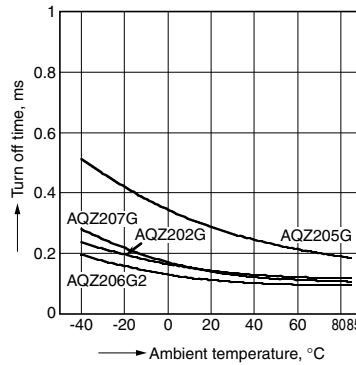
4. Turn on time vs. ambient temperature characteristics

LED current: 10 mA; Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



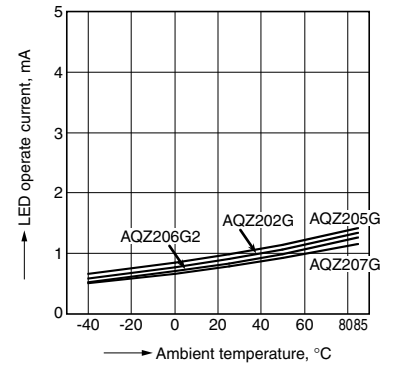
5. Turn off time vs. ambient temperature characteristics

LED current: 10 mA; Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



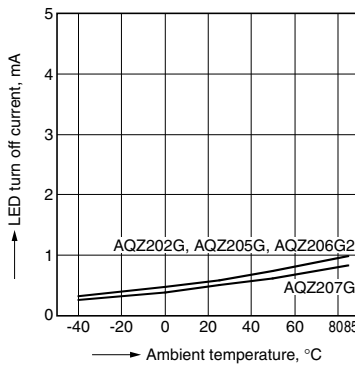
6. LED operate current vs. ambient temperature characteristics

Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



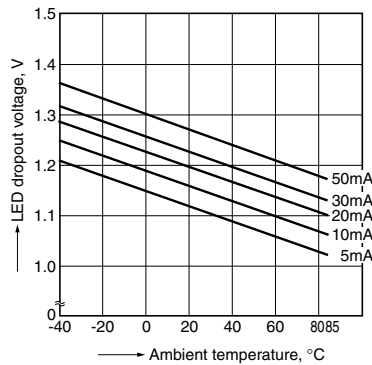
7. LED turn off current vs. ambient temperature characteristics

Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC)



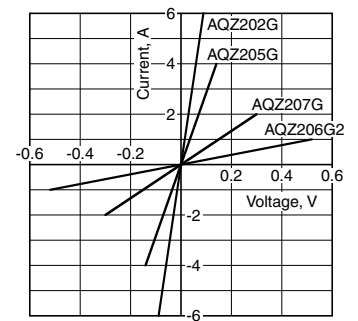
8. LED dropout voltage vs. ambient temperature characteristics

Sample: all types;
LED current: 5 to 50 mA



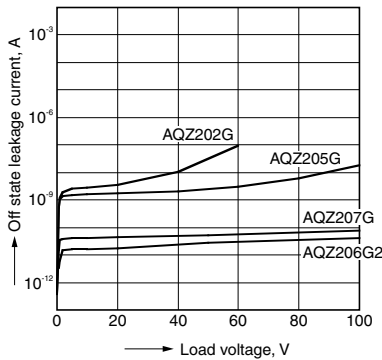
9. Current vs. voltage characteristics of output at MOS portion

Ambient temperature: 25°C 77°F



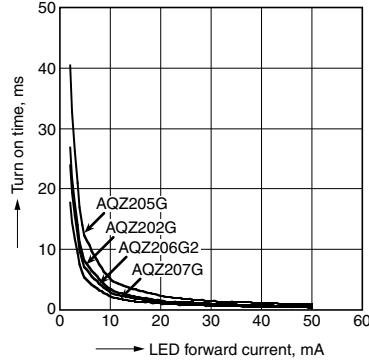
10. Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C 77°F



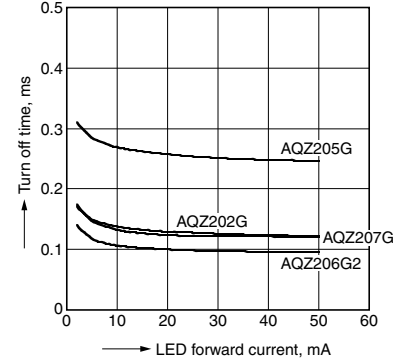
11. Turn on time vs. LED forward current characteristics

Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC);
Ambient temperature: 25°C 77°F



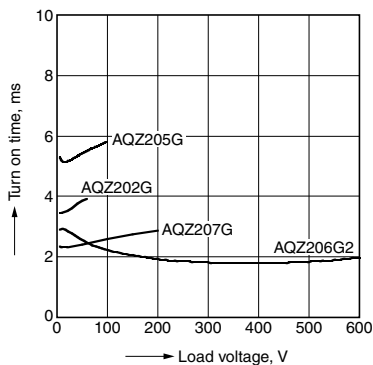
12. Turn off time vs. LED forward current characteristics

Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC);
Ambient temperature: 25°C 77°F



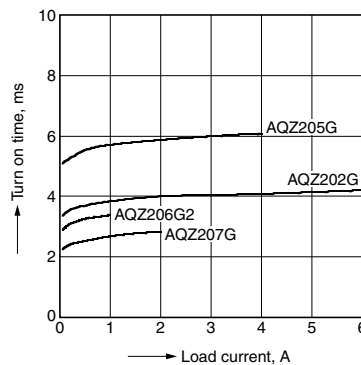
13. Turn on time vs. load voltage characteristics

LED current: 10 mA;
Continuous load current: 100 mA;
Ambient temperature: 25°C 77°F



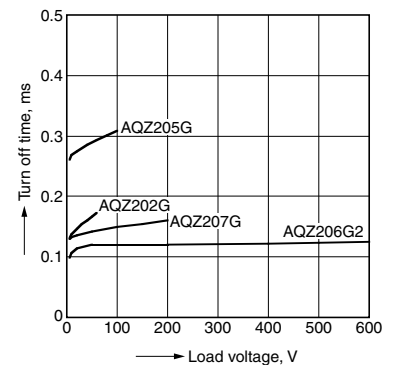
14. Turn on time vs. load current characteristics

LED current: 10 mA;
Load voltage: 10 V (DC);
Ambient temperature: 25°C 77°F

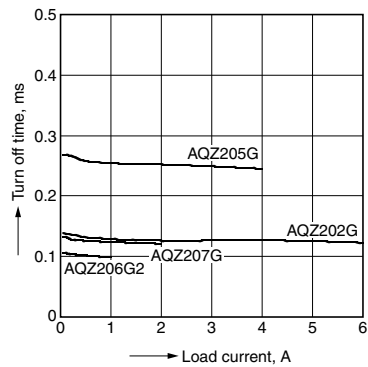


15. Turn off time vs. load voltage characteristics

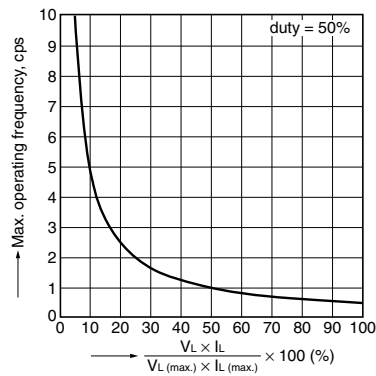
LED current: 10 mA;
Continuous load current: 100 mA;
Ambient temperature: 25°C 77°F



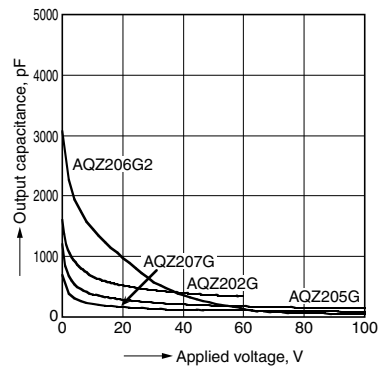
16. Turn off time vs. load current characteristics
LED current: 10 mA;
Load voltage: 10 V (DC);
Ambient temperature: 25°C 77°F



17. Max. operating frequency vs. load voltage/
current characteristics
Sample: All types; LED current: 10 mA;
Ambient temperature: 25°C 77°F
 V_L : Load voltage, V_L (Max.): Max. rated load voltage
 I_L : Load current, I_L (Max.): Max. rated continuous load current

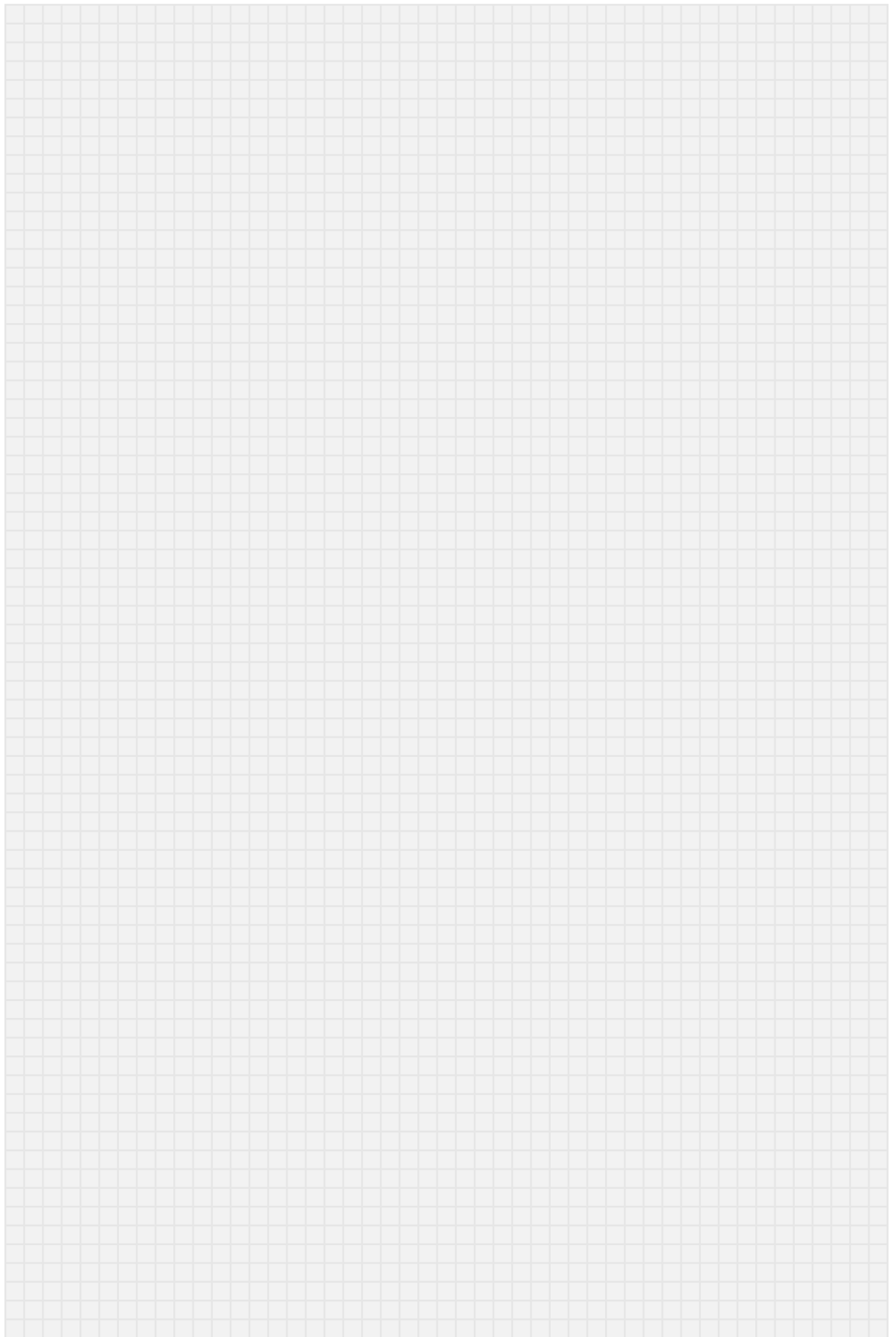


18. Output capacitance vs. applied voltage characteristics
Frequency: 1 MHz;
Ambient temperature: 25°C 77°F



CAUTIONS FOR USE

For cautions for general use, please read “PhotoMOS® Cautions for Use” at Automation Control WEB site (as described in footer of catalog).



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