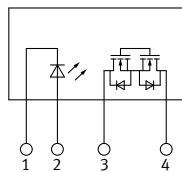
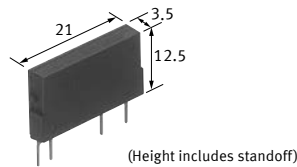


Power 1 Form A High Capacity

High capacity up to 6A in a slim SIL package



(Unit: mm)

FEATURES

- High capacity type power PhotoMOS
- Low on-resistance and high sensitivity
- AC/DC dual use
- Slim SIL 4-pin package
- Low-level off state leakage current of max. 10 μ A
- Controls low-level analog signals

TYPICAL APPLICATIONS

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

Note: Please contact our sales representative for automotive applications of PhotoMOS.

TYPES

Category	Output rating*		Part No.	Packing quantity	
	Load voltage	Load current		Inner carton (1-tube)	Outer carton
AC/DC dual use	60 V	6.0 A	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.

*Indicate the peak AC and DC values.

RATING

Absolute maximum ratings (Ambient temperature: 25°C)

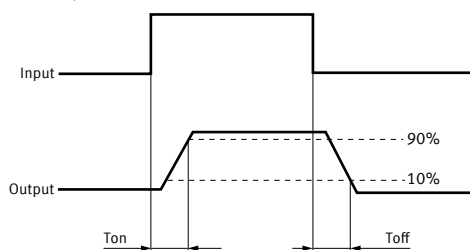
Item		Symbol	AQZ202G	AQZ205G	AQZ207G	AQZ206G2	Remarks
Input	LED forward current	I_F	50 mA				
	LED reverse voltage	V_R	5 V				
	Peak forward current	I_{FP}	1 A				f = 100 Hz, Duty Ratio = 0.1%
	Power dissipation	P_{in}	75 mW				
Output	Load voltage	V_L	60 V	100 V	200 V	600 V	
	Continuous load current	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 (1 shot), $V_L = DC$
	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				(Avoid icing and condensation)
Ambient temperature (Storage)		T_{stg}	-40 to +100°C				

PhotoMOS Power 1 Form A High Capacity

■ Electrical characteristics (Ambient temperature: 25°C)

Item		Symbol	AQZ202G	AQZ205G	AQZ207G	AQZ206G2	Condition
Input	LED operate current	Typical	1.0 mA				$I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum	3.0 mA				
	LED turn off current	Minimum	0.2 mA				$I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Typical	0.9 mA				
LED dropout voltage	Typical	1.25 V (1.16 V at $I_F = 10 \text{ mA}$)				$I_F = 50 \text{ mA}$	
	Maximum	1.5 V					
Output	On resistance	Typical	0.015 Ω	0.035 Ω	0.18 Ω	0.52 Ω	$I_F = 10 \text{ mA}$ $I_L = \text{Max.}$ Within 1 s
		Maximum	0.03 Ω	0.06 Ω	0.35 Ω	0.8 Ω	
	Off state leakage current	Maximum	10 μA				$I_F = 0 \text{ mA}$ $V_L = \text{Max.}$
Transfer characteristics	Turn on time*	Typical	3.8 ms	5.0 ms	2.5 ms	3.0 ms	$I_F = 10 \text{ mA}$ $I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum	10 ms				
	Turn off time*	Typical	0.2 ms	0.3 ms	0.2 ms		$I_F = 10 \text{ mA}$ $I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum	3.0 ms				
	I/O capacitance	Typical	0.8 pF				$f = 1 \text{ MHz}$ $V_B = 0 \text{ V}$
		Maximum	1.5 pF				
	Initial I/O isolation resistance	Minimum	1,000 M Ω				500 V DC
Max. operating frequency	Maximum	-	0.5 cps				$I_F = 10 \text{ mA}$ duty = 50% $I_L = \text{Max.}$ $V_L = \text{Max.}$

*Turn on/Turn off time



■ Recommended operating conditions (Ambient temperature: 25°C)

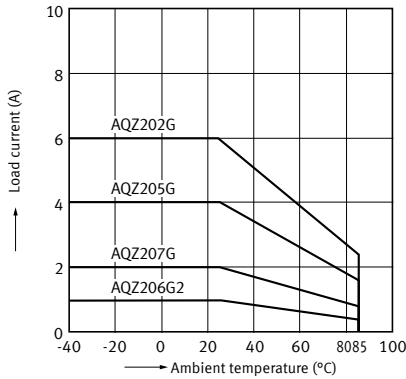
Please use under recommended operating conditions to obtain expected characteristics.

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

REFERENCE DATA

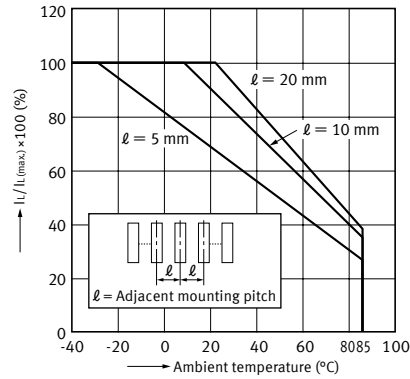
1. Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40 to +85°C



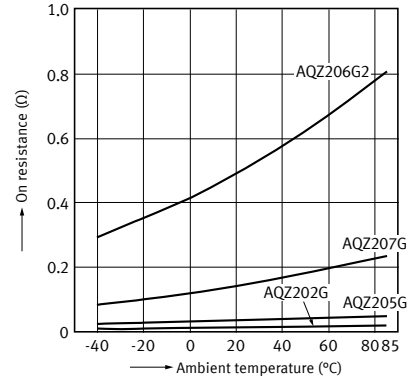
2. Load current vs. ambient temperature characteristics in adjacent mounting

l: Load current;
l_(max.): Maximum continuous load current



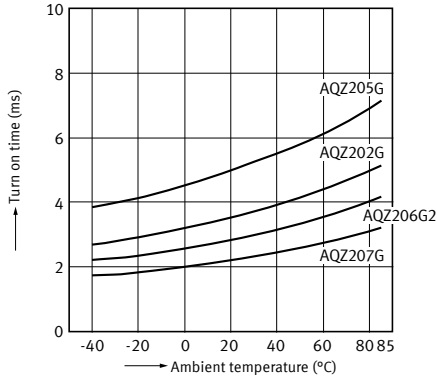
3. On resistance vs. ambient temperature characteristics

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



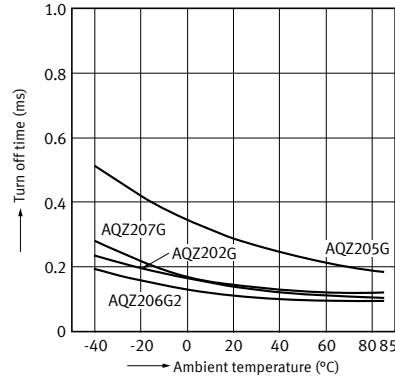
4. Turn on time vs. ambient temperature characteristics

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



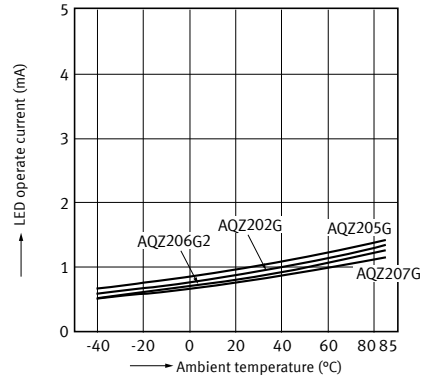
5. Turn off time vs. ambient temperature characteristics

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



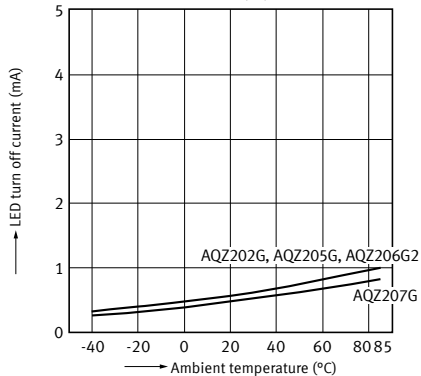
6. LED operate current vs. ambient temperature characteristics

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



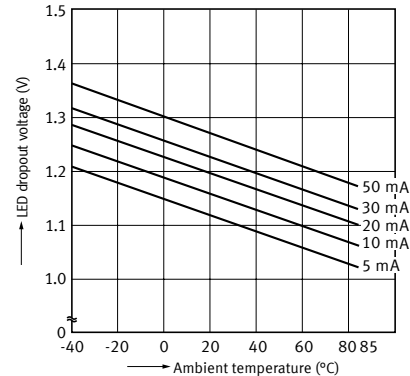
7. LED turn off current vs. ambient temperature characteristics

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



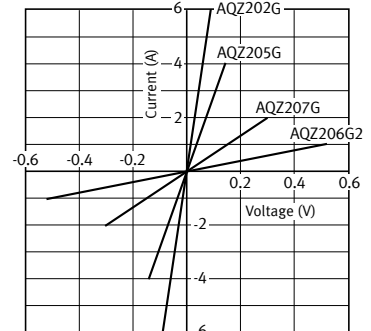
8. LED dropout voltage vs. ambient temperature characteristics

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



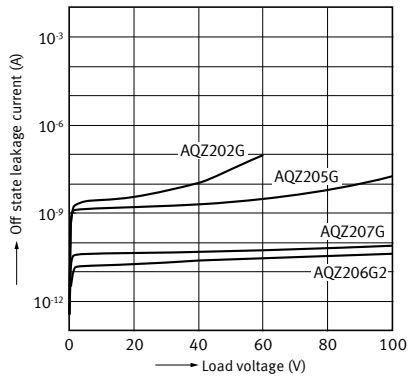
9. Current vs. voltage characteristics of output at MOS portion

Ambient temperature: 25°C



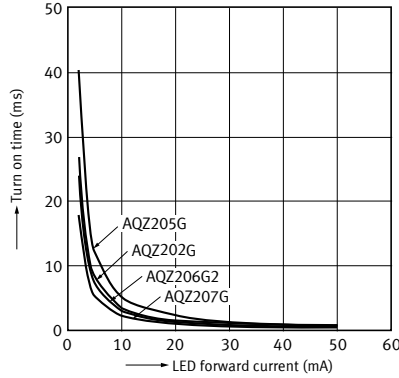
10. Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C



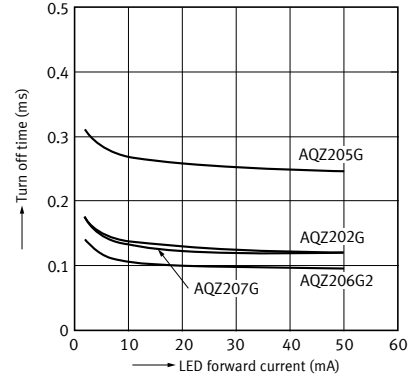
11. Turn on time vs. LED forward current characteristics

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



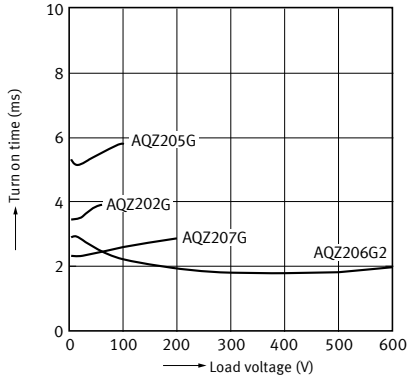
12. Turn off time vs. LED forward current characteristics

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



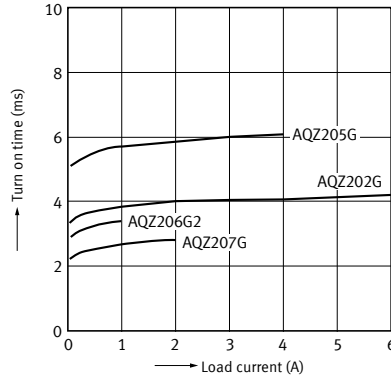
13. Turn on time vs. load voltage characteristics

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



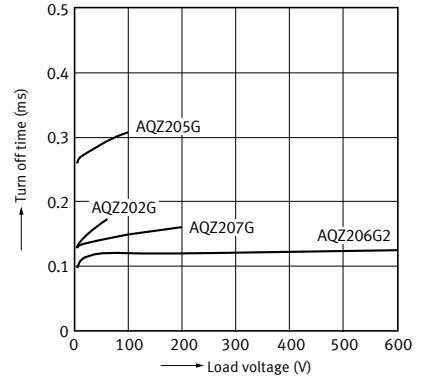
14. Turn on time vs. load current characteristics

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



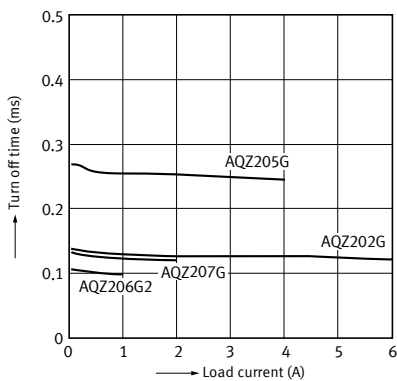
15. Turn off time vs. load voltage characteristics

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



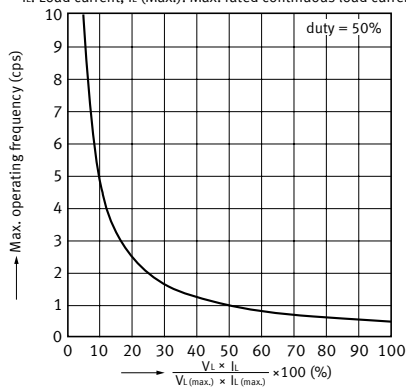
16. Turn off time vs. load current characteristics

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



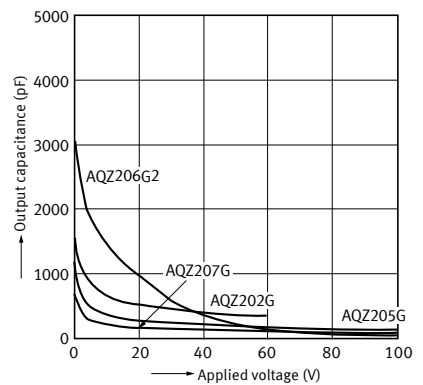
17. Max. operating frequency vs. load voltage and load current characteristics

Sample: All types; LED current: 10 mA;
Ambient temperature: 25°C
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



DIMENSIONS

CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website.

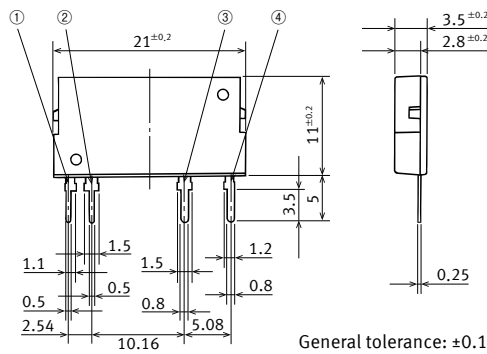
Unit: mm

CAD

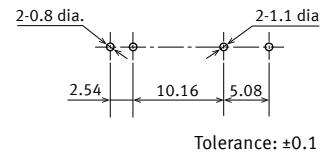


External dimensions

- AC/DC type
 ① Input: DC-
 ② Input: DC+
 ③ Output: DC or AC
 ④ Output: DC or AC
- DC type
 ① Input: DC-
 ② Input: DC+
 ③ Output: DC-
 ④ Output: DC+



PC board pattern (BOTTOM VIEW)



General tolerance: ±0.1

SCHEMATIC AND WIRING DIAGRAMS

Schematic	Output configuration	Load type	Connection	Wiring diagram
	1 Form A	AC/DC	-	

SAFETY STANDARDS

Part No.	UL (Recognized)		CSA (Certified)		Remarks
	File No. (Standard No.)	Contact rating	File No. (Standard No.)	Contact rating	
AC/DC dual use	AQZ202G	6.0 A 60 V AC (peak) 6.0 A 60 V DC	(Certified by C-UL)		VDE approved (Nr. 40051981)
	AQZ205G	4.0 A 100 V AC (peak) 4.0 A 100 V DC			
	AQZ207G	2.0 A 200 V AC (peak) 2.0 A 200 V DC			

Note: For the latest information on compliance with safety standards, please refer to our website.

Please refer to **"the latest product specifications"** when designing your product.

•Requests to customers:
<https://industrial.panasonic.com/ac/e/salespolicies/>

Please contact

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