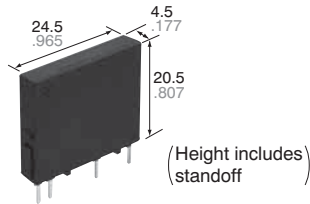


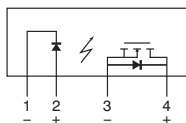
Max. high capacity 10A  
in a slim SIL package

PhotoMOS®  
Power 1 Form A  
DC High Capacity (AQZ192)



CAD Data

mm inch



## 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. 10 A DC current for sequencers, motors, and lamps.

### 2. Low on-resistance and high sensitivity.

Low on-resistance of less than typ. 8 mΩ (AQZ192). High sensitivity LED operate current of typ. 0.7 mA.

### 3. 4-pin SIL type

(L) 24.5 mm × (W) 4.5 mm × (H) 20.5 mm  
(L) .965 inch × (W) .177 inch × (H) .807 inch.

### 4. Low-level off state leakage current of max. 10 μA

### 5. 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

- Photovoltaic power generation system
- Battery system
- Measuring instruments
- Power supply unit
- Industrial machines

\* For the latest information on compliance with international standards, please visit our website.

## TYPES

	Output rating**		Package	Part No.	Packing quantity	
	Load voltage	Load current			Inner carton	Outer carton
DC only	60 V	10 A	SIL4-pin	AQZ192	20 pcs	500 pcs

Note: Please refer to the cautions for use regarding the recommended operation load voltage.

\*\*Load voltage and load current of DC type: DC

## RATING

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

	Item	Symbol	AQZ192	Remarks
Input	LED forward current	I <sub>F</sub>	50 mA	
	LED reverse voltage	V <sub>R</sub>	5 V	
	Peak forward current	I <sub>FP</sub>	1 A	f = 100Hz, Duty factor = 0.1%
	Power dissipation	P <sub>in</sub>	75 mW	
Output	Load voltage (DC)	V <sub>L</sub>	60 V	
	Continuous load current (DC)	I <sub>L</sub>	10 A	
	Peak load current	I <sub>peak</sub>	30 A	100 ms (1shot), V <sub>L</sub> = DC
	Power dissipation	P <sub>out</sub>	2.0 W	
Total power dissipation		P <sub>T</sub>	2.0 W	
I/O isolation voltage		Viso	3,000 V AC	
Temperature limits	Operating	T <sub>opr</sub>	-40°C to +85°C -40°F to 185°F	Non-condensing at low temperatures
	Storage	T <sub>stg</sub>	-40°C to +100°C -40°F to 212°F	

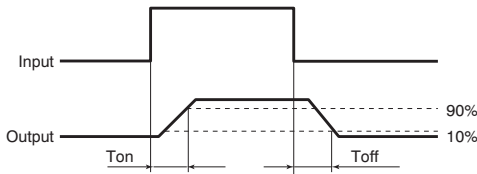
# Power 1 Form A DC High Capacity (AQZ192)

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

Item		Symbol	AQZ192	Remarks
Input	LED operate current	Typical	0.7 mA	$I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum	3.0 mA	
	LED turn off current	Minimum	0.2 mA	
		Typical	0.5 mA	
LED dropout voltage	Typical	1.35 V (1.17 V at $I_F = 10 \text{ mA}$ )		$I_F = 50 \text{ mA}$
	Maximum	1.5 V		
Output	On resistance	Typical	8 mΩ	$I_F = 10 \text{ mA}$ , $I_L = \text{max.}$ Within 1 s on time
		Maximum	15 mΩ	
	Off state leakage current	Maximum	10 μA	
Transfer characteristics	Turn on time*	Typical	1.0 ms	$I_F = 10 \text{ mA}$ , $I_L = 100 \text{ mA}$ , $V_L = 10 \text{ V}$
		Maximum	3.0 ms	
	Turn off time*	Typical	0.11 ms	$I_F = 10 \text{ mA}$ $I_L = 100 \text{ mA}$ , $V_L = 10 \text{ V}$
		Maximum	1.0 ms	
	I/O capacitance	Typical	1.7 pF	$f = 1 \text{ MHz}$ $V_B = 0 \text{ V}$
		Maximum	3.0 pF	
Initial I/O isolation resistance	Minimum	1,000 MΩ	500 V DC	
Maximum operating frequency	Maximum	—	0.5 cps	$I_F = 10 \text{ mA}$ , Duty factor = 50% $V_L \times I_L = 600 \text{ V}\cdot\text{A}$

Note: Please refer to the "Schematic and Wiring Diagrams" for connection method.

\*Turn on/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	$I_F$	10	mA

### ■ Dimensions

### ■ Schematic and Wiring Diagrams

### ■ Cautions for Use

■ These products are not designed for automotive use.

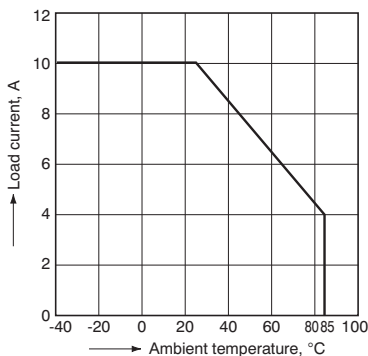
If you are considering to use these products for automotive applications, please contact your local Panasonic technical representative.

Please refer to our information on [PhotoMOS Relays for Automotive Applications](#).

## REFERENCE DATA

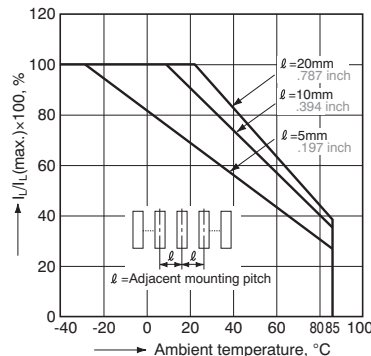
### 1. Load current vs. ambient temperature characteristics

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



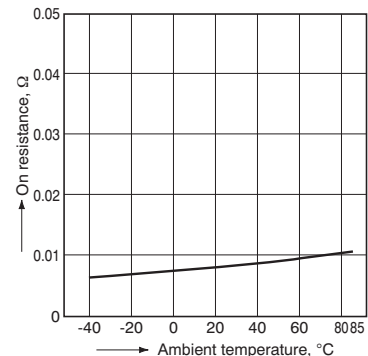
### 2. Load current vs. ambient temperature characteristics in adjacent mounting

$I_L$ : Load current;  
 $I_L (\text{max.})$ : Maximum continuous load current



### 3. On resistance vs. ambient temperature characteristics

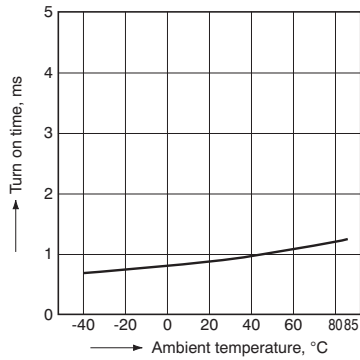
LED current: 10 mA; Load voltage: Max. (DC)  
Continuous load current: Max. (DC)



# Power 1 Form A DC High Capacity (AQZ192)

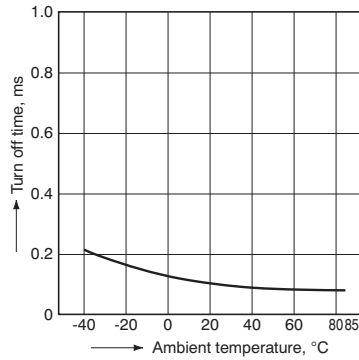
4. Turn on time vs. ambient temperature characteristics

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



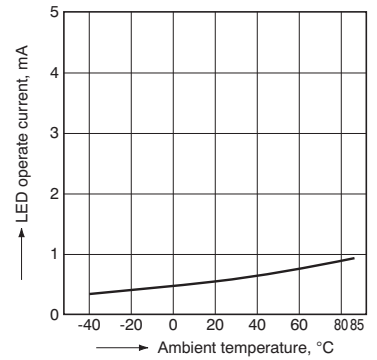
5. Turn off time vs. ambient temperature characteristics

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



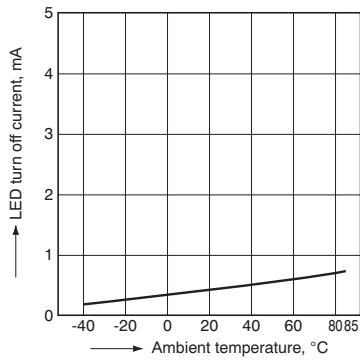
6. LED operate current vs. ambient temperature characteristics

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



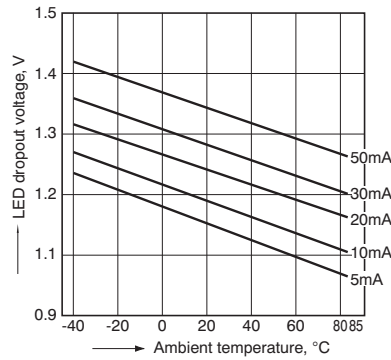
7. LED turn off current vs. ambient temperature characteristics

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



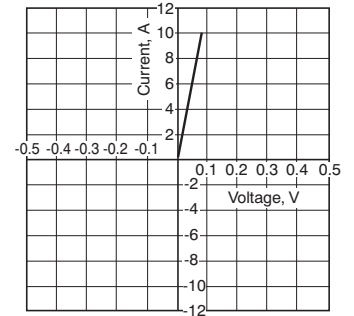
8. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



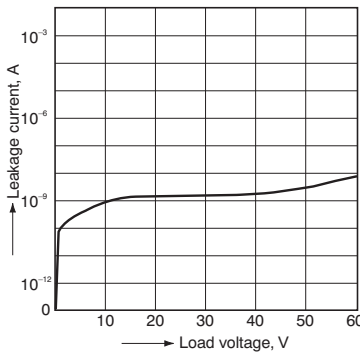
9. Current vs. voltage characteristics of output at MOS portion

Ambient temperature: 25°C 77°F



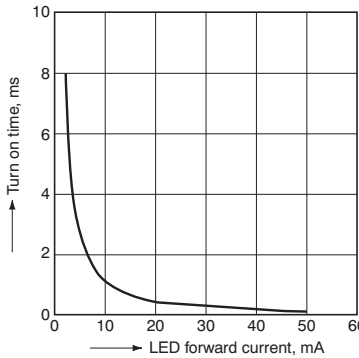
10. Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C 77°F



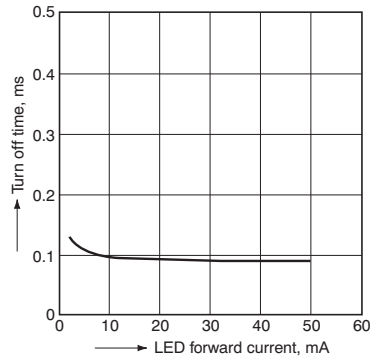
11. Turn on time vs. LED forward current characteristics

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



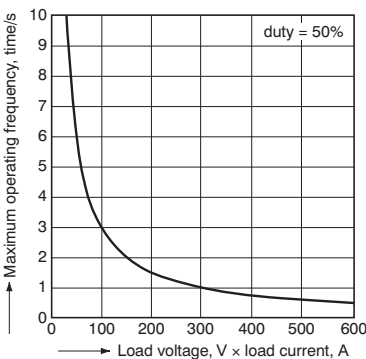
12. Turn off time vs. LED forward current characteristics

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



13. Maximum operating frequency vs. load voltage/current characteristics

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



14. Output capacitance vs. applied voltage characteristics

Frequency: 1 MHz; Ambient temperature: 25°C 77°F

