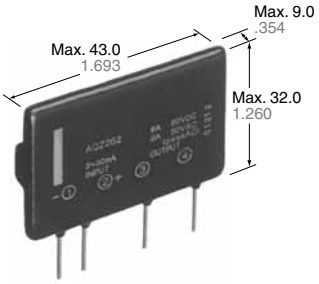
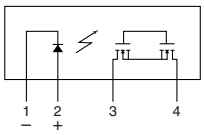
High capacity up to 6A in a slim SIL package

PhotoMOS®
Power 1 Form A
High Capacity (AQZ26❍)



(Height includes standoff)

mm inch



RoHS compliant

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. 0.036Ω (AQZ262). 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. 4-pin SIL type
(L) 43.0 mm × (W) 9.0 mm × (H) 32.0 mm (L) 1.693 inch × (W) .354 inch × (H) 1.260 inch.

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

- Mercury relay replacement
- Compact motors, lamps, heaters
- OA equipment

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	AQZ262	20 pcs	200 pcs
	400 V	1.0 A		AQZ264		

* Indicate the peak AC and DC values.

RATING

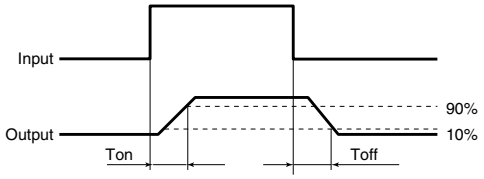
1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

Item		Symbol	AQZ262	AQZ264	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 mA		
Output	Load voltage (peak AC)	V_L	60 V	400 V	
	Continuous load current	I_L	6.0 A	1.0 A	Peak AC, DC
	Peak load current	I_{peak}	10.0 A	3.0 A	100 ms (1shot), V_L = DC
	Power dissipation	P_{out}	3.0 W		
Total power dissipation		P_T	3.0 W		
I/O isolation voltage		Viso	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	Tstg	–40°C to +100°C –40°F to 212°F		

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

Item			Symbol	AQZ262	AQZ264	Remarks
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}	0.4 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}	0.036 Ω	1.0 Ω	I_F = 10 mA I_L = max. Within 1 s on time
		Maximum		0.05 Ω	1.4 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}	5 ms	4 ms	I_F = 10 mA I_L = 100 mA V_L = 10 V
		Maximum		10 ms		
	Turn off time*	Typical	T_{off}	0.32 ms	0.14 ms	I_F = 10 mA I_L = 100 mA V_L = 10 V
		Maximum		3.0 ms		
	I/O capacitance	Typical	C_{iso}	2.0 pF		f = 1 MHz V_B = 0 V
		Maximum		4.0 pF		
	Initial I/O isolation resistance	Minimum	R_{iso}	1,000 MΩ		500 V DC
	Maximum operating frequency	Maximum	—	0.5 cps		I_F = 10 mA Duty factor = 50% I_L = Max., V_L = Max.

*Turn on/off time



RECOMMENDED OPERATING CONDITIONS

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

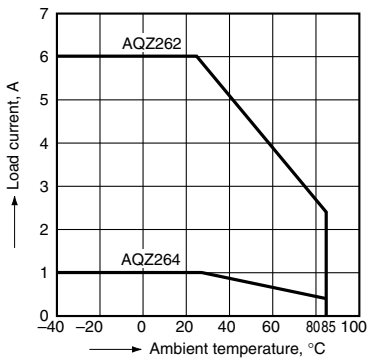
Item	Symbol	Recommended value	Unit
Input LED current	I_F	5 to 10	mA

■ **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

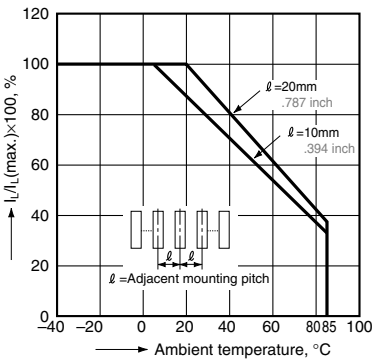
1. Load current vs. ambient temperature characteristics

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



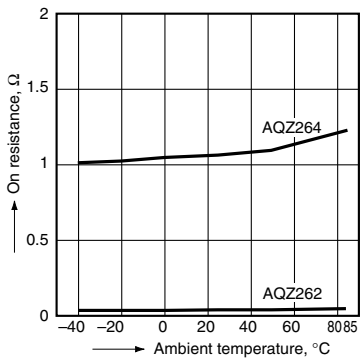
2. Load current vs. ambient temperature characteristics in adjacent mounting

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



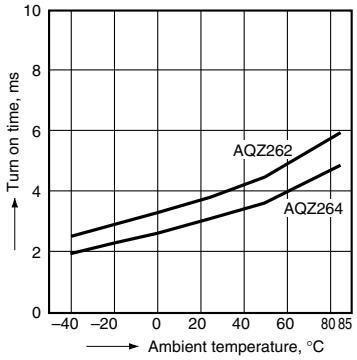
3. On resistance vs. ambient temperature characteristics

LED current: 10 mA;
Continuous load current: 6A (DC)(AQZ262)
1A (DC)(AQZ264)



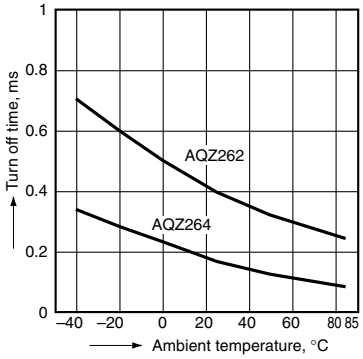
4. Turn on time vs. ambient temperature characteristics

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



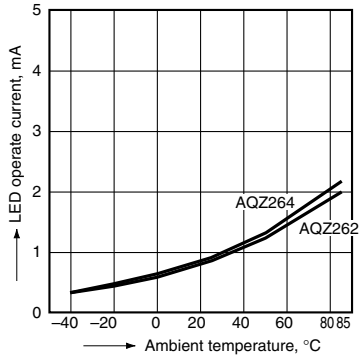
5. Turn off time vs. ambient temperature characteristics

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



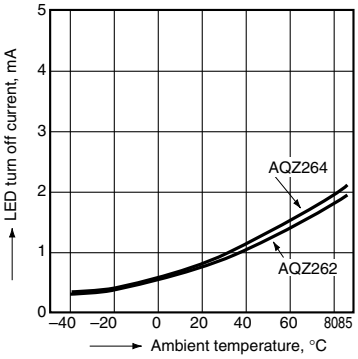
6. LED operate vs. ambient temperature characteristics

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



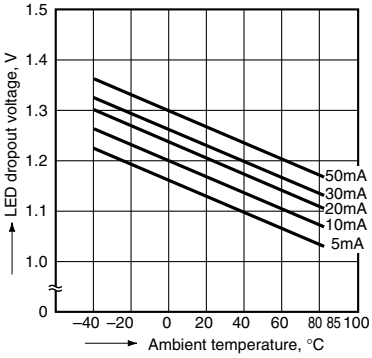
7. LED turn off current vs. ambient temperature characteristics

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



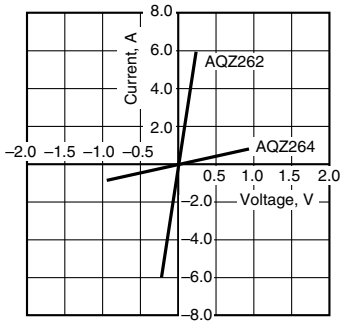
8. LED dropout voltage vs. ambient temperature characteristics

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



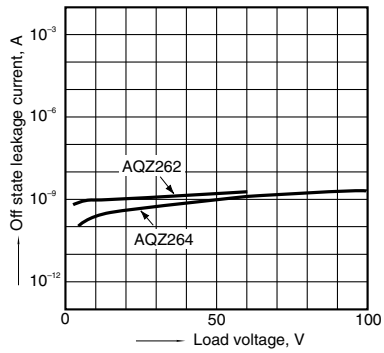
9. Current vs. voltage characteristics of output at MOS portion

Ambient temperature: 25°C 77°F



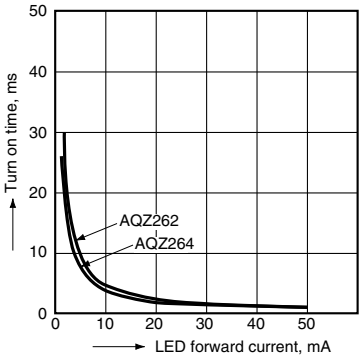
10. Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C 77°F



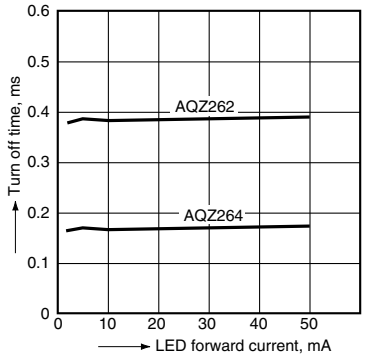
11. Turn on time vs. LED forward current characteristics

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



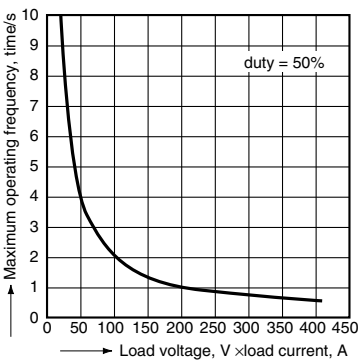
12. Turn off time vs. LED forward current characteristics

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



13. 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: 10 KHz; Ambient temperature: 25°C 77°F