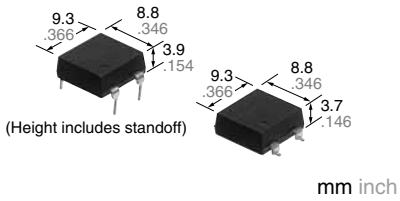
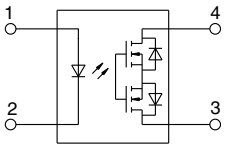
Flat Power-DIP4-pin type with high capacity up to 2A load current

PhotoMOS®
PD 1 Form A
(AQY27❍)



mm inch



RoHS compliant

FEATURES

1. Flat-Packaged type
(W) 8.8 × (D) 9.3 × (H) 3.9 mm
(W) .346 × (D) .366 × (H) .154 inch
2. High capacity of continuous load current 2A (AQY272)
3. High sensitivity and low on-resistance
Max. 2A load can be controlled with 5mA input current. The on-resistance is low at Typ. 0.11Ω (AQY272).

TYPICAL APPLICATIONS

- Measuring and Testing equipment
- IC Testers and Board Testers
- High speed inspection machines

TYPES

Type	Output rating*		Package	Part No.				Packing quantity	
	Load voltage	Load current		Through hole terminal	Surface-mount terminal				
				Tube packing style		Tape and reel packing style		Tube	Tape and reel
						Picked from the 1/2-pin side	Picked from the 3/4-pin side		
AC/DC dual use	60V	2.0A	Power-DIP4-pin	AQY272	AQY272A	AQY272AX	AQY272AZ	1 tube contains: 50 pcs. 1 batch contains: 1,000 pcs.	1,000 pcs.
	100V	1.3A		AQY275	AQY275A	AQY275AX	AQY275AZ		
	200V	0.65A		AQY277	AQY277A	AQY277AX	AQY277AZ		
	400V	0.35A		AQY274	AQY274A	AQY274AX	AQY274AZ		

* Indicate the peak AC and DC values.
Note: The surface mount terminal indicator "A" and the packing style indicator "X" or "Z" are not marked on the device.

RATING

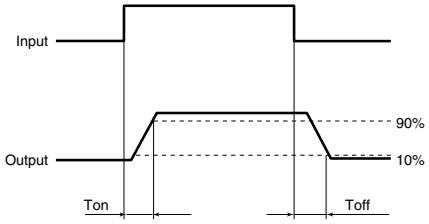
1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

Item		Symbol	AQY272(A)	AQY275(A)	AQY277(A)	AQY274(A)	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	60 V	100 V	200 V	400 V	
	Continuous load current	I_L	2.0 A	1.3 A	0.65 A	0.35 A	Peak AC, DC
	Peak load current	I_{peak}	6.0 A	4.0 A	2.0 A	1.0 A	100ms (1 shot), V_L = DC
	Power dissipation	P_{out}	700 mW				
Total power dissipation		P_T	750 mW				
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	Tstg	–40 to +100°C –40 to +212°F				

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

Item			Symbol	AQY272(A)	AQY275(A)	AQY277(A)	AQY274(A)	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}	0.4 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}	0.11 Ω	0.23 Ω	0.7 Ω	2.1 Ω	I_F = 10 mA, I_L = Max. Within 1 s
		Maximum		0.18 Ω	0.34 Ω	1.1 Ω	3.2 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}	2.46 ms	2.40 ms	1.12 ms	1.65 ms	I_F = 10 mA, I_L = 100 mA V_L = 10 V
		Maximum		5.0 ms				
		Typical		5.64 ms	5.65 ms	2.57 ms	3.88 ms	I_F = 5 mA, I_L = 100 mA V_L = 10 V
		Maximum		10.0 ms				
	Turn off time*	Typical	T_{off}	0.22 ms	0.21 ms	0.10 ms	0.08 ms	I_F = 5 mA or 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.

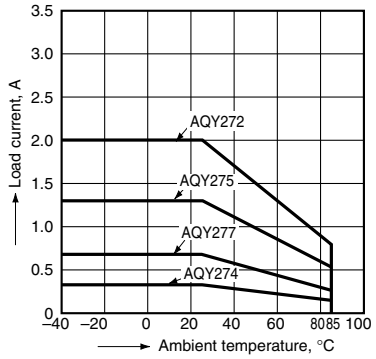
Item		Symbol	Min.	Max.	Unit
LED current		I_F	5	30	mA
AQY272(A)	Load voltage (Peak AC)	V_L	—	48	V
	Continuous load current	I_L	—	2.0	A
AQY275(A)	Load voltage (Peak AC)	V_L	—	80	V
	Continuous load current	I_L	—	1.3	A
AQY277(A)	Load voltage (Peak AC)	V_L	—	160	V
	Continuous load current	I_L	—	0.65	A
AQY274(A)	Load voltage (Peak AC)	V_L	—	320	V
	Continuous load current	I_L	—	0.35	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

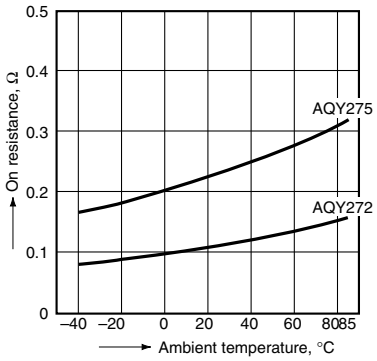
1. Load current vs. ambient temperature characteristics

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



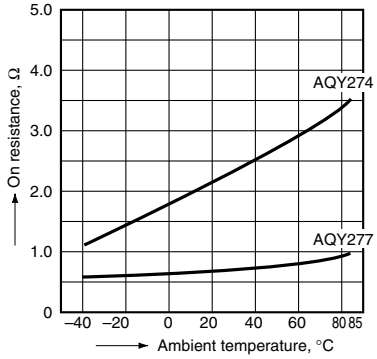
2.-(1) On resistance vs. ambient temperature characteristics

LED current: 10 mA;
Continuous load current: 2.0 A (DC) (AQY272),
1.3 A (DC) (AQY275)



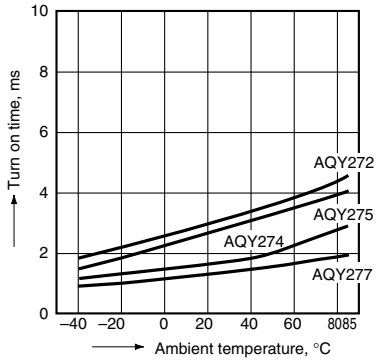
2.-(2) On resistance vs. ambient temperature characteristics

LED current: 10 mA;
Continuous load current: 0.65 A (DC) (AQY277),
0.35 A (DC) (AQY274)



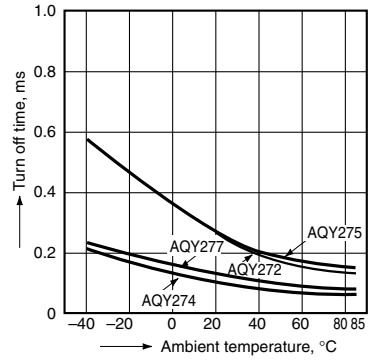
3. Turn on time vs. ambient temperature characteristics

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



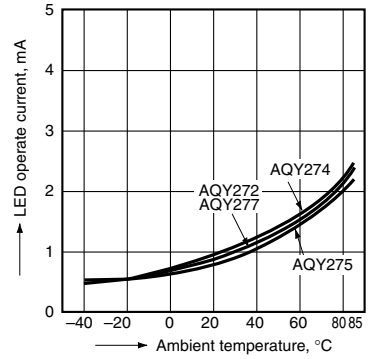
4. Turn off time vs. ambient temperature characteristics

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



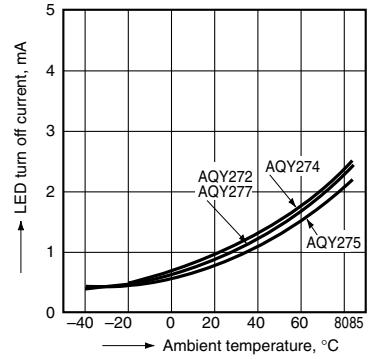
5. LED operate vs. ambient temperature characteristics

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



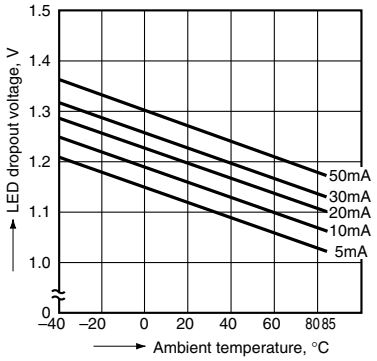
6. LED turn off current vs. ambient temperature characteristics

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



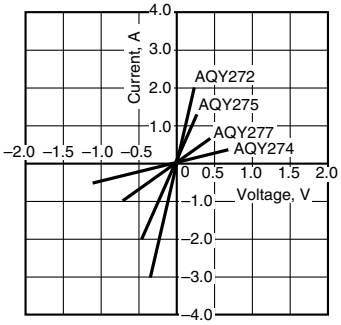
7. LED dropout voltage vs. ambient temperature characteristics

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



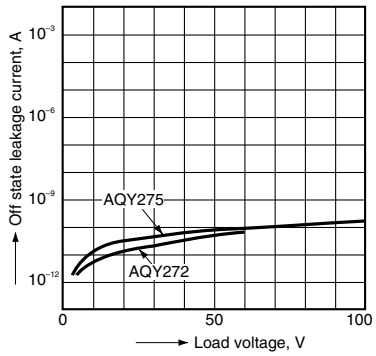
8. Current vs. voltage characteristics of output at MOS portion

Ambient temperature: 25°C 77°F



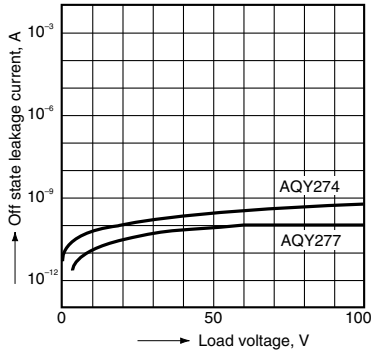
9.-(1) Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C 77°F



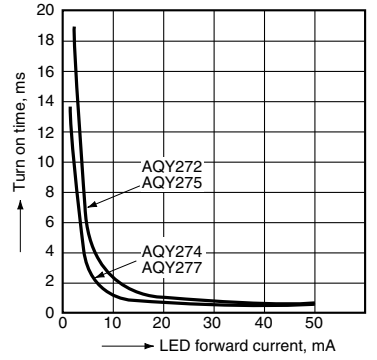
9.-(2) Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C 77°F



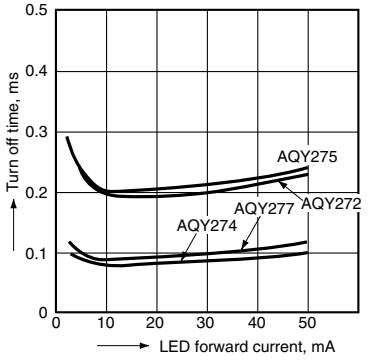
10. Turn on time vs. LED forward current characteristics

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



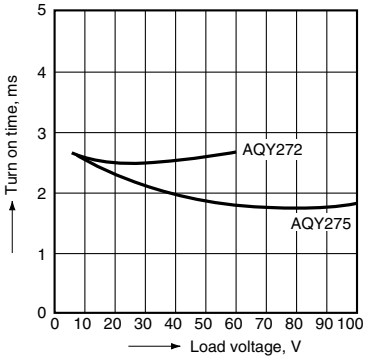
11. Turn off time vs. LED forward current characteristics

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



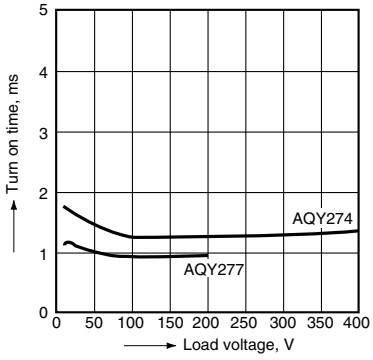
12.-(1) Turn on time vs. load voltage characteristics

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



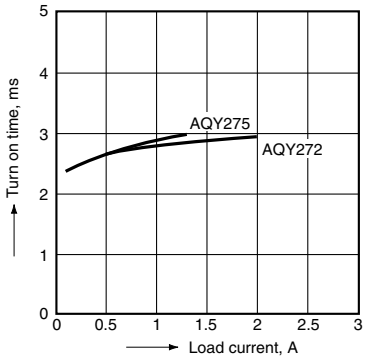
12.-(2) Turn on time vs. load voltage characteristics

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



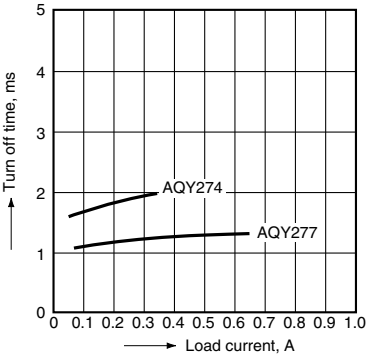
13.-(1) Turn on time vs. load current characteristics

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



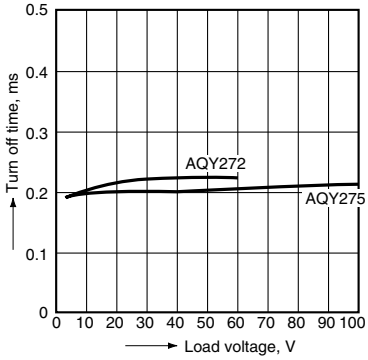
13.-(2) Turn on time vs. load current characteristics

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



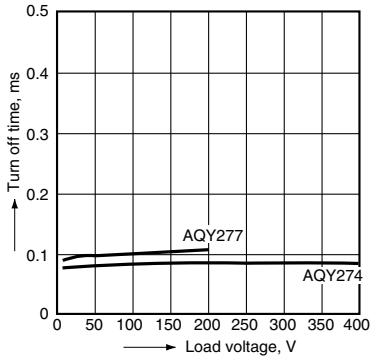
14.-(1) Turn off time vs. load voltage characteristics

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



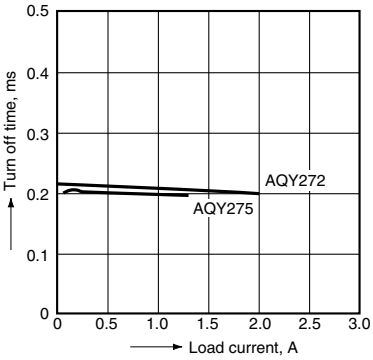
14.-(2) Turn off time vs. load voltage characteristics

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



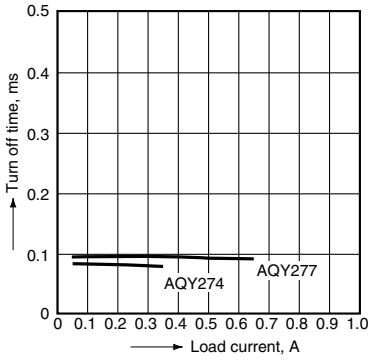
15.-(1) Turn off time vs. load current characteristics

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



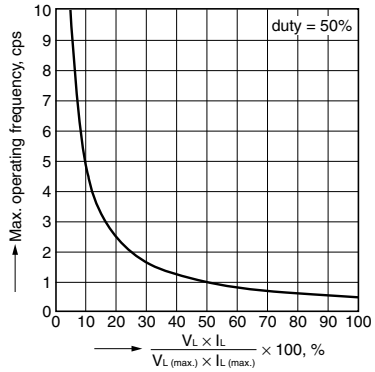
15.-(2) Turn off time vs. load current characteristics

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



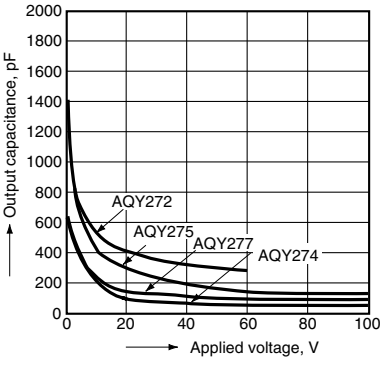
16. Max. operating frequency vs. load voltage/ current characteristics

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



17. Output capacitance vs. applied voltage characteristics

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



Please contact .....

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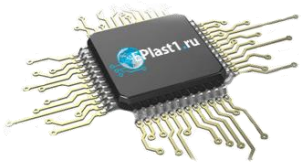
Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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