RATING

DC type

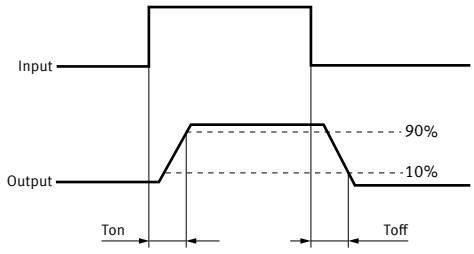
■Absolute maximum ratings (Ambient temperature: 25°C)

Item		Symbol	AQZ102	AQZ105	AQZ107	AQZ104	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 (DC)	V_L	60 V	100 V	200 V	400 V	
	Continuous load current (DC)	I_L	4.0 A	2.6 A	1.3 A	0.7 A	
	Peak load current	I_{peak}	9.0 A	6.0 A	3.0 A	1.5 A	100 ms (1 shot), V_L = DC
	Power dissipation	P_{out}	1.35 W				
Total power dissipation		P_T	1.35 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				

■Electrical characteristics (Ambient temperature: 25°C)

Item			Symbol	AQZ102	AQZ105	AQZ107	AQZ104	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}	0.05 Ω	0.081 Ω	0.34 Ω	1.06 Ω	I_F = 10 mA I_L = Max. Within 1 s
		Maximum		0.09 Ω	0.17 Ω	0.55 Ω	1.6 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}	1.66 ms	1.89 ms	0.83 ms	1.01 ms	I_F = 10 mA I_L = 100 mA V_L = 10 V
		Maximum		5.0 ms				
		Typical		3.79 ms	4.50 ms	1.75 ms	2.34 ms	I_F = 5 mA I_L = 100 mA V_L = 10 V
		Maximum		10.0 ms				
	Turn off time*	Typical	T_{off}	0.15 ms	0.19 ms	0.08 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 = 50% I_L = Max. V_L = 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
LED current		I_F	5	30	mA
AQZ102	Load voltage (DC)	V_L	-	48	V
	Continuous load current (DC)	I_L	-	4.0	A
AQZ105	Load voltage (DC)	V_L	-	80	V
	Continuous load current (DC)	I_L	-	2.6	A
AQZ107	Load voltage (DC)	V_L	-	160	V
	Continuous load current (DC)	I_L	-	1.3	A
AQZ104	Load voltage (DC)	V_L	-	320	V
	Continuous load current (DC)	I_L	-	0.7	A

AC/DC type

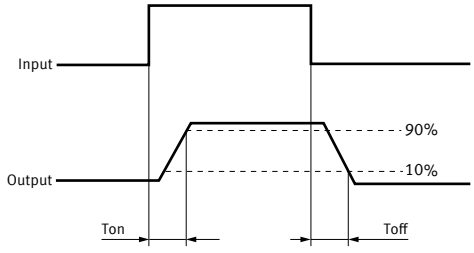
■Absolute maximum ratings (Ambient temperature: 25°C)

Item		Symbol	AQZ202	AQZ205	AQZ207	AQZ204	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 (peak AC)	V_L	60 V	100 V	200 V	400 V	
	Continuous load current	I_L	3.0 A	2.0 A	1.0 A	0.5 A	Peak AC, DC
	Peak load current	I_{peak}	9.0 A	6.0 A	3.0 A	1.5 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				

■Electrical characteristics (Ambient temperature: 25°C)

Item			Symbol	AQZ202	AQZ205	AQZ207	AQZ204	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 = 50% I_L = Max. V_L = Max.

*Turn on/Turn off time



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

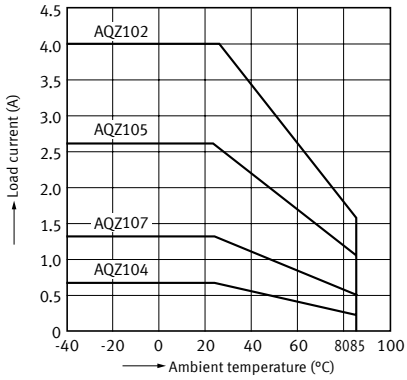
Please use under recommended operating conditions to obtain expected characteristics.

Item		Symbol	Min.	Max.	Unit
LED current		I_F	5	30	mA
AQZ202	Load voltage (Peak AC)	V_L	-	48	V
	Continuous load current	I_L	-	3.0	A
AQZ205	Load voltage (Peak AC)	V_L	-	80	V
	Continuous load current	I_L	-	2.0	A
AQZ207	Load voltage (Peak AC)	V_L	-	160	V
	Continuous load current	I_L	-	1.0	A
AQZ204	Load voltage (Peak AC)	V_L	-	320	V
	Continuous load current	I_L	-	0.5	A

REFERENCE DATA

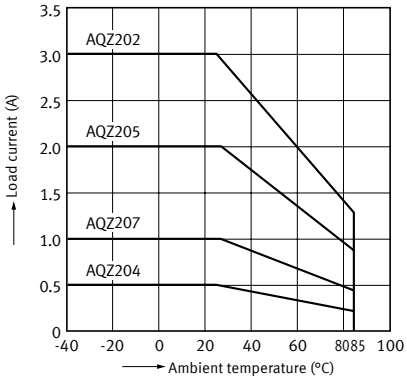
1-1.Load current vs. ambient temperature characteristics (DC type)

Allowable ambient temperature: −40 to +85°C



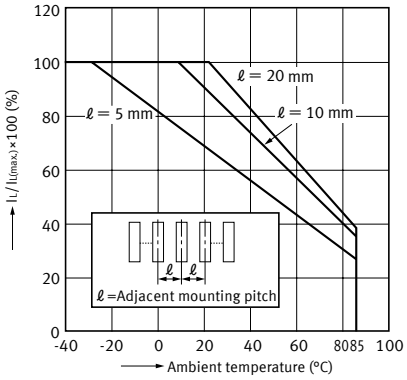
1-2.Load current vs. ambient temperature characteristics (AC/DC type)

Allowable ambient temperature: −40 to +85°C



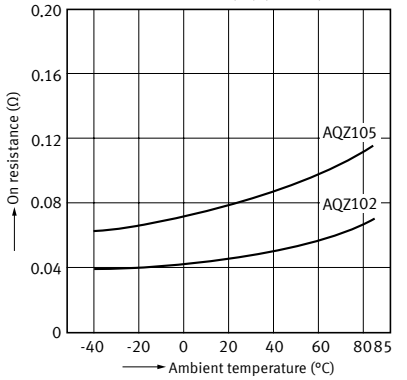
2.Load current vs. ambient temperature characteristics in adjacent mounting

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



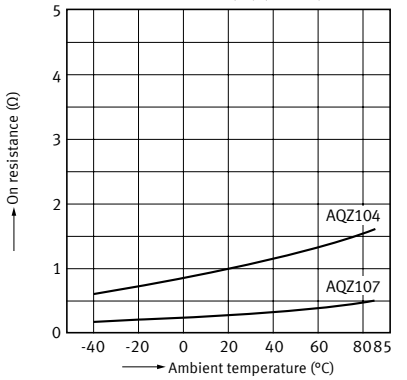
3-1.On resistance vs. ambient temperature characteristics (DC type)

LED current: 10 mA;
Continuous load current: 1.6 A (DC) (AQZ102),
1.04 A (DC) (AQZ105)



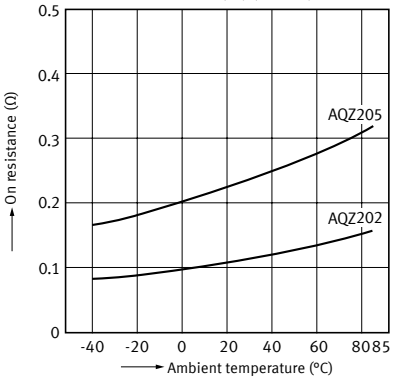
3-2.On resistance vs. ambient temperature characteristics (DC type)

LED current: 10 mA;
Continuous load current: 0.52 A (DC) (AQZ107),
0.28 A (DC) (AQZ104)



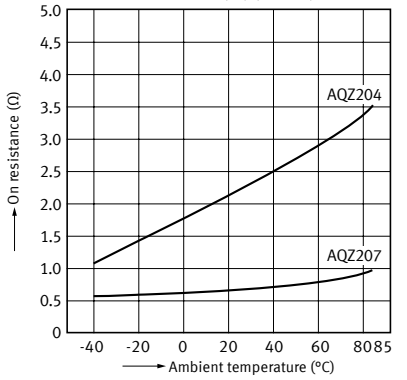
3-3.On resistance vs. ambient temperature characteristics (AC/DC type)

LED current: 10 mA;
Continuous load current: 1.2 A (DC) (AQZ202),
0.8 A (DC) (AQZ205)



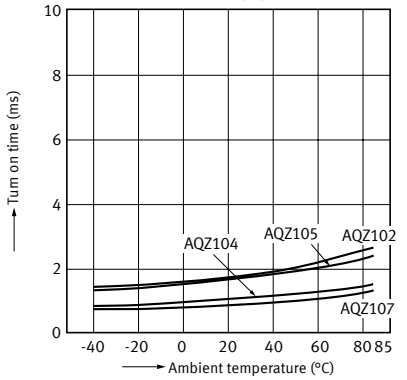
3-4.On resistance vs. ambient temperature characteristics (AC/DC type)

LED current: 10 mA;
Continuous load current: 0.4 A (DC) (AQZ207),
0.2 A (DC) (AQZ204)



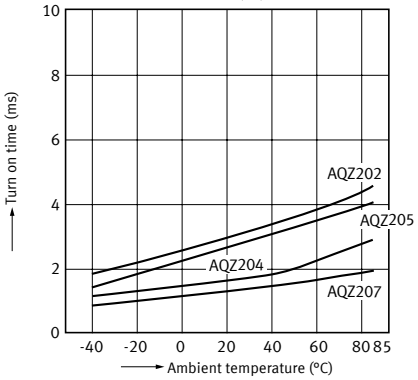
4-1.Turn on time vs. ambient temperature characteristics (DC type)

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



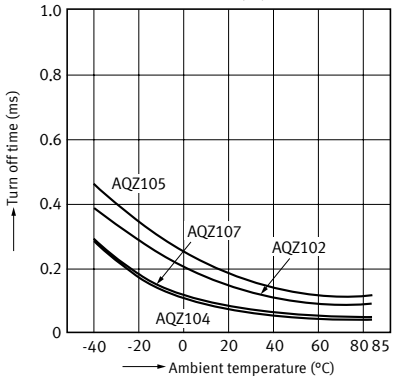
4-2.Turn on time vs. ambient temperature characteristics (AC/DC type)

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



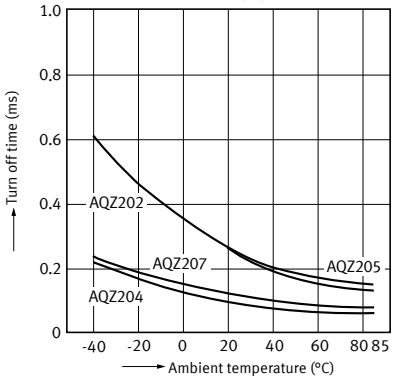
5-1.Turn off time vs. ambient temperature characteristics (DC type)

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



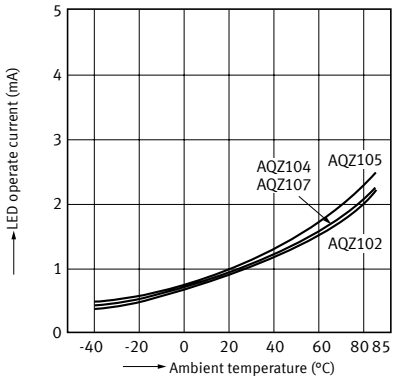
5-2.Turn off time vs. ambient temperature characteristics (AC/DC type)

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



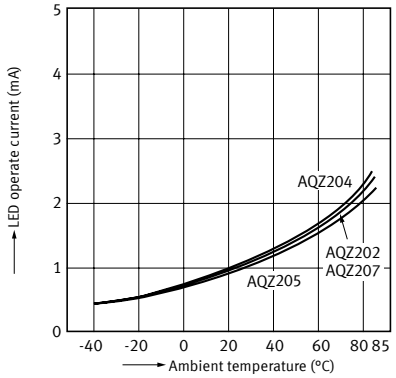
6-1.LED operate current vs. ambient temperature characteristics (DC type)

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



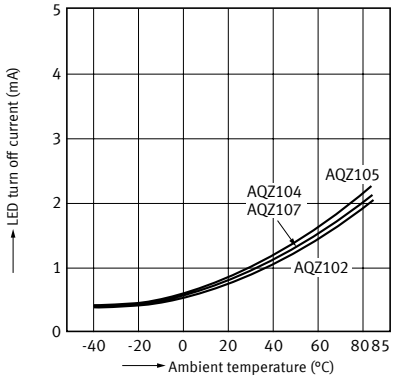
6-2.LED operate current vs. ambient temperature characteristics (AC/DC type)

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



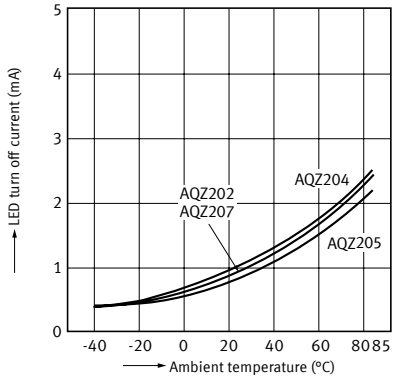
7-1.LED turn off current vs. ambient temperature characteristics (DC type)

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



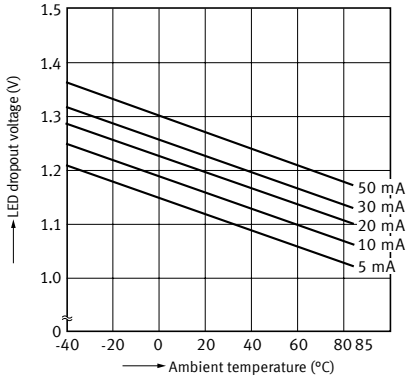
7-2.LED turn off current vs. ambient temperature characteristics (AC/DC type)

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



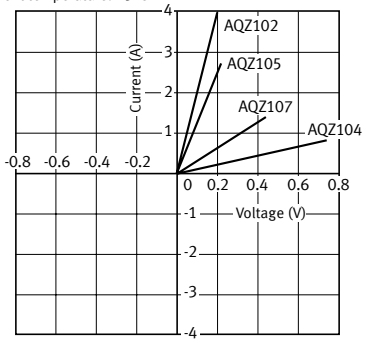
8.LED dropout voltage vs. ambient temperature characteristics

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



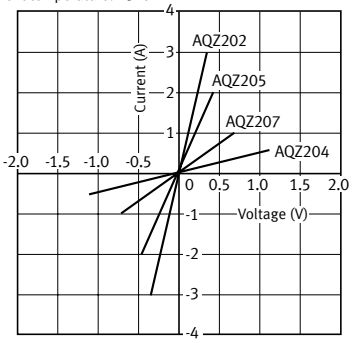
9-1.Current vs. voltage characteristics of output at MOS portion (DC type)

Ambient temperature: 25°C



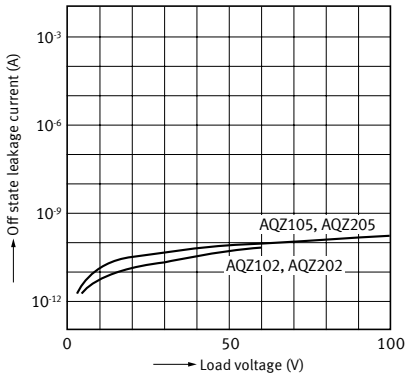
9-2.Current vs. voltage characteristics of output at MOS portion (AC/DC type)

Ambient temperature: 25°C



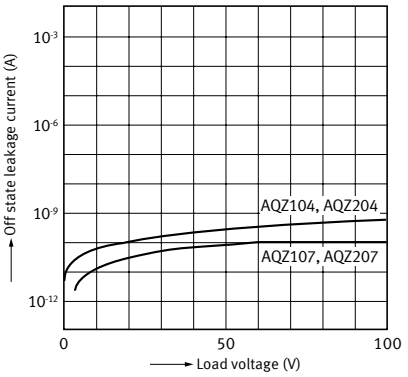
10-1.Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C



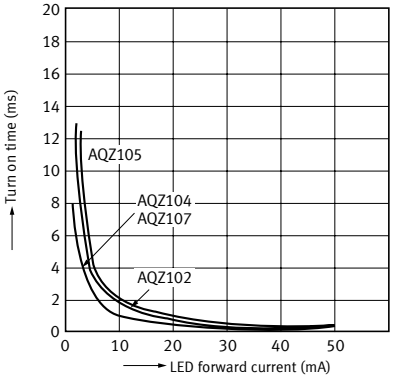
10-2.Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C



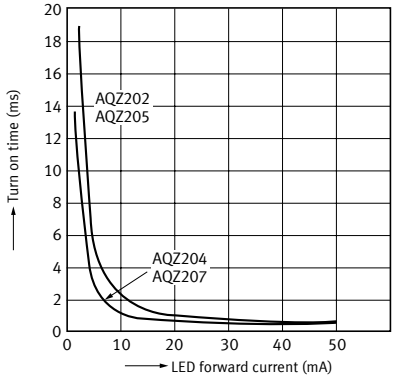
11-1.Turn on time vs. LED forward current characteristics (DC type)

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



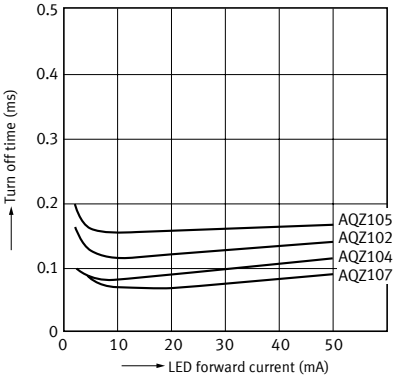
11-2.Turn on time vs. LED forward current characteristics (AC/DC type)

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



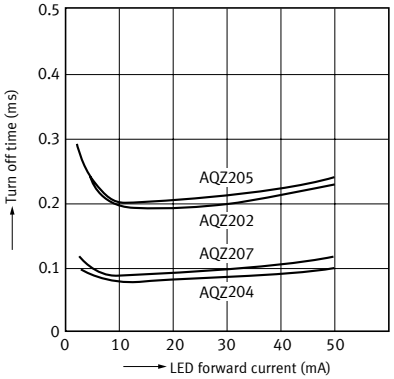
12-1.Turn off time vs. LED forward current characteristics (DC type)

Measured portion: between terminals 4 and 6;
Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC);
Ambient temperature: 25°C



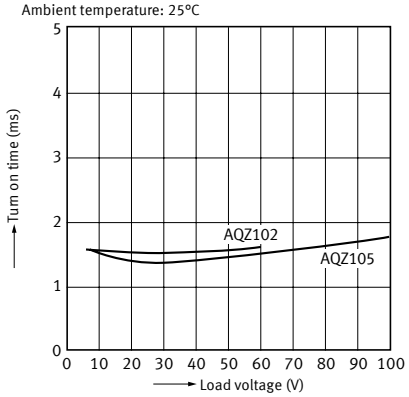
12-2.Turn off time vs. LED forward current characteristics (AC/DC type)

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



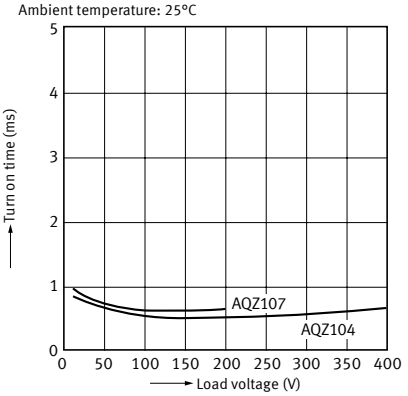
13-1.Turn on time vs. load voltage characteristics (DC type)

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



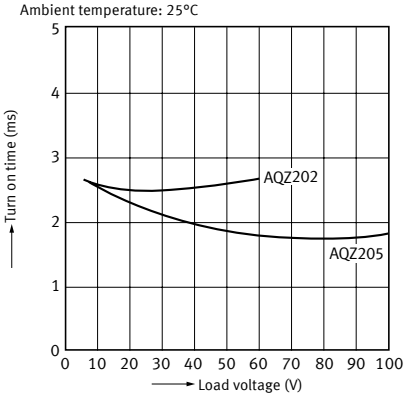
13-2.Turn on time vs. load voltage characteristics (DC type)

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



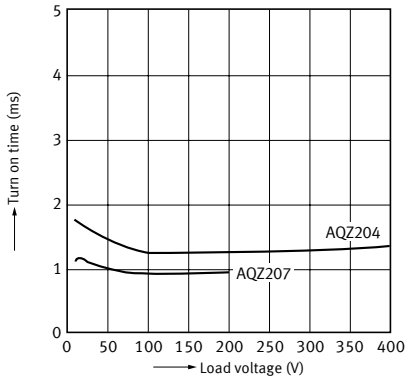
13-3.Turn on time vs. load voltage characteristics (AC/DC type)

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



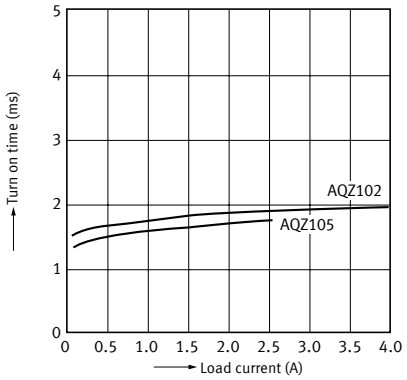
13-4.Turn on time vs. load voltage characteristics (AC/DC type)

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



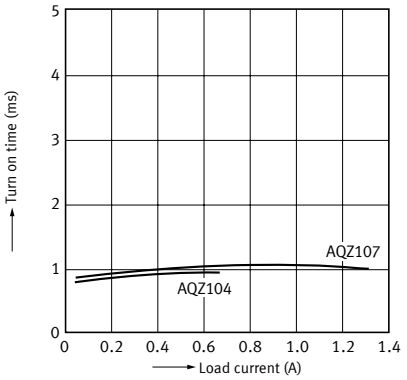
14-1.Turn on time vs. load current characteristics (DC type)

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



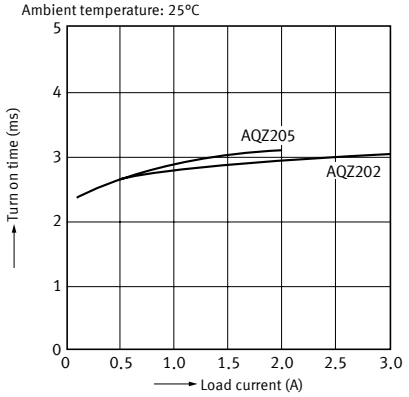
14-2.Turn on time vs. load current characteristics (DC type)

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



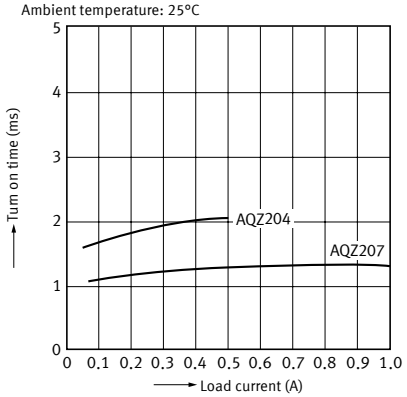
14-3.Turn on time vs. load current characteristics (AC/DC type)

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



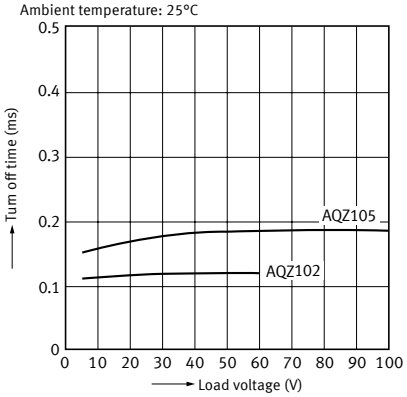
14-4.Turn on time vs. load current characteristics (AC/DC type)

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



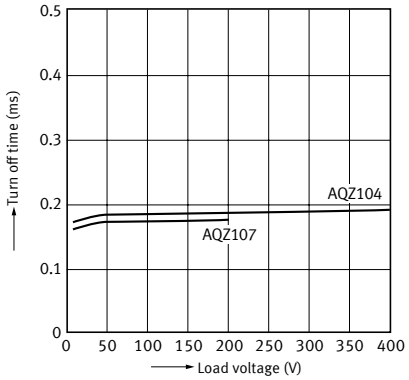
15-1.Turn off time vs. load voltage characteristics (DC type)

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



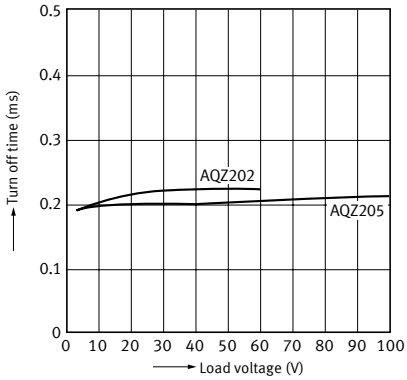
15-2.Turn off time vs. load voltage characteristics (DC type)

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



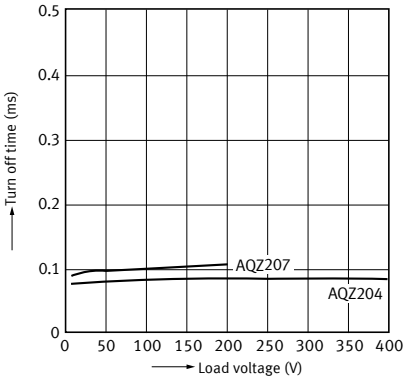
15-3.Turn off time vs. load voltage characteristics (AC/DC type)

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



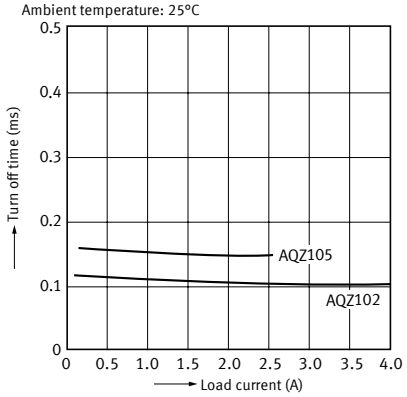
15-4.Turn off time vs. load voltage characteristics (AC/DC type)

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



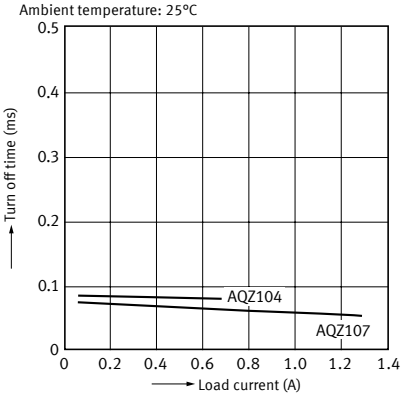
16-1.Turn off time vs. load current characteristics (DC type)

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



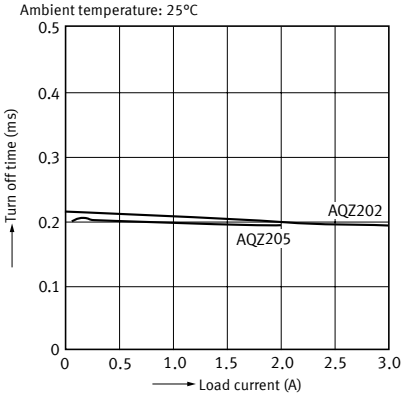
16-2.Turn off time vs. load current characteristics (DC type)

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



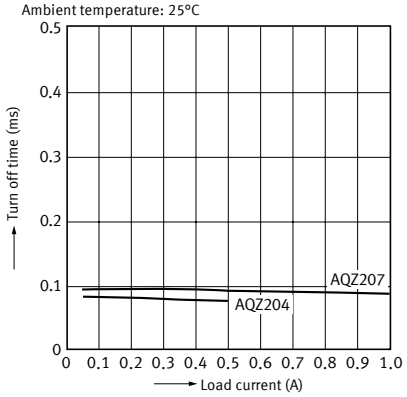
16-3.Turn off time vs. load current characteristics (AC/DC type)

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



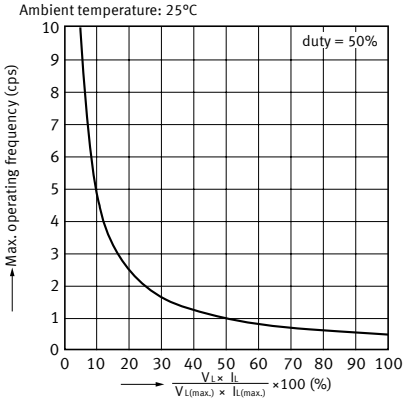
16-4.Turn off time vs. load current characteristics (AC/DC type)

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



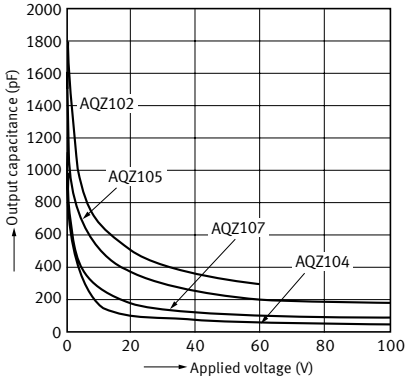
17.Max. operating frequency vs. load voltage and load current characteristics

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



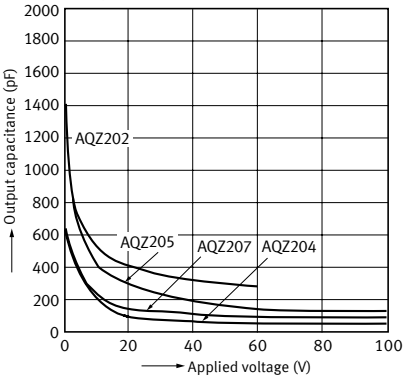
18-1.Output capacitance vs. applied voltage characteristics (DC type)

Frequency: 1 MHz;
Ambient temperature: 25°C



18-2.Output capacitance vs. applied voltage characteristics (AC/DC type)

Frequency: 1 MHz;
Ambient temperature: 25°C



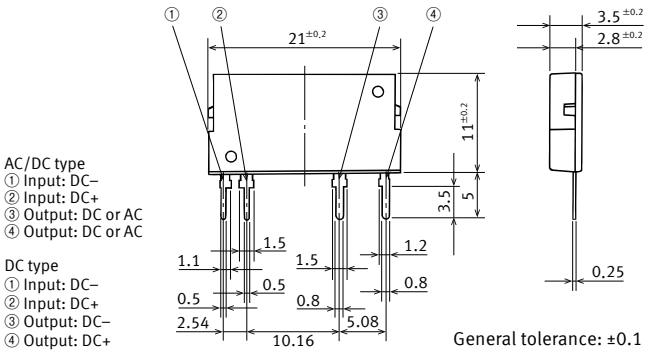
DIMENSIONS

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

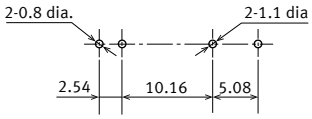
Unit: mm

CAD

External dimensions

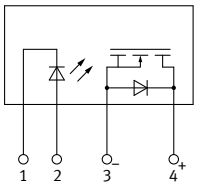
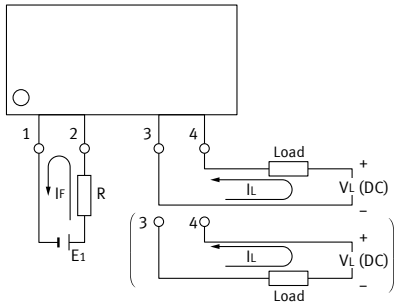
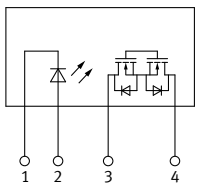
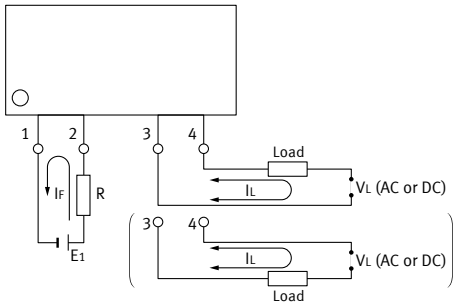


PC board pattern (BOTTOM VIEW)



Tolerance: ±0.1

SCHEMATIC AND WIRING DIAGRAMS

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

SAFETY STANDARDS

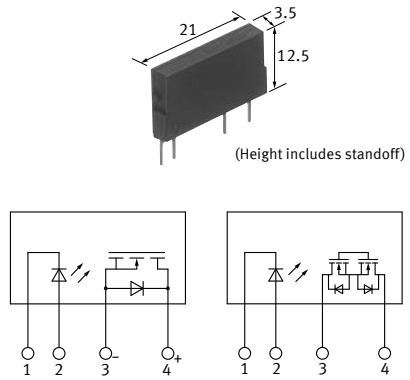
Part No.		UL (Recognized)		CSA (Certified)		Remarks
		File No. (Standard No.)	Contact rating	File No. (Standard No.)	Contact rating	
DC only	AQZ102	E191218 (UL1577)	4.0A 60V DC	(Certified by C-UL)		VDE approved (Nr. 40051981)
	AQZ105		2.6A 100V DC			
	AQZ107		1.3A 200V DC			
	AQZ104		0.7A 400V DC			
AC/DC dual use	AQZ202		3.0A 60V AC (peak) 3.0A 60V DC			
	AQZ205		2.0A 100V AC (peak) 2.0A 100V DC			
	AQZ207		1.0A 200V AC (peak) 1.0A 200V DC			
	AQZ204		0.5A 400V AC (peak) 0.5A 400V 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/

Power 1 Form A

Slim type with high capacity up to 4A DC load type also available



(Unit: mm)

FEATURES

- Slim SIL4-pin package
- Extremely low on-resistance
- Control low-level signal
- Low-level off state leakage current of max. 10 μA
- High I/O isolation voltage of 2,500 V
- Eliminates the need for a counter electromotive protection diode in the drive circuit on the input side
- Eliminates the need for a power supply to drive the power MOSFET
- No restriction on mounting direction
- Low thermoelectromotive force
- Neither noise nor arc at contact
- Sockets are also available

TYPICAL APPLICATIONS

- Traffic signals
- Measuring instruments
- Industrial machines

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
DC only	60 V	4.0 A	AQZ102	25 pcs.	500 pcs.
	100 V	2.6 A	AQZ105		
	200 V	1.3 A	AQZ107		
	400 V	0.7 A	AQZ104		
AC/DC dual use	60 V	3.0 A	AQZ202		
	100 V	2.0 A	AQZ205		
	200 V	1.0 A	AQZ207		
	400 V	0.5 A	AQZ204		

Note: Please refer to the “Cautions for use” regarding the recommended operation load voltage.

*Load voltage and current of AC/DC type: Peak AC/DC. Load voltage and current of DC type: DC.

RATING

DC type

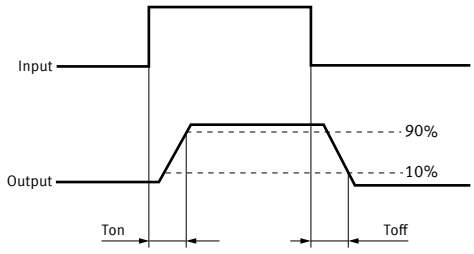
■Absolute maximum ratings (Ambient temperature: 25°C)

Item		Symbol	AQZ102	AQZ105	AQZ107	AQZ104	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 (DC)	V_L	60 V	100 V	200 V	400 V	
	Continuous load current (DC)	I_L	4.0 A	2.6 A	1.3 A	0.7 A	
	Peak load current	I_{peak}	9.0 A	6.0 A	3.0 A	1.5 A	100 ms (1 shot), V_L = DC
	Power dissipation	P_{out}	1.35 W				
Total power dissipation		P_T	1.35 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				

■Electrical characteristics (Ambient temperature: 25°C)

Item			Symbol	AQZ102	AQZ105	AQZ107	AQZ104	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}	0.05 Ω	0.081 Ω	0.34 Ω	1.06 Ω	I_F = 10 mA I_L = Max. Within 1 s
		Maximum		0.09 Ω	0.17 Ω	0.55 Ω	1.6 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}	1.66 ms	1.89 ms	0.83 ms	1.01 ms	I_F = 10 mA I_L = 100 mA V_L = 10 V
		Maximum		5.0 ms				
		Typical		3.79 ms	4.50 ms	1.75 ms	2.34 ms	I_F = 5 mA I_L = 100 mA V_L = 10 V
		Maximum		10.0 ms				
	Turn off time*	Typical	T_{off}	0.15 ms	0.19 ms	0.08 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 = 50% I_L = Max. V_L = 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
LED current		I_F	5	30	mA
AQZ102	Load voltage (DC)	V_L	-	48	V
	Continuous load current (DC)	I_L	-	4.0	A
AQZ105	Load voltage (DC)	V_L	-	80	V
	Continuous load current (DC)	I_L	-	2.6	A
AQZ107	Load voltage (DC)	V_L	-	160	V
	Continuous load current (DC)	I_L	-	1.3	A
AQZ104	Load voltage (DC)	V_L	-	320	V
	Continuous load current (DC)	I_L	-	0.7	A

AC/DC type

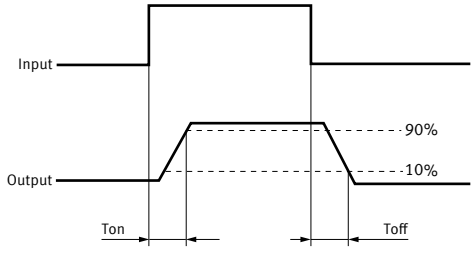
■Absolute maximum ratings (Ambient temperature: 25°C)

Item		Symbol	AQZ202	AQZ205	AQZ207	AQZ204	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 (peak AC)	V_L	60 V	100 V	200 V	400 V	
	Continuous load current	I_L	3.0 A	2.0 A	1.0 A	0.5 A	Peak AC, DC
	Peak load current	I_{peak}	9.0 A	6.0 A	3.0 A	1.5 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				

■Electrical characteristics (Ambient temperature: 25°C)

Item			Symbol	AQZ202	AQZ205	AQZ207	AQZ204	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 = 50% I_L = Max. V_L = Max.

*Turn on/Turn off time



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

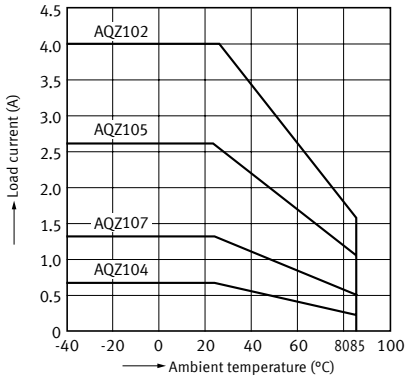
Please use under recommended operating conditions to obtain expected characteristics.

Item		Symbol	Min.	Max.	Unit
LED current		I_F	5	30	mA
AQZ202	Load voltage (Peak AC)	V_L	-	48	V
	Continuous load current	I_L	-	3.0	A
AQZ205	Load voltage (Peak AC)	V_L	-	80	V
	Continuous load current	I_L	-	2.0	A
AQZ207	Load voltage (Peak AC)	V_L	-	160	V
	Continuous load current	I_L	-	1.0	A
AQZ204	Load voltage (Peak AC)	V_L	-	320	V
	Continuous load current	I_L	-	0.5	A

REFERENCE DATA

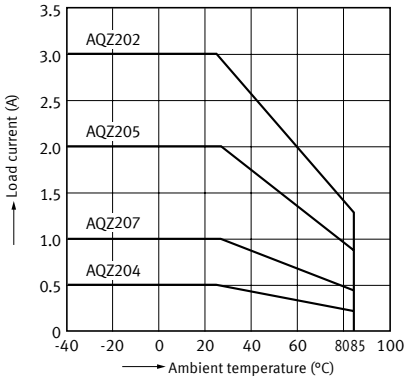
1-1.Load current vs. ambient temperature characteristics (DC type)

Allowable ambient temperature: −40 to +85°C



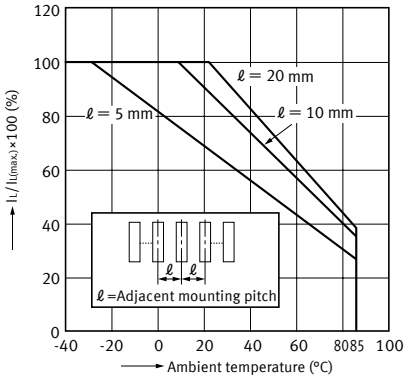
1-2.Load current vs. ambient temperature characteristics (AC/DC type)

Allowable ambient temperature: −40 to +85°C



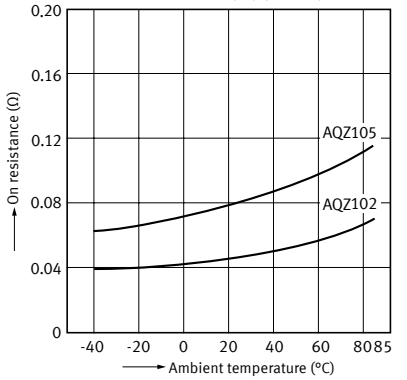
2.Load current vs. ambient temperature characteristics in adjacent mounting

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



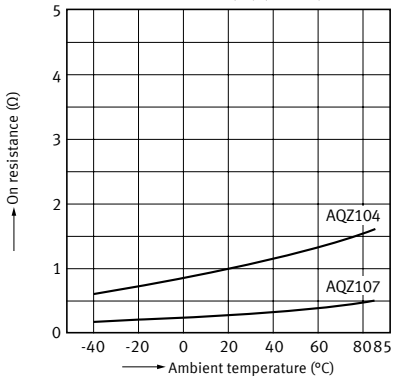
3-1.On resistance vs. ambient temperature characteristics (DC type)

LED current: 10 mA;
Continuous load current: 1.6 A (DC) (AQZ102),
1.04 A (DC) (AQZ105)



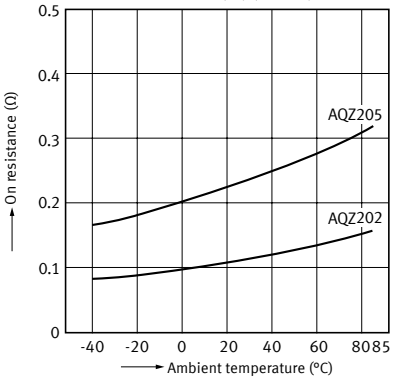
3-2.On resistance vs. ambient temperature characteristics (DC type)

LED current: 10 mA;
Continuous load current: 0.52 A (DC) (AQZ107),
0.28 A (DC) (AQZ104)



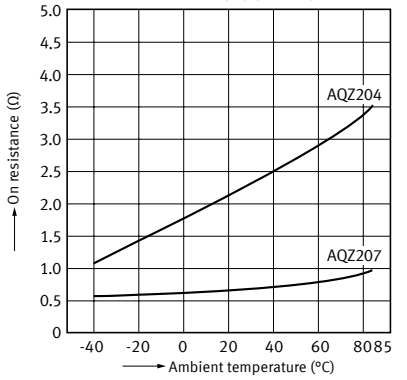
3-3.On resistance vs. ambient temperature characteristics (AC/DC type)

LED current: 10 mA;
Continuous load current: 1.2 A (DC) (AQZ202),
0.8 A (DC) (AQZ205)



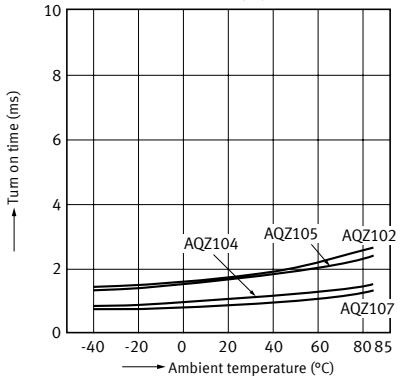
3-4.On resistance vs. ambient temperature characteristics (AC/DC type)

LED current: 10 mA;
Continuous load current: 0.4 A (DC) (AQZ207),
0.2 A (DC) (AQZ204)



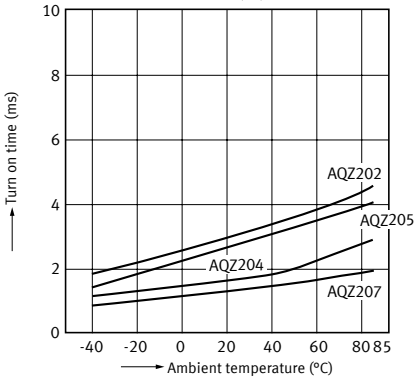
4-1.Turn on time vs. ambient temperature characteristics (DC type)

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



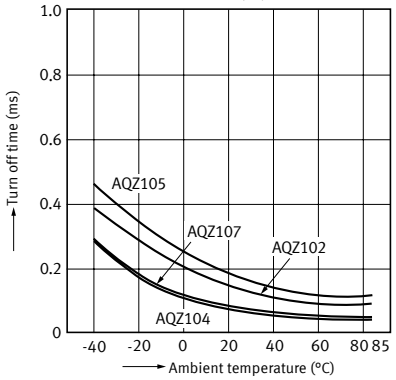
4-2.Turn on time vs. ambient temperature characteristics (AC/DC type)

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



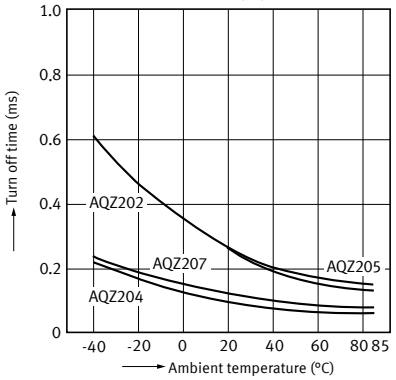
5-1.Turn off time vs. ambient temperature characteristics (DC type)

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



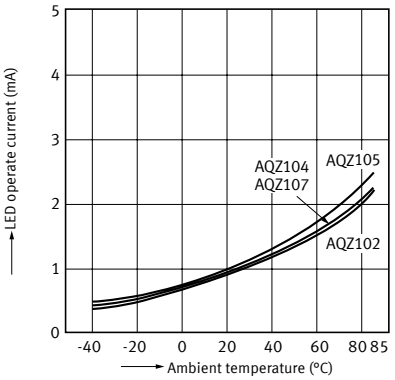
5-2.Turn off time vs. ambient temperature characteristics (AC/DC type)

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



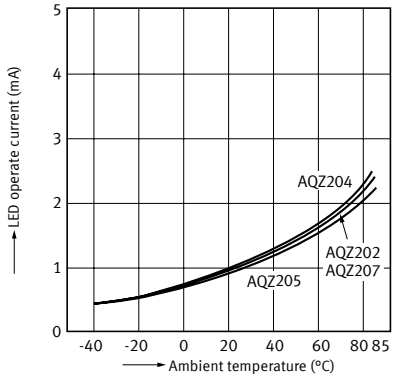
6-1.LED operate current vs. ambient temperature characteristics (DC type)

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



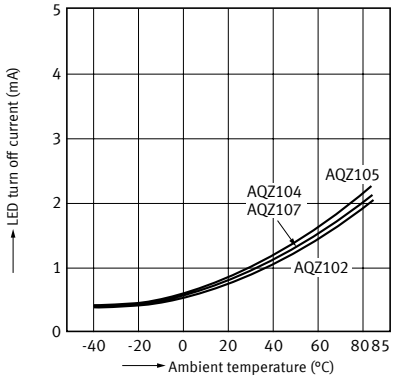
6-2.LED operate current vs. ambient temperature characteristics (AC/DC type)

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



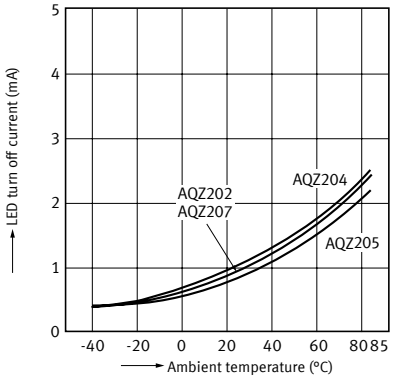
7-1.LED turn off current vs. ambient temperature characteristics (DC type)

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



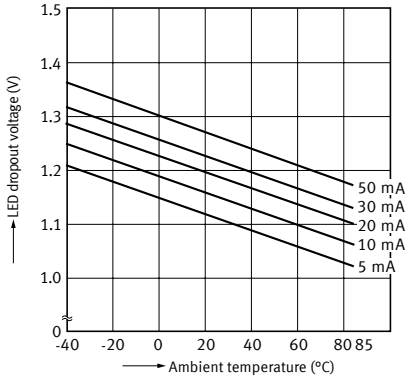
7-2.LED turn off current vs. ambient temperature characteristics (AC/DC type)

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



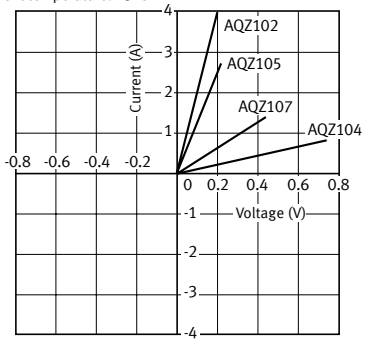
8.LED dropout voltage vs. ambient temperature characteristics

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



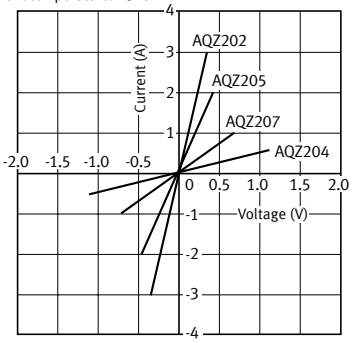
9-1.Current vs. voltage characteristics of output at MOS portion (DC type)

Ambient temperature: 25°C



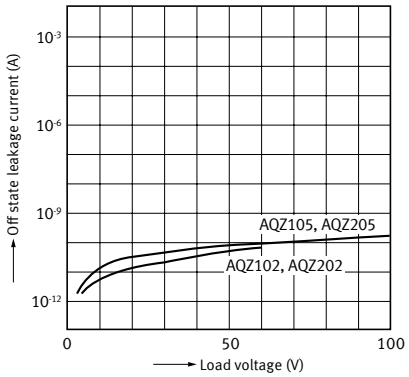
9-2.Current vs. voltage characteristics of output at MOS portion (AC/DC type)

Ambient temperature: 25°C



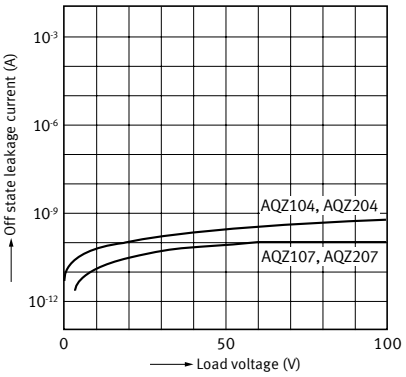
10-1.Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C



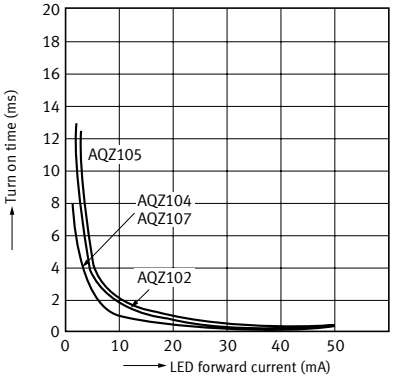
10-2.Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C



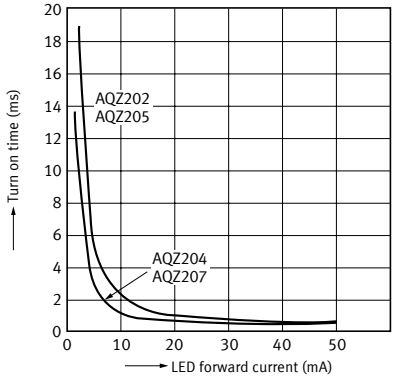
11-1.Turn on time vs. LED forward current characteristics (DC type)

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



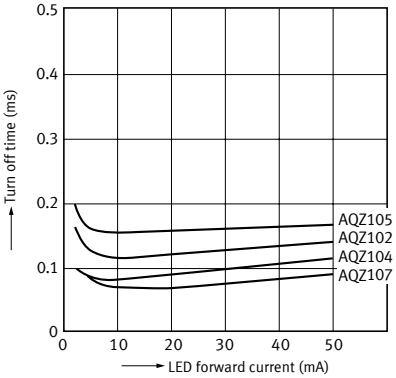
11-2.Turn on time vs. LED forward current characteristics (AC/DC type)

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



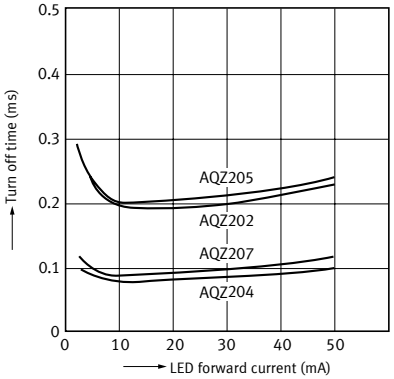
12-1.Turn off time vs. LED forward current characteristics (DC type)

Measured portion: between terminals 4 and 6;
Load voltage: 10 V (DC);
Continuous load current: 100 mA (DC);
Ambient temperature: 25°C



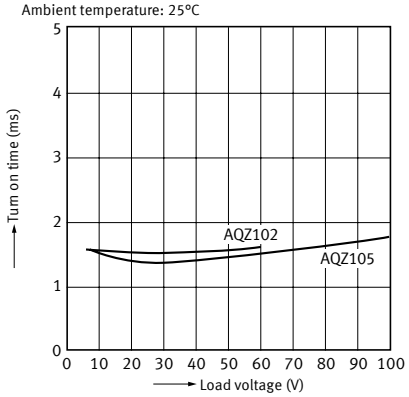
12-2.Turn off time vs. LED forward current characteristics (AC/DC type)

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



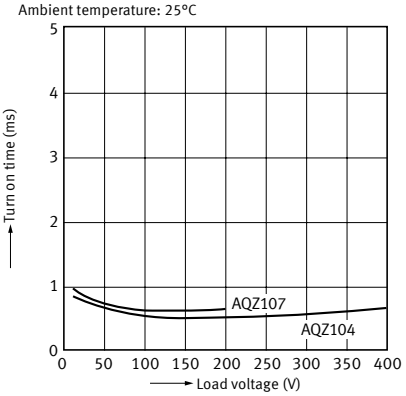
13-1.Turn on time vs. load voltage characteristics (DC type)

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



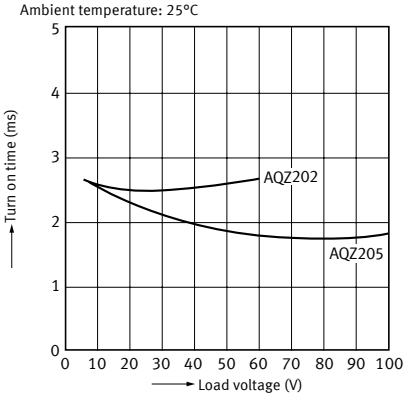
13-2.Turn on time vs. load voltage characteristics (DC type)

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



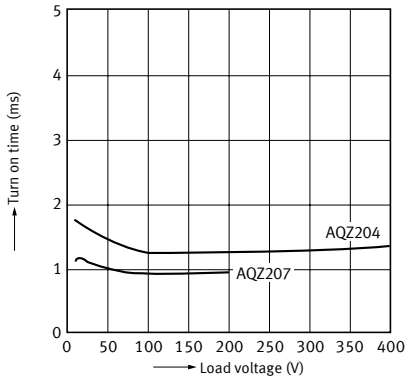
13-3.Turn on time vs. load voltage characteristics (AC/DC type)

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



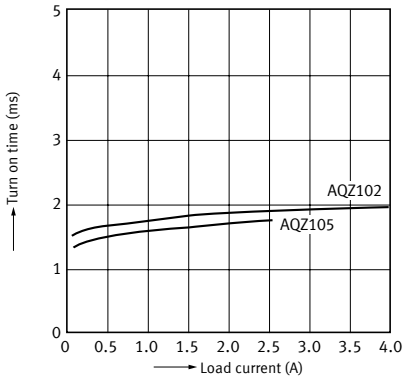
13-4.Turn on time vs. load voltage characteristics (AC/DC type)

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



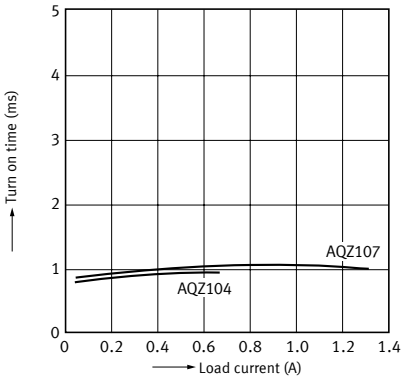
14-1.Turn on time vs. load current characteristics (DC type)

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



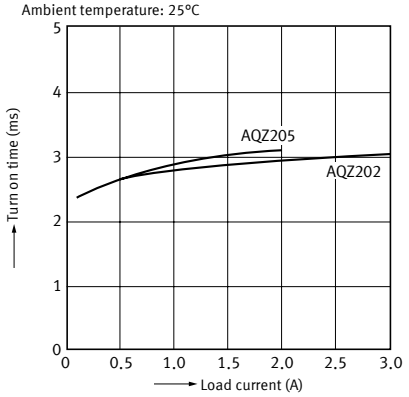
14-2.Turn on time vs. load current characteristics (DC type)

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



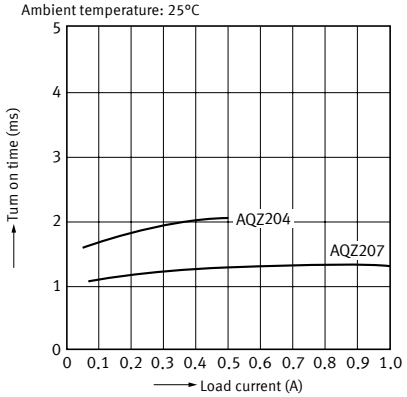
14-3.Turn on time vs. load current characteristics (AC/DC type)

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



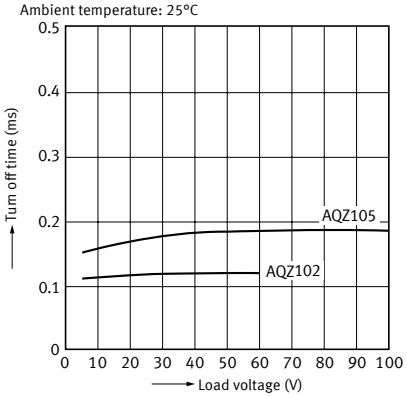
14-4.Turn on time vs. load current characteristics (AC/DC type)

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



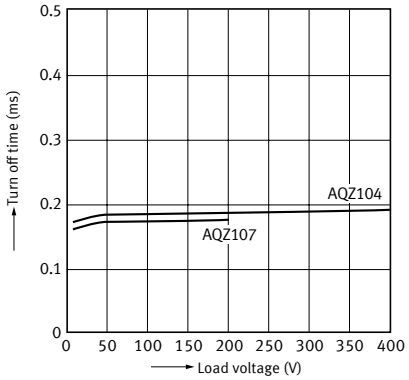
15-1.Turn off time vs. load voltage characteristics (DC type)

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



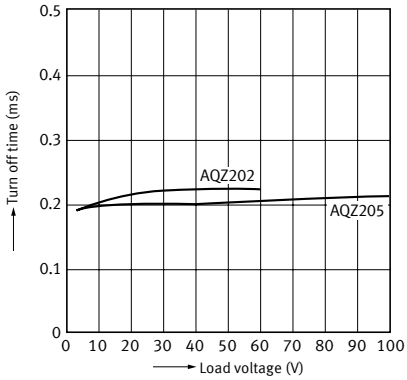
15-2.Turn off time vs. load voltage characteristics (DC type)

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



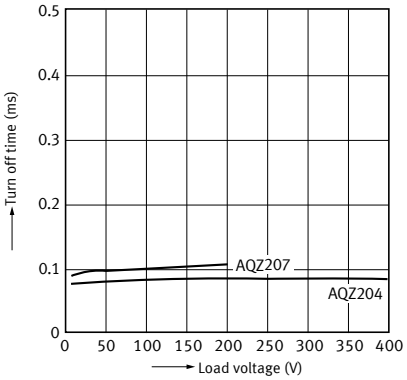
15-3.Turn off time vs. load voltage characteristics (AC/DC type)

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



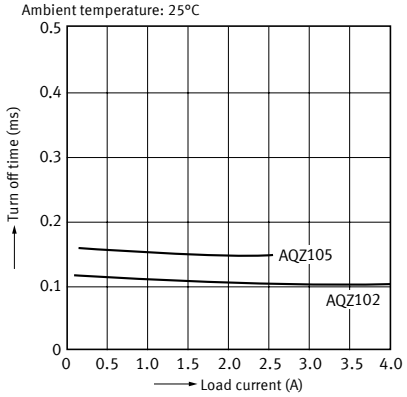
15-4.Turn off time vs. load voltage characteristics (AC/DC type)

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



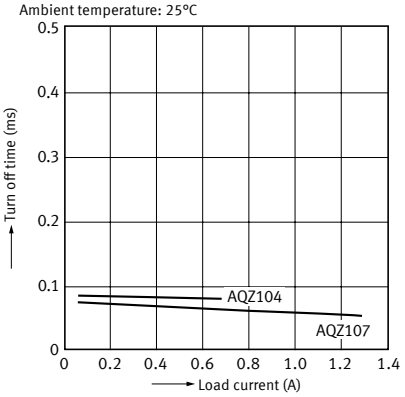
16-1.Turn off time vs. load current characteristics (DC type)

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



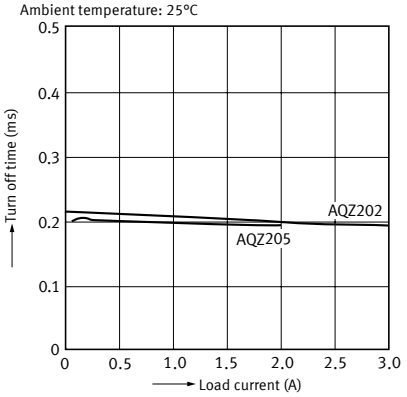
16-2.Turn off time vs. load current characteristics (DC type)

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



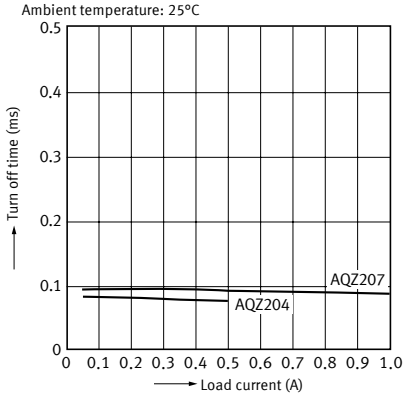
16-3.Turn off time vs. load current characteristics (AC/DC type)

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



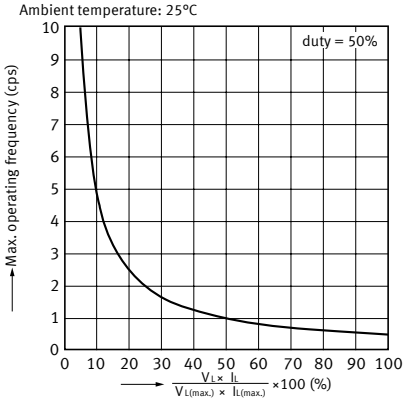
16-4.Turn off time vs. load current characteristics (AC/DC type)

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



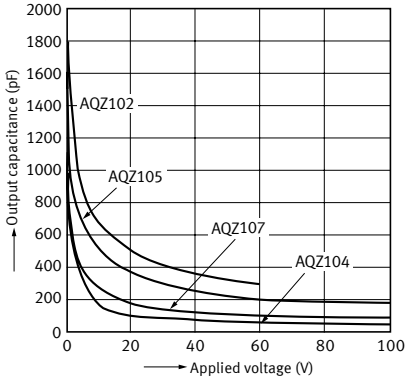
17.Max. operating frequency vs. load voltage and load current characteristics

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



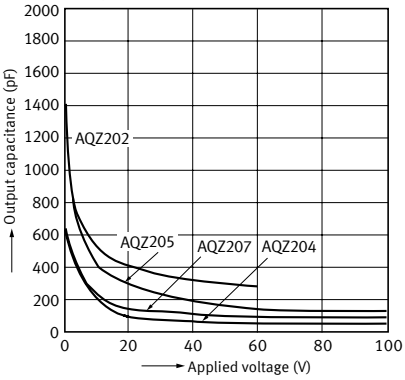
18-1.Output capacitance vs. applied voltage characteristics (DC type)

Frequency: 1 MHz;
Ambient temperature: 25°C



18-2.Output capacitance vs. applied voltage characteristics (AC/DC type)

Frequency: 1 MHz;
Ambient temperature: 25°C

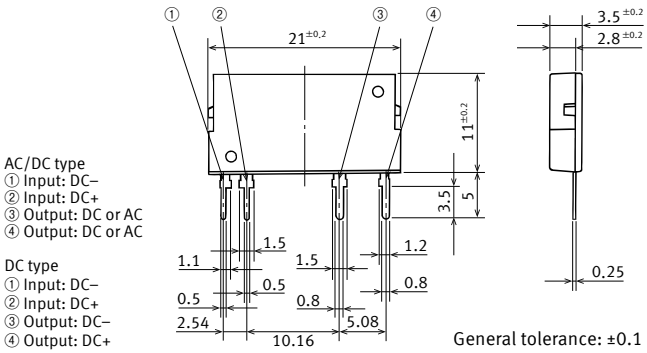


DIMENSIONS

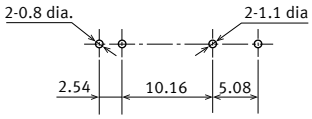
CAD The CAD data of the products with a "CAD" mark can be downloaded from our Website. Unit: mm

CAD

External dimensions

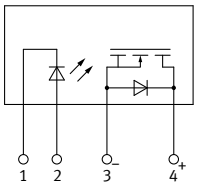
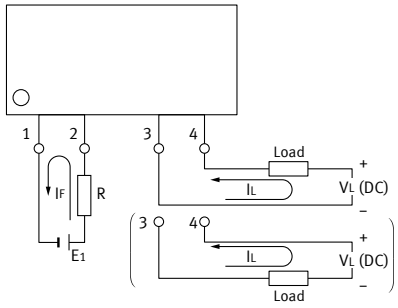
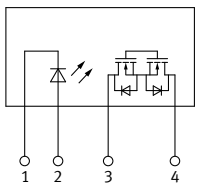
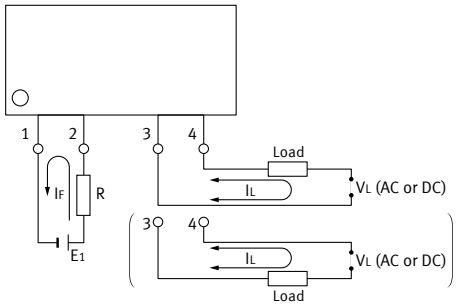


PC board pattern (BOTTOM VIEW)



Tolerance: ±0.1

SCHEMATIC AND WIRING DIAGRAMS

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

SAFETY STANDARDS

Part No.		UL (Recognized)		CSA (Certified)		Remarks
		File No. (Standard No.)	Contact rating	File No. (Standard No.)	Contact rating	
DC only	AQZ102	E191218 (UL1577)	4.0A 60V DC	(Certified by C-UL)		VDE approved (Nr. 40051981)
	AQZ105		2.6A 100V DC			
	AQZ107		1.3A 200V DC			
	AQZ104		0.7A 400V DC			
AC/DC dual use	AQZ202		3.0A 60V AC (peak) 3.0A 60V DC			
	AQZ205		2.0A 100V AC (peak) 2.0A 100V DC			
	AQZ207		1.0A 200V AC (peak) 1.0A 200V DC			
	AQZ204		0.5A 400V AC (peak) 0.5A 400V 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/

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