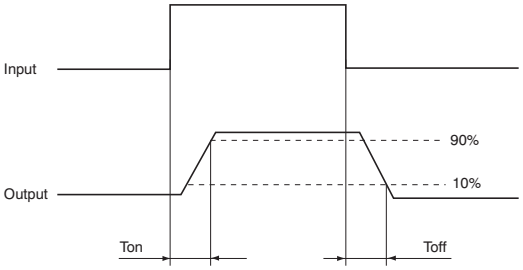
2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	AQY221N3V	Condition
Input	LED operate current	Typical	I_{Fon}	1.0 mA	I_L = 80 mA
		Maximum		3.0 mA	
	LED turn off current	Minimum	I_{Foff}	0.2 mA	I_L = 80 mA
		Typical		0.9 mA	
	LED dropout voltage	Typical	V_F	1.35 V (1.14 V at I_F = 5 mA)	I_F = 50 mA
		Maximum		1.5 V	
Output	On resistance	Typical	R_{on}	5.5Ω	I_F = 5 mA, I_L = 80 mA Within 1 s on time
		Maximum		7.5Ω	
	Output capacitance	Typical	C_{out}	1.0 pF	I_F = 0 mA, V_B = 0 V f = 1 MHz
		Maximum		1.5 pF	
	Off state leakage current	Typical	I_{Leak}	0.01 nA	I_F = 0 mA V_L = Max.
		Maximum		10 nA	
Transfer characteristics	Turn on time*	Typical	T_{on}	0.02 ms	I_F = 5 mA, V_L = 10 V R_L = 125Ω
		Maximum		0.2 ms	
	Turn off time*	Typical	T_{off}	0.02 ms	I_F = 5 mA, V_L = 10 V R_L = 125Ω
		Maximum		0.2 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}	1,000MΩ	500V DC

Note: Variation possible through combinations of output capacitance and on resistance. For more information, please contact our sales office in your area.

*Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

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

Item	Symbol	Recommended value	Unit
Input LED current	I_F	5	mA

■ Dimensions

■ Schematic and Wiring Diagrams

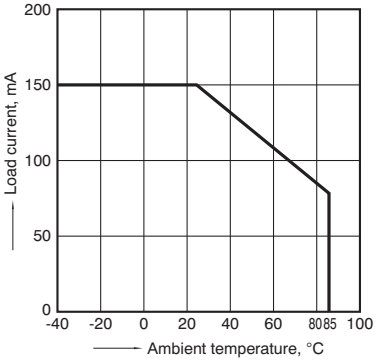
■ Cautions for Use

■ These products are not designed for automotive use.
If you are considering to use these products for automotive applications, please contact your local Panasonic Electric Works technical representative.
Please refer to our information on PhotoMOS Relays for Automotive Applications.

REFERENCE DATA

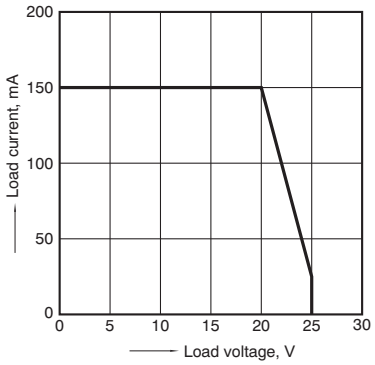
1. Load current vs. ambient temperature characteristics

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



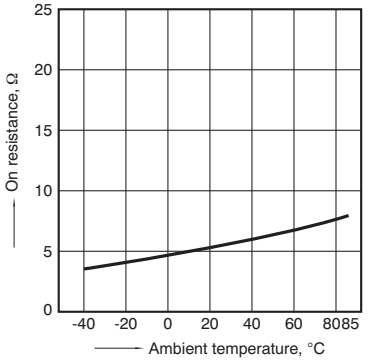
2. Load current vs. Load voltage characteristics

Ambient temperature: 25°C 77°F



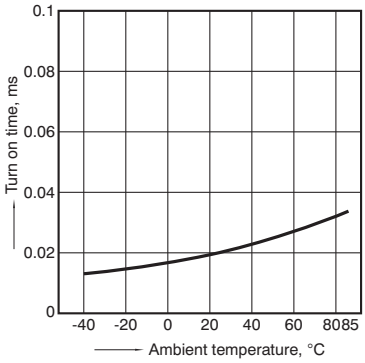
3. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
LED current: 5 mA; Load voltage: 10V (DC);
Load current: 80mA (DC)



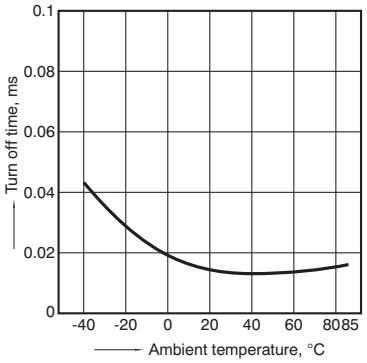
4. Turn on time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



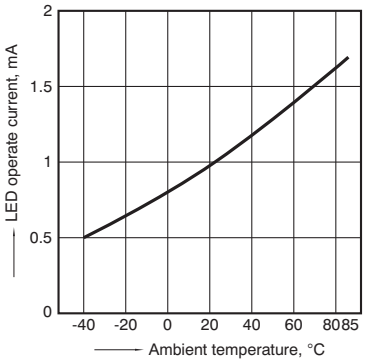
5. Turn off time vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



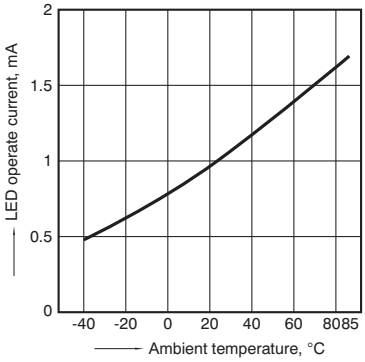
6. LED operate current vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



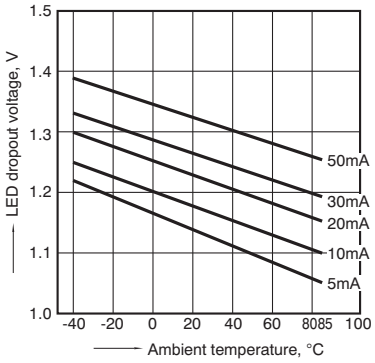
7. LED turn off current vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



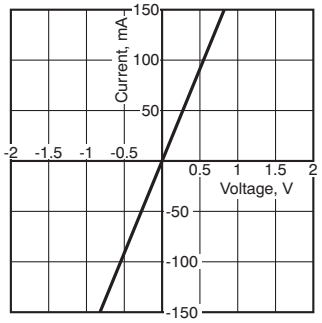
8. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



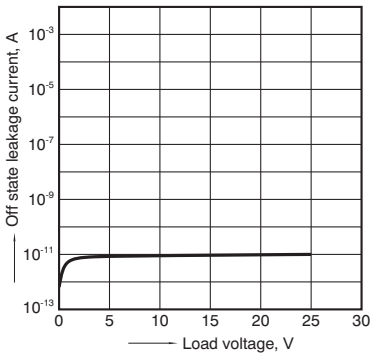
9. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



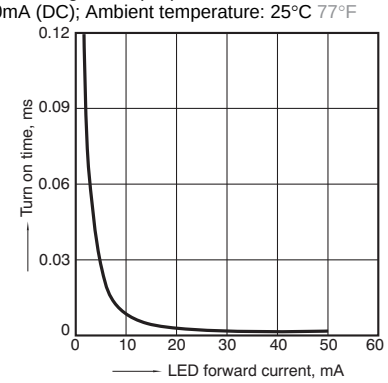
10.Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



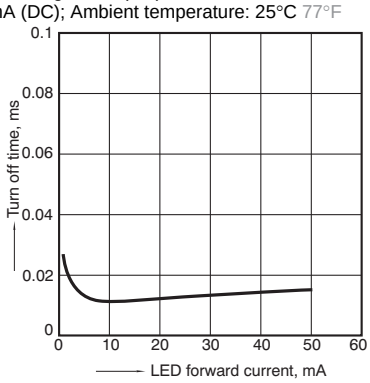
11.Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4
Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



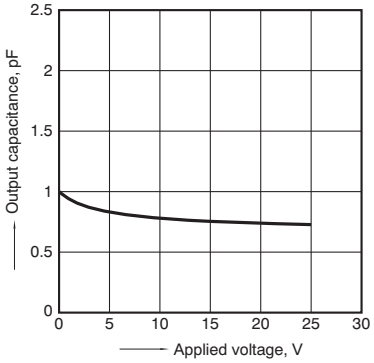
12.Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4
Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



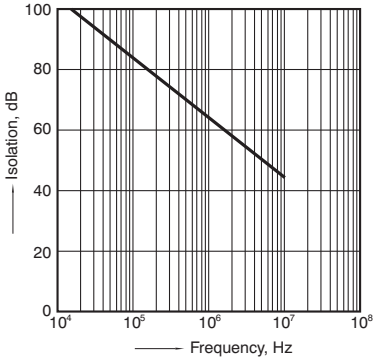
13.Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4
Frequency: 1 MHz, 30m Vrms; Ambient temperature: 25°C 77°F



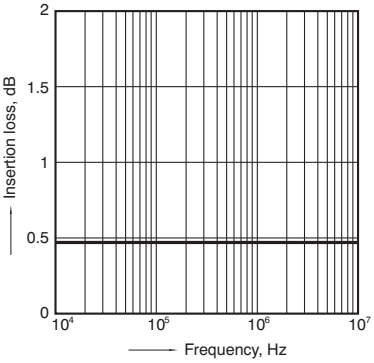
14.Isolation vs. frequency characteristics (50Ω impedance)

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F



15.Insertion loss vs. frequency characteristics (50Ω impedance)

Measured portion: between terminals 3 and 4
Ambient temperature: 25°C 77°F

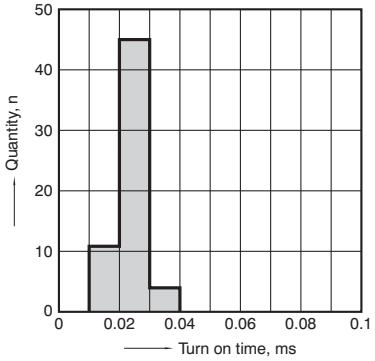


16.On resistance distribution

Measured portion: between terminals 3 and 4
Continuous load current: 80mA (DC)
Ambient temperature: 25°C 77°F

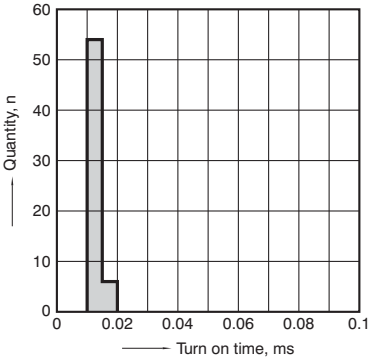
17.Turn on time distribution

Load voltage: 10V (DC)
Continuous load current: 80mA (DC)
Ambient temperature: 25°C 77°F



18.Turn off time distribution

Load voltage: 10V (DC)
Continuous load current: 80mA (DC)
Ambient temperature: 25°C 77°F



19.LED operate current distribution

Load voltage: 10V (DC)
Continuous load current: 80mA (DC)
Ambient temperature: 25°C 77°F