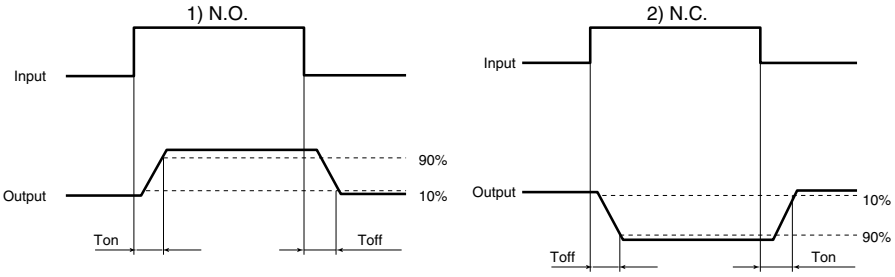
2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	AQW612S	AQW610S	Condition
Input	LED operate current	Typical	I_{Fon} (N.O.) I_{Foff} (N.C.)	0.9 mA		I_L = Max.
		Maximum		3 mA		
	LED reverse current	Minimum	I_{Foff} (N.O.) I_{Fon} (N.C.)	0.4 mA		I_L = Max.
		Typical		0.8 mA		
	LED dropout voltage	Typical	V_F	1.25 V (1.14 V at I_F = 5 mA)		I_F = 50 mA
		Maximum		1.5 V		
Output	On resistance	Typical	R_{on}	1 Ω	18 Ω	I_F = 5 mA (N.O.) I_F= 0 mA (N.C.) I_L = Max. Within 1 s
		Maximum		2.5 Ω	25 Ω	
	Off state leakage current	Maximum	I_{Leak}	1 μA		I_F = 0 mA (N.O.) I_F= 5 mA (N.C.) V_L = Max.
Transfer characteristics	Operate time*	Typical	T_{on} (N.O.) T_{off} (N.C.)	0.65 ms (N.O.), 0.9 ms (N.C.)	0.28 ms (N.O.), 0.52 ms (N.C.)	I_F = 0 mA → 5 mA I_L = Max.
		Maximum		3.0 ms	1.0 ms	
	Reverse time*	Typical	T_{off} (N.O.) T_{on} (N.C.)	0.08 ms (N.O.), 0.2 ms (N.C.)	0.04 ms (N.O.), 0.23 ms (N.C.)	I_F = 5 mA → 0 mA I_L = Max.
		Maximum		1.0 ms	1.0 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

*Operate/Reverse time



3. Recommended operating conditions (Ambient temperature: 25°C 77°F)

Please use under recommended operating conditions to obtain expected characteristics.

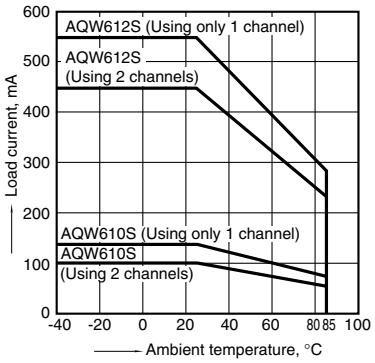
Item		Symbol	Number of used channels	Min.	Max.	Unit
LED current		I_F		5	30	mA
AQW612S	Load voltage (Peak AC)	V_L		—	48	V
	Continuous load current	I_L	1ch 2ch	—	0.55 0.45	A
AQW610S	Load voltage (Peak AC)	V_L		—	280	V
	Continuous load current	I_L	1ch 2ch	—	0.13 0.1	A

■ **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

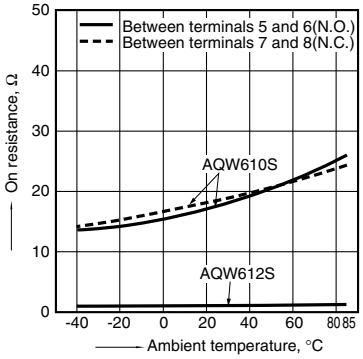
1. Load current vs. ambient temperature characteristics

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



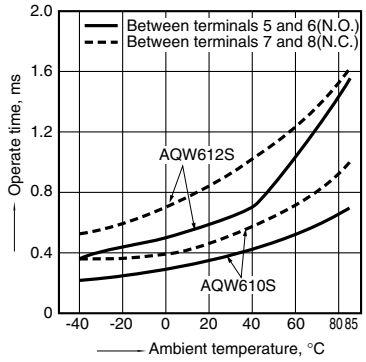
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 5 and 6, 7 and 8; LED current: 5 mA; Load voltage: Max. (DC); Continuous load current: Max. (DC)



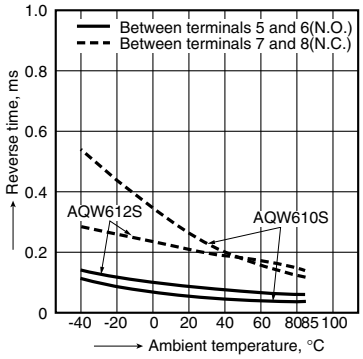
3. Operate time vs. ambient temperature characteristics

LED current: 5 mA;
Load voltage: Max. (DC);
Continuous load current: Max. (DC)



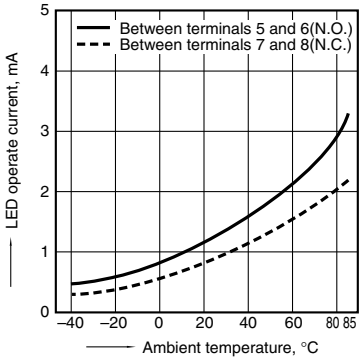
4. Reverse time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: Max. (DC);
Continuous load current: Max. (DC)



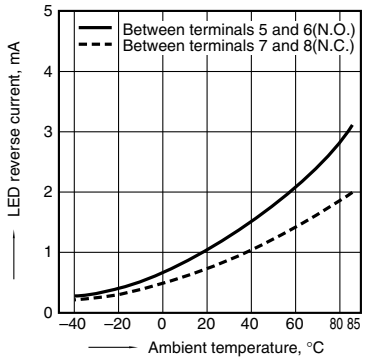
5. LED operate current vs. ambient temperature characteristics

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



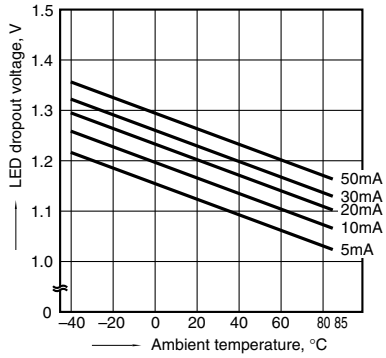
6. LED reverse current vs. ambient temperature characteristics

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



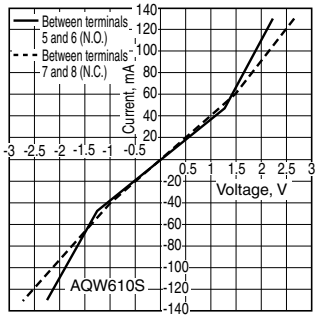
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



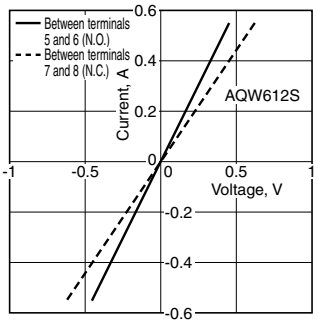
8-(1). Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 5 and 6, 7 and 8;
Ambient temperature: 25°C 77°F



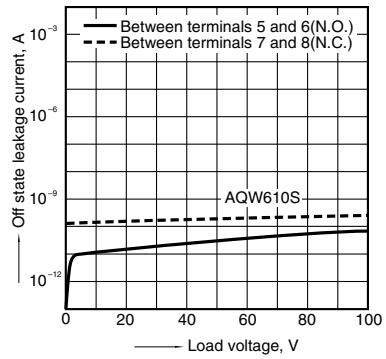
8-(2). Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 5 and 6, 7 and 8;
Ambient temperature: 25°C 77°F



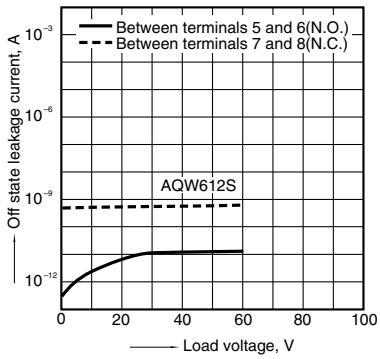
9-(1). Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Ambient temperature: 25°C 77°F



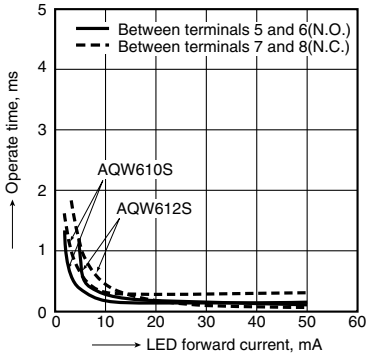
9-(2). Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8;
Ambient temperature: 25°C 77°F



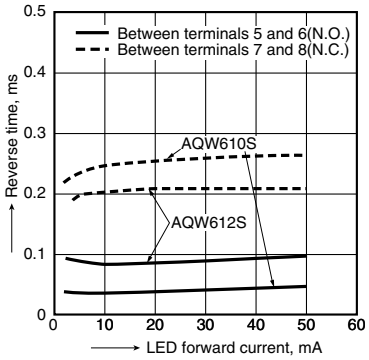
10. Operate time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8; Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



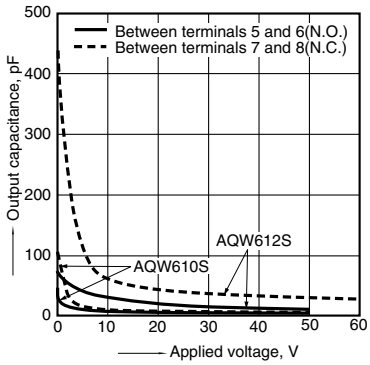
11. Reverse time vs. LED forward current characteristics

Measured portion: between terminals 5 and 6, 7 and 8; Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



12. Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 5 and 6, 7 and 8; LED current: 0 mA (N.O.), 5 mA (N.C.); Frequency: 1 MHz; Ambient temperature: 25°C 77°F



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