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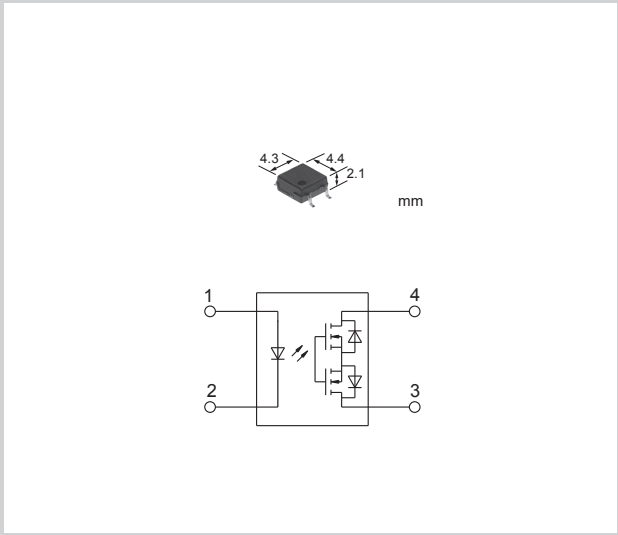
RoHS

GU SOP 1 Form A High Capacity

Low on-resistance, Miniature (SOP 4-pin), 200 V load voltage



(Unit: mm)

FEATURES

1. Low on-resistance (Typical: 1.8 Ω)
2. Miniature SOP package
3. Load voltage: 200 V

TYPICAL APPLICATIONS

- **Measuring instrument market**
  Tester, etc.
- **Security and disaster prevention market**
  Use in I/O sections for alarm and security devices, etc.
- **Industrial machinery and equipment**

*For latest information of the safety standard, please see the website.

TYPES

Packing quantity: Inner carton (Tube packing style) 100 pieces, Outer carton 2,000 pieces
Inner carton (Tape and reel packing style) 1,000 pieces, Outer carton 1,000 pieces

	*Output rating		Part No.		
	Load voltage	Load current	Tube packing style	Tape and reel packing X style (Picked from the 1/2-pin side)	Tape and reel packing Z style (Picked from the 3/4-pin side)
AC/DC dual use New	200 V	0.4 A	**AQY217GS**	**AQY217GSX**	**AQY217GSZ**

Note: For space reasons, the three initial letters of the part number "AQY", the small outline package indicator "S" and the packing style indicator "X" or "Z" are not marked on the device.
*Indicate the peak AC and DC values.

RATING

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

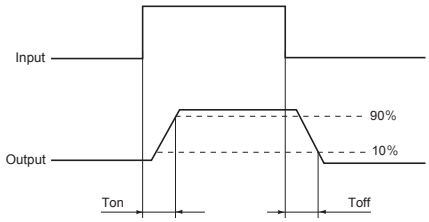
Item		Symbol	AQY217GS	Remarks
Input	LED forward current	I_F	50 mA	
	LED reverse voltage	V_R	5 V	
	Peak forward current	I_{FP}	1 A	f = 100 Hz, Duty factor = 0.1%
	Power dissipation	P_{in}	75 mW	
Output	Load voltage (peak AC)	V_L	200 V	
	Continuous load current	I_L	0.4 A	Peak AC, DC
	Peak load current	I_{peak}	1.2 A	100 ms (1 shot), V_L = DC
	Power dissipation	P_{out}	400 mW	
Total power dissipation		P_T	450 mW	
I/O isolation voltage		V_{iso}	1,500 Vrms	
Operating ambient temperature		T_{opr}	–40 to +85°C	(Non-icing at low temperatures)
Storage temperature		T_{stg}	–40 to +100°C	

■ Electrical characteristics (Ambient temperature: 25°C)

Item			Symbol	AQY217GS	Conditions
Input	LED operate current	Typical	I_{Fon}	0.75 mA	I_L = 100 mA
		Maximum		3.0 mA	
	LED turn off current	Minimum	I_{Foff}	0.2 mA	I_L = 100 mA
		Typical		0.7 mA	
	LED dropout voltage	Typical	V_F	1.32 V (1.14 V at I_F = 5 mA)	I_F = 50 mA
		Maximum		1.5 V	
Output	On resistance	Typical	R_{on}	1.8 Ω	I_F = 5 mA I_L = Max. Within 1 s
		Maximum		2.5 Ω	
	Off state leakage current	Maximum	I_{Leak}	1 μA	I_F = 0 mA V_L = Max.
Transfer characteristics	*Turn on time	Typical	T_{on}	1.2 ms	I_F = 5 mA I_L = 100 mA V_L = 10 V
		Maximum		5 ms	
	*Turn off time	Typical	T_{off}	0.03 ms	I_F = 5 mA I_L = 100 mA V_L = 10 V
		Maximum		0.2 ms	
	I/O capacitance	Typical	C_{iso}	0.8 pF	f = 1 MHz V_B = 0 V
		Maximum		1.5 pF	
	I/O isolation resistance	Minimum	R_{iso}	1,000 MΩ	500 V DC
	Maximum switching frequency	Maximum	—	10 cps	I_F = 5 mA Duty = 50 % I_L = Max., V_L = Max.

Note: For the connection method, please refer to the schematic and wiring diagrams.

*Turn on/Turn off time



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

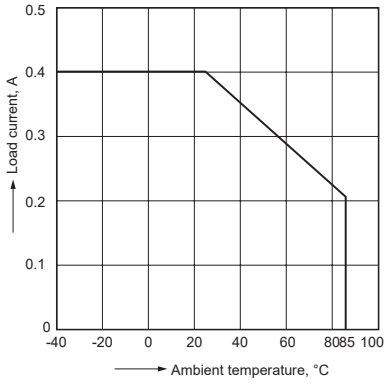
Please use under recommended operating conditions to obtain expected characteristics.

Item		Symbol	Minimum	Maximum	Unit
LED forward current		I_F	5	30	mA
AQY217GS	Load voltage (peak AC)	V_L	—	160	V
	Continuous load current	I_L	—	0.4	A

REFERENCE DATA

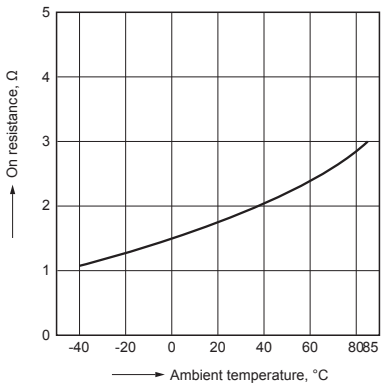
1. Load current vs. ambient temperature characteristics

Allowable ambient temperature: –40 to +85°C



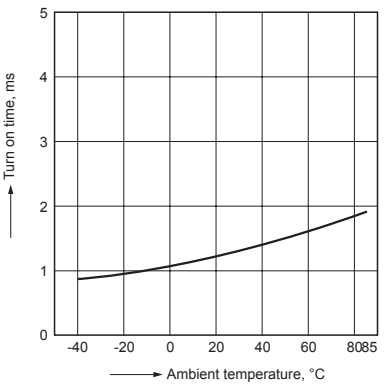
2. On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
LED forward current: 5 mA; Load voltage: Max. (DC)
Continuous load current: Max.(DC)

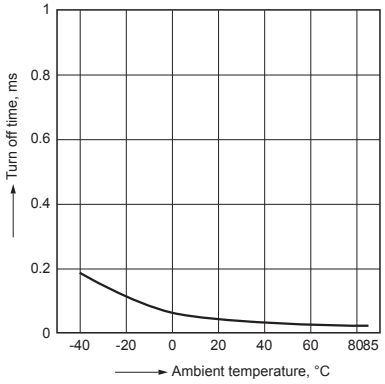


3. Turn on time vs. ambient temperature characteristics

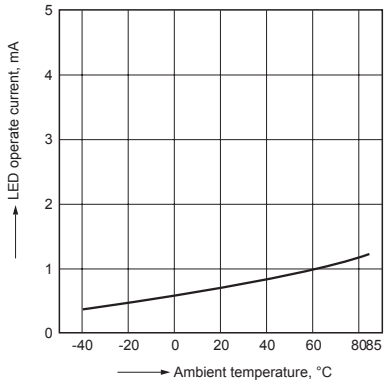
LED forward current: 5 mA, Load voltage: 10 V (DC)
Continuous load current: 100 mA (DC)



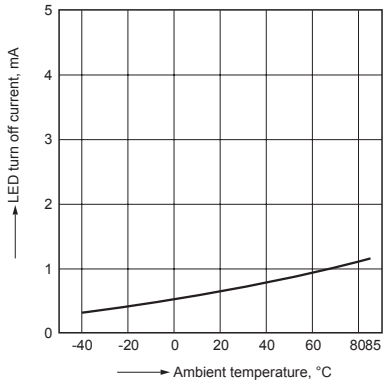
4. Turn off time vs. ambient temperature characteristics
LED forward current: 5 mA
Load voltage: 10 V (DC)
Continuous load current: 100 mA (DC)



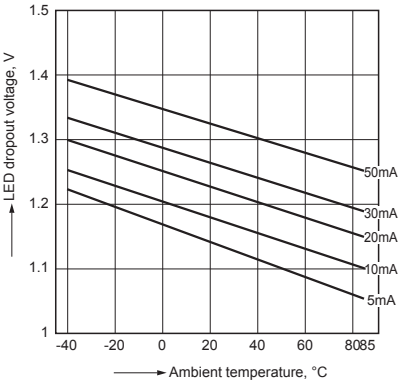
5. LED operate current vs. ambient temperature characteristics
Load voltage: 10 V (DC)
Continuous load current: 100 mA (DC)



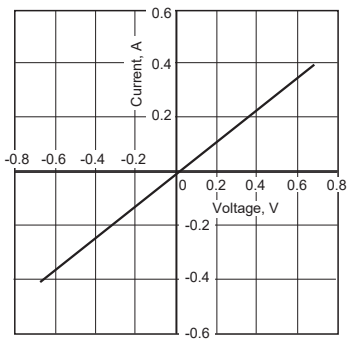
6. LED turn off current vs. ambient temperature characteristics
Load voltage: 10 V (DC)
Continuous load current: 100 mA (DC)



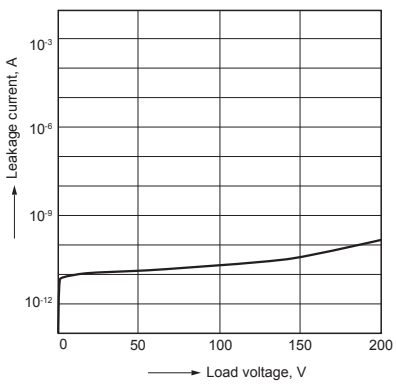
7. LED dropout voltage vs. ambient temperature characteristics
LED forward current: 5 to 50 mA



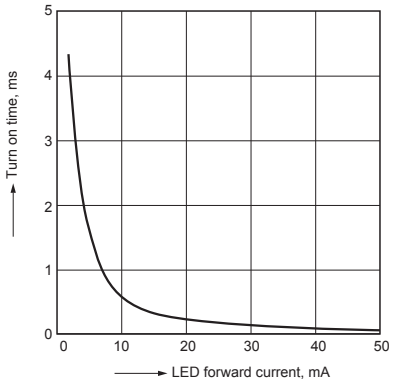
8. Current vs. voltage characteristics of output at MOS portion
Ambient temperature: 25 °C



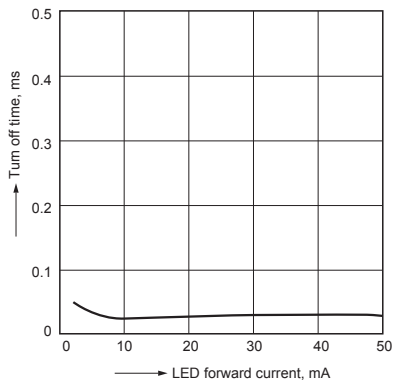
9. Off state leakage current vs. load voltage characteristics
Measured portion: between terminals 3 and 4
Ambient temperature: 25 °C



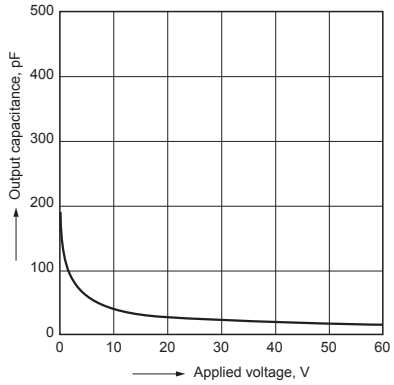
10. Turn on time vs. LED forward current characteristics
Measured portion: between terminals 3 and 4
Load voltage: 10 V (DC), Continuous load current: 100 mA (DC), Ambient temperature: 25 °C



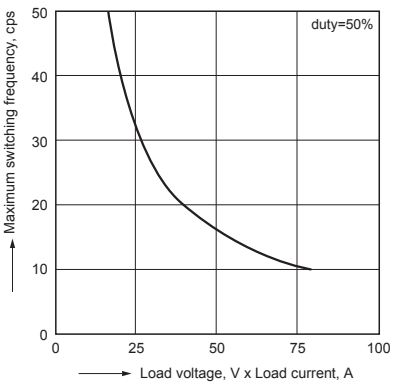
11. Turn off time vs. LED forward current characteristics
Measured portion: between terminals 3 and 4
Load voltage: 10 V (DC), Continuous load current: 100 mA (DC), Ambient temperature: 25 °C



12. Output capacitance vs. applied voltage characteristics
Measured portion: between terminals 3 and 4
Frequency: 1 MHz, Ambient temperature: 25 °C



13. Maximum switching frequency vs. load voltage and load current
LED forward current: 5 mA
Ambient temperature: 25 °C



NOTES

■ For general notice, please read "PhotoMOS® Cautions for Use" in our website.

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